ROLE OF MOBILE TECHNOLOGY IN PROMOTING CAMPUS-WIDE LEARNING ENVIRONMENT

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ABSTRACT
The present study examines the role of mobile technology in promoting campus-wide learning environment. Its main objectives were to a) evaluate the role of mobile technology in higher education in terms of its i). appropriateness ii). flexibility iii). Interactivity, & iv). availability & usefulness and to b). identify the problems of students with mobile technology.

The population of the study consisted of all the Ph.D scholars (N= 83) and faculty (N=10) of the Department of Education, International Islamic University, Islamabad. The samples of the study comprised of 100% of both the populations. The study was descriptive in nature, therefore survey approach was considered appropriate. The researchers used questionnaires as research tools developed on five point rating (likert) scale to collect the data from the respondents (students and faculty respectively). The researchers personally administered the finalized research tools (through pilot testing) to the respondents to collect the data. The data collected was analyzed through applying the mean score and percentage and main findings were (i) 92% of the respondents (students and faculty) were of the opinion that mobile technology is appropriate for effective communication and interaction (ii). 94% of the respondents ((students and faculty) were of the view that mobile technology promotes flexible interactive learning environment (iii). 93% of the respondents (students) supported that they do face problems with technology.

Keeping in view these findings, it was concluded that mobile technology is appropriate for research and education throughout the campus as it promotes effective interaction among faculty and scholars.

Keywords: Mobile Technology, Personal Digital Assistants, Information and Communication Technologies, Mobility, Synchronous Communication, Asynchronous Communication.

INTRODUCTION

21st century is said to be a century of knowledge and sharing of knowledge. Information and communication technology is taking over all aspects of human life and activities (Hussain, 2007). Developments in information and communication technologies (ICTs) lead to the creation of "portable computing/ communication devices such as laptops, PDAs and smart phones connected to wireless networks" (Corbeil & Valdes-Corbeil, 2007, p.51) to promote and enhance opportunities of advanced communication. Mobile technology such as iPods, MP3 Player, Personal Digital Assistants (PDAs), USB Drive, E-Book Reader, Smart Phone, Ultra-Mobile PC (UMPC) and Laptop/Tablet PC seems having capabilities of storage and transmission of data and information either in sound, text, sound-text, pictures or all (Corbeil & Valdes-Corbeil 2007). Such devices may extend the opportunities of synchronous as well as asynchronous communication. In education and training, the use of mobile technology is likely to change the nature of teaching and learning process as well as the training of teachers as more individuals and institutions are applying mobile technology in training programmes and incorporating it for real time (Holmes & Schmidt, 2002) performance support and evaluation in developed as well as developing countries like Pakistan.

Such real time performance supports what Shield & Poftak (2002) predicted can "revolutionize the face of learning" (p.24). Rather it has changed the learning material as different institutions and service departments are extensively now using mobile technology in different ways according to their needs and circumstances. Ally (2007) ha provided some evidences such as its use is increasing in business, healthcare, training of field workers in extension services for exchange of information and communication, entertainment and socialization.

The use of mobile technology, particularly Mobile phone, is popular technology in Pakistan. People from different walks of life are keen to use the technology according to their needs, interests and situations & circumstances. For example, a shepherd would be making a phone call through mobile phone to his wife and talking to his, a researcher would be downloading and manipulating data on laptops through Wi-Fi network,

students would be recording lectures of their teachers in classrooms, an executive coming to the office would be sending a text message to arrange for a meeting and others would be discussing and sharing their learning experiences with teachers and fellows through text messaging or voice/ live calls. Such infusion of mobile technology into different activities, Wagner (2005) rightly claimed 'mobile revolution' proclaiming that the "evidence of mobile penetration is irrefutable……[and] no demographic is immune from this phenomenon" (p.41).

Students use different portable technologies & devices that promote mobility of individuals and flexibility of time and place. Traxler (2007) used the term mobile devices for mobile technology and reported its use in education and training throughout the world. It is at a stage of advancement in terms of technical modalities, functional mechanism and instructional pedagogies of teaching learning process in classroom or at a distance. It has promoted opportunities of flexible teaching-learning process and reshaping it in new situations & circumstances and demands in terms of space & time, community and discourse (Katz & Akhus, 2002) and research ethics & attitude (Hewson, Yule, Laurent & Vogel, 2003).

The appropriate use of mobile technology in education seems to enhance the opportunities of individual as well as group and in cooperative or collaborative work. It is (Perry, 2003) personalized, and interactive use of handheld technologies in classroom situation. Different researchers and scholars viewed its strategic and purposive use & intervention in education and training according to their understanding of the feasibility and practices. For example, it is effective for collaborative learning/work (Pinkwart, Hope, Milrad & Perez, 2002), feasible for information dissemination and supporting for workers in field work (Chen, Kao & Sheu, 2003) and appropriate & effective for guidance & counseling (Vuorinen & Sampson, 2003) for individuals of different professions and trades.

Its use in education and training is likely to flourish as it brings mobility and connectivity between learners and teachers; promotes opportunities for effective communication and enhances efficiency of teachers in teaching learning process. Experts of different trades and professions appear to use it effectively for the training of their workers. It is effective for dissemination of new ideas, information & knowledge and corporate training (Pasanen, 2003). Educationists and human resource managers are convinced that in various services & sectors like doctors & other medical professionals (Smordal & Gregory, 2003; Kneebone, 2005), teachers and academicians (Seppala &Alamaki, 2003) are using essentially mobile technology Mobile technologies, particularly personal digital assistants are playing an effective role in music education (Polishook, 2005); in training of musicians and composition of new tones & tunes.

Teachers and students can benefit more from the technology using it in an appropriate profession to enhance their productivity & efficiency. Holmes & Schmidt (2002) worked on a mobility project between University of Texas at Austin (TU's) and Hewlett Packard (HP); integrating the use of wireless technology into teaching and learning environment. They concluded that wireless infrastructure is useful for both students and instructors to make the time spent in the classroom teaching new concepts more useful and productive.

RATIONALE

As discussed earlier, invention and intervention of mobile technology seems crucial for dissemination of new concepts, ideas, information & knowledge and experience sharing throughout the world. The methods and purpose of its utilization depends on the interests, needs and circumstances of users' community. Its formal use in education and training is limited in developing countries like Pakistan. However, faculties as well as scholars/learners are exploiting it in academic life for their higher studies to transfer data, provide real time support services, guidance and counseling. But the area seems nascent where users have less orientation about different mobile technologies, their appropriateness, academic use and effectiveness in the field.

Universities and higher education institutions are questing for providing latest learning technologies to support the learners. But there is no instructional policy regarding the use of such technologies. The present study examines the practices, possibilities and consequences of its use in education & training particularly at higher education level in Pakistan. It also suggests some measures for effective and efficient use of the technology at higher studies.

OBJECTIVES OF THE STUDY

The present study was undertaken with the main objectives to

a). evaluate the role of mobile technology in higher education in terms of its

i. appropriateness
ii. flexibility

iii. interactivity
iv. availability & usefulness

b). examine the current practices of using mobile technology in higher education
c). identify the problems of students with mobile technology
d). suggest appropriate use of mobile technology in higher education

METHODOLOGY

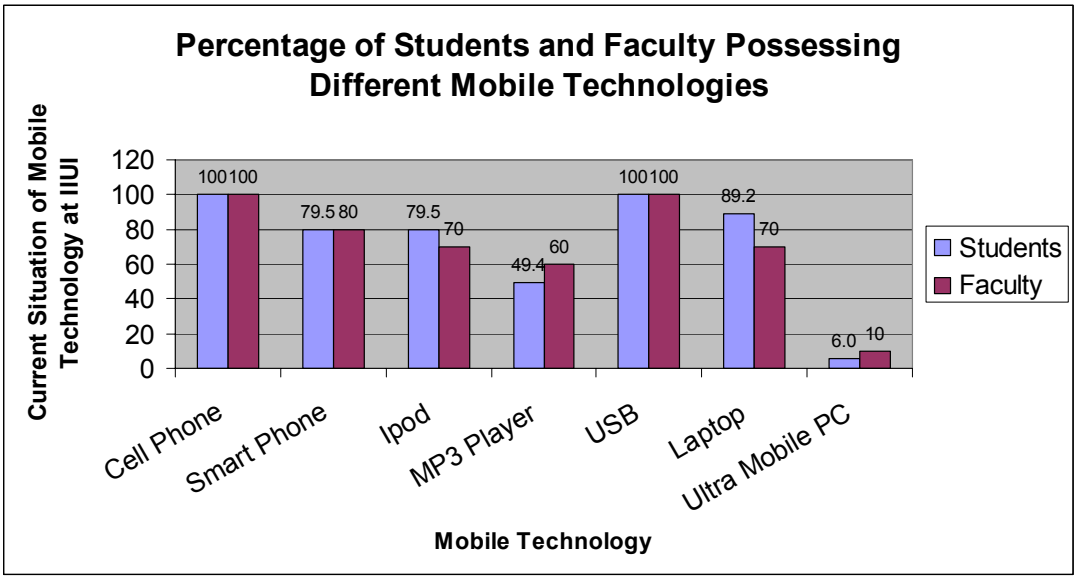
The population of the study was all the Ph. D scholars (N= 83) and faculty (N=10) of the Department of Education International Islamic University Islamabad. The samples of the study comprised of 100% of both the populations.

The study was descriptive in nature, therefore survey approach was considered appropriate. The researchers used questionnaires developed on five point rating (likert) scale and a semi-structured interview schedule as research tools to collect data from the respondents (students and faculty). The researchers personally administered the finalized (through pilot testing) research tools to the respondents to collect the data.

The data collected was analyzed through quantitative (mean score and percentage) as well as qualitative approaches. The data collected through questionnaires are presented below in tabular-cum graphical form and results drawn out are given below:

PRESENTATION OF DATA

Graph-A Use of Mobile Technology at International Islamic University Islamabad



Graph-A indicates the current situation of various mobile technologies that the students and faculty use at the campus. All the students and faculty use simple cell phones for communication and USB for data/ information transfer. However, they also use other mobile technologies as Smart Phone (students 79.5% and faculty 80%), iPod (students 79.5% and faculty 70%), MP3 Player (students 49.4% and faculty 60%), Laptop (students 89.2% and faculty 70%) and Ultra Mobile PC (students 06% and faculty 10%). It is evident from the data that all university students and teachers use cell phones and USB for transferring information in Pakistan. Ultra Mobile PC on the other hand is hardly used for educational purposes.

Table-1 Responses of students and faculty about appropriateness of mobile technology in teaching-learning process

Sr. No	Domain	Themes	Respon-dents	Responses SA	A	UNC	DA	SDA	Mean Score
1.	Appropriate-ness	Comfortable to use	Student	37 (44.6)	41 (49.4)	0	03 (3.6)	02 (2.4)	4.3
			Faculty	07 (70)	2 (20)	0	01 (10)	0	4.5
		Compatible with learning styles	Student	44 (53.0)	36 (43.4)	01 (1.2)	02 (2.4)	0	4.5
			Faculty	05 (50)	03 (30)	01 (10)	01 (10)	0	4.2
		Appropriate for using anywhere in the campus	Student	51 (61.4)	29 (34.9)	01 (1.2)	01 (1.2)	01 (1.2)	4.5
			Faculty	06 (60)	03 (30)	0	01 (10)	00	4.4
		Affordable to purchase the technology	Student	46 (55.4)	27 (32.2)	02 (2.4)	05 (6.0)	03 (3.6)	4.3
			Faculty	04 (40)	05 (50)	01 (10)	00	00	4.3
		Technology know how	Student	21 (25.3)	56 (67.5)	02 (2.4)	02 (2.4)	02 (2.4)	4.1
			Faculty	07 (70)	03 (30)	00	00	00	4.7
		Data transfer, sharing learning experiences, exchange of information	Student	49 (59.0)	28 (33.7)	03 (3.6)	01 (1.2)	02 (2.4)	4.5
			Faculty	08 (80)	01 (10)	0	01 (10)	0	4.6
Average percentage & mean score of all themes in the domain			**Student**	**41 (49.4)**	**36 (43.4)**	**2 (2.4)**	**2 (2.4)**	**2 (2.4)**	**4.3**
			Faculty	**06 (60)**	**03 (30)**	**00**	**01 (10)**	**00**	**4.4**

Note: Values given in the parentheses indicate percentage of their respective values without parentheses. Decimal values adjusted.

Table-1 reflects the appropriateness of mobile technology in terms of its utilization, know how and affordability. According to the table 93% & 90% of the respondents (students & faculty respectively) agreed that mobile technology is appropriate for them to use in teaching learning process. It is affordable to purchase, comfortable and appropriate to use anywhere in the campus. They (students and faculty) use it to transfer data, share learning experiences and exchange information and knowledge with students and faculty. The mean score 4.3 & 4.4 (students and faculty respectively) did support strongly the appropriateness of mobile technology for teaching learning process. However, 4.4% & 10% of the respondents (students and faculty respectively) disagreed with it.

Table-2 Responses of students and faculty about flexibility of mobile technology in teaching-learning process

Sr. No	Domain	Themes	Respon-dents	Responses SA	A	UNC	DA	SDA	Mean Score
2.	Flexibility	Access	Student	21 (25.3)	54 (65.1)	02 (2.4)	03 (3.6)	03 (3.6)	4.0
			Faculty	04 (40)	05 (50)	01 (10)	00	00	4.3
		Learner centered teaching learning environment	Student	33 (39.8)	42 (50.6)	01 (1.2)	03 (3.6)	04 (4.8)	4.2
			Faculty	06 (60)	03 (30)	0	01 (10)	0	4.4
		Individual pedagogical/ learning needs	Student	19 (22.9)	48 (57.8)	03(3.6)	03 (3.6)	10 (12)	3.8
			Faculty	03 (30)	05 (50)	01 (10)	01 (10)	0	4.0
		Group learning opportunities	Student	22 ((26.5)	44 (53.0)	02 (2.4)	06 (7.2)	9 (10.8)	3.8
			Faculty	03 (30)	05 (50)	0	02 (20)	0	3.9
		Students learn on their own pace	Student	37 (44.6)	42 (50.6)	01 (1.2)	01 (1.2)	02 (2.4)	4.3
			Faculty	03 (30)	06 (60)	0	0	01 (10)	4.0
		Heterogeneous learners-learner's age and sex	Student	26 (31.3)	47 (56.6)	01 (1.2)	02 (2.4)	07 (8.4)	4.0
			Faculty	05 (50)	04 (40)	0	01 (10)	0	4.3
Average percentage & mean score of all themes in the domain			**Student**	**26 (31.3)**	**46 (55.4)**	**2 (2.4)**	**3 (3.6)**	**6 (7.2)**	**4.0**
			Faculty	**04 (40)**	**05 (50)**	**00**	**01 (10)**	**00**	**4.1**

Note: Values given in the parentheses indicate percentage of their respective values without parentheses. Decimal values adjusted.

Table-2 indicates the flexibility of mobile technology in terms of learners' access to the knowledge through the technology. It is evident from the table that 86.7% and 90% of the respondents (students and faculty respectively) agreed that it promotes flexible learning environment where students learn on their own pace

and place. The mean score 4.0 & 4.1 (of students & faculty respectively) also supported the main domain. Only 10.8% & 10% of the respondents (students and faculty respectively) disagreed with it.

Table-3 Responses of students and faculty about interactivity of mobile technology in teaching-learning process

Sr. No	Domain	Themes	Respon-dents	Responses					Mean Score
				SA	A	UNC	DA	SDA	
3.	Interactivity	Synchronous interaction	Student	18 (21.7)	45 (54.2)	03 (3.6)	08 (9.6)	9 (10.6)	3.7
			Faculty	04 (40)	04 (40)	01 (10)	01 (10)	0	4.1
		Asynchronous interaction	Student	24 (28.9)	47 (56.6)	02 (2.4)	06 (7.2)	04 (4.8)	4.0
			Faculty	04 (40)	05 (50)	01 (10)	0	0	4.3
		Immediate feedback on students performance	Student	27 (32.5)	35 (42.2)	03 (3.6)	06 (7.2)	12 (14.5)	3.7
			Faculty	02 (20)	04 (40)	01 (10)	02 (20)	01 (10)	3.4
		Equal opportunities of learning	Student	39 (47)	36 (43.4)	02 (2.4)	04 (4.8)	02 (2.4)	4.3
			Faculty	04 (40)	05 (50)	01 (10)	0	0	4.3
		Remote connectivity	Student	22 (26.5)	51 (61.4)	02 (2.4)	06 (7.2)	02 (2.4)	4.0
			Faculty	05 (50)	03 (30)	0	01 (10)	01 (10)	4.0
		Collaborative learning environment	Student	23 (27.7)	38 (45.8)	02 (2.4)	11 (13.3)	09(10.6)	3.7
			Faculty	03 (30)	04 (40)	01 (10)	02 (20)	0	3.8
		Learning community	Student	16 (19.3)	51 (61.4)	03 (3.6)	04 (4.8)	09(10.6)	3.7
			Faculty	02 (20)	07 (70)	01 (10)	0	0	4.1
		Group dynamic	Student	31 (37.3)	44 (53)	02 (2.4)	05 (6.0)	01 (1.2)	4.2
			Faculty	04 (40)	03 (30)	0	02 (20)	01 (10)	3.7
Average percentage & mean score of all themes in the domain			**Student**	**26 (31.3)**	**43 (52.0)**	**02 (2.4)**	**06 (7.2)**	**06 (7.2)**	**3.9**
			Faculty	**03 (30)**	**05 (50)**	**01 (10)**	**01 (10)**	**00**	**4.0**

Note: Values given in the parentheses indicate percentage of their respective values without parentheses. Decimal values adjusted.

Table-3 depicts that 69.3% and 80% of the respondents (students and faculty respectively) agreed with the statement that mobile technology enhances and creates opportunities of interactivity through remote connectivity either through real time communication through mobile/ wireless phones or delayed communication by text messaging & e-mail. Mean scores 3.9 & 4.0 (students and faculty respectively) proved it. But 14.4% & 10% of the respondents (students and faculty respectively) did not agree with it.

Table-4 Responses of students and faculty about availability & its usefulness of mobile technology in teaching learning process

Sr. No	Domain	Themes	Respon-dents	Responses					Mean Score
				SA	A	UNC	DA	SDA	
4.	Availability & usefulness	Personalized learning environment	Student	27 (32.5)	44 (53.0)	02 (2.4)	07 (8.4)	03 (3.6)	4.0
			Faculty	02 (20)	07 (70)	00	01 (10)	00	4.0
		Compatible with learners needs	Student	24 (28.9)	41 (49.4)	02 (2.4)	06 (7.2)	10(12.0)	3.8
			Faculty	04 (40)	05 (50)	01 (10)	00	00	4.3
		Interest and motivation	Student	32 (38.6)	47 (56.6)	01 (1.2)	02 (2.4)	01 (1.2)	4.3
			Faculty	04 (40)	05 (50)	01 (10)	00	00	4.3
		Reasonable prices	Student	36 (43.4)	29 (34.9)	02 (2.4)	05 (6.0)	11(13.3)	3.9
			Faculty	02 (20)	06 (60)	00	01 (10)	01 (10)	3.7
		Easily Available	Student	26 (31.3)	48 (57.8)	02 (2.4)	04 (4.8)	03 (3.6)	4.1
			Faculty	04 (40)	05 (50)	01 (10)	00	00	4.3
Average percentage & mean score of all themes in the domain			**Student**	**29 (34.9)**	**42 (50.6)**	**01 (1.2)**	**05 (6.0)**	**06 (7.2)**	**4.0**
			Faculty	**03 (30)**	**06 (60)**	**0.5 (5)**	**0.5 (5)**	**00**	**4.1**

Note: Values given in the parentheses indicate percentage of their respective values without parentheses

Table-4 expresses that 85.5% & 90% of the respondents (students and faculty respectively) agreed with the statement that mobile technology is easily available at reasonable prices in the market. The mean score 4.0 & 4.1 (students and faculty respectively) supported it. However, 13.2% & 5% of the respondents (students and faculty respectively) did not agree with it.

Table-5 Responses of students and faculty about current practices of students in using mobile technology

Sr. No	Domain	Themes	Respon-dents	Responses SA	A	UNC	DA	SDA	Mean Score
5.	Current practices	Data transfer	Student	31 (37.3)	49 (59)	00	03 (3.6)	00	4.3
			Faculty	04 (40)	06 (60)	00	00	00	4.4
		Connectivity with learners and faculty	Student	27 (32.5)	51 (61.4)	01 (1.2)	03 (3.6)	01 (1.2)	4.2
			Faculty	05 (50)	04 (40)	00	01 (10)	00	4.3
		Downloading (text, photos & videos)	Student	20 (24.1)	48 (57.8)	02 (2.4)	06 (7.2)	07 (8.4)	3.8
			Faculty	03 (30)	06 (60)	00	01	00	4.1
		Appropriate utilization & management of time	Student	32 (38.6)	46 (55.4)	01 (1.2)	02 (2.4)	02 (2.4)	4.3
			Faculty	02 (20)	05 (50)	01 (10)	02 (20)	00	3.7
		Recording the lectures	Student	14 (16.9)	42 (50.6)	03 (3.6)	17(20.5)	07 (8.4)	3.5
			Faculty	02 (20)	06 (60)	00	01 (10)	01 (10)	3.7
		Guidance and counseling	Student	42 (50.6)	35 (42.2)	01 (1.2)	05 (6.0)	00	4.4
			Faculty	05 (50)	04 (40)	00	01 (10)	00	4.3
		Sharing learning difficulties	Student	36 (43.4)	42 (50.6)	01 (1.2)	03 (3.6)	01 (1.2)	4.3
			Faculty	02 (20)	06 (60)	00	02 (20)	00	3.8
		Short messages (SMs)	Student	29 (34.9)	46 (55.4)	01 (1.2)	05 (6.0)	02 (2.4)	4.1
			Faculty	04 (40)	05 (50)	00	01 (10)	00	4.2
		Excursion	Student	38 (45.8)	41 (49.4)	02 (2.4)	02 (2.4)	00	4.4
			Faculty	03 (30)	05 (50)	00	01 (10)	01 (10)	3.8
Average percentage & mean score of all themes in the domain			**Student**	**30 (36.14)**	**44 (53)**	**01 (1.2)**	**04 (4.8)**	**04 (4.1)**	**4.1**
			Faculty	**03 (30)**	**06 (60)**	**00**	**01 (10)**	**00**	**4.0**

Note: Values given in the parentheses indicate percentage of their respective values without parentheses. Decimal values adjusted.

Current practices and use of the mobile technology in teaching learning process is obvious from the table-5. According to the table, 89.14% & 90% of the respondents (students and faculty respectively) are currently using the mobile technology in different ways and styles for improving teaching learning process. Mean score 4.1 & 4.0 (students and faculty respectively) supports its current use. But 8.9% & 10% of the respondents (students and faculty respectively) do not agree with its use in teaching learning process. They misuse it in different ways wasting their time. Some listen to music and others chat and bully their fellows.

Table-6 Responses of students and faculty about Problems of students with mobile technology

Sr. No	Domain	Themes	Respon-dents	Responses SA	A	UNC	DA	SDA	Mean Score
6.	Problems	Non affordability/Expensive	Student	19 (22.9)	46 (55.4)	03 (3.6)	04 (4.8)	11(13.3)	3.7
			Faculty	03 (30)	04 (40)	01 (10)	02 (20)	00	3.8
		Non-Availability	Student	16 (19.3)	22 (26.5)	02 (2.4)	33(39.8)	10 (12)	3.0
			Faculty	02 (20)	01 (10)	00	05 (50)	02 (20)	2.6
		Inferiority complex	Student	29 (34.9)	46 (55.4)	02 (2.4)	04 (4.8)	02 (2.4)	4.2
			Faculty	04 (40)	03 (30)	00	02 (20)	01 (10)	3.7
		Lack of Social interaction	Student	17 (20.5)	45 (54.2)	02 (2.4)	12(14.5)	07 (8.4)	3.6
			Faculty	02 (20)	07 (70)	00	01 (10)	00	4.0
		Tech-savvy	Student	33 (39.8)	41 (49.4)	02 (2.4)	03 (3.6)	04 (4.8)	4.2
			Faculty	03 (30)	06 (60)	00	01 (10)	00	4.1
		Misuse of technology	Student	18 (21.7)	47 (56.6)	01 (1.2)	09(10.8)	08 (9.6)	3.7
			Faculty	03 (30)	04 (40)	00	02 (20)	01 (10)	3.6
Average percentage & mean score of all themes in the domain			**Student**	**22 (26.5)**	**42 (50.6)**	**02 (2.4)**	**10 (12)**	**07 (8.4)**	**3.7**
			Faculty	**03 (30)**	**04 (40)**	**00**	**02 (20)**	**01 (10)**	**3.6**

Note: Values given in the parentheses indicate percentage of their respective values without parentheses. Decimal values adjusted.

Table-6 indicates that 77.1% & 80% of the respondents (students and faculty respectively) faced different problems with mobile technology. The mean score 3.7 & 3.6 (students and faculty respectively) also proved it. Only 20.4% & 30% of the respondents (students and faculty respectively) were not of the same view.

RESULTS OF THE STUDY

Following results were drawn out from Interview and the data analysis:

1. All the students and faculty (100%) use simple cell phones for communication and USB for data/ information transfer. However, they also use other mobile technologies as Smart Phone (students 79.5% and faculty 80%), iPod (students 79.5% and faculty 70%), MP3 Player (students 49.4% and faculty 60%), Laptop (students 89.2% and faculty 70%) and Ultra Mobile PC (students 06% and faculty 10%). They (students and faculty) use demand based mobile technology (graph-A).

2. Majority of the respondents (93% & 90% students & faculty respectively) agreed that mobile technology is appropriate for them to use it in teaching learning process. It is comfortable to use (94% & 90% students & faculty respectively), compatible with learning styles of the students (96.4% & 80% students & faculty respectively), appropriate for using anywhere in the campus (96.3% & 90% students & faculty respectively), affordable to purchase (87.6% & 90% students & faculty respectively), they have technical know-how (92.8% & 100% students & faculty respectively) and they (92.7% & 90% students & faculty respectively use it transfer data, share learning experiences and exchange information and knowledge with students and faculty in an appropriate way (table-1).

3. A prominent majority of the respondents (86.7% & 90% students & faculty respectively) were of the view that mobile technology promotes flexibility. It promotes flexibility in terms of access (90.4% & 90% students & faculty respectively) to the material, information and knowledge, promotes learner centered teaching learning environment (90.4% & 90% students & faculty respectively) in the campus, caters (80.7% & 80% students & faculty respectively) to individual pedagogical and learning needs of faculty and learners respectively, creates (79.5% & 80% students & faculty respectively) group learning opportunities where students learn (95.2% & 90% students & faculty respectively) at their own pace & place. It is feasible (87.9% & 90% students & faculty respectively) for heterogeneous learners and accommodates learners of all age group of either sexes (table-2).

4. Interactivity is the basic component of an effective teaching learning process. Majority of the respondents (83.3% & 80% students & faculty respectively) agreed that the use of mobile technology promotes (75.9% & 80% students & faculty respectively) synchronous as well as asynchronous (85.5% & 90% students & faculty respectively) interaction of students with their fellow students and teachers through live calls through mobile phones or wireless communication and/or by text messaging/ an e-mail over the net. It provides (90.4% & 90% students & faculty respectively) equal opportunities of learning to all the students and also provides (74.7% & 60% students & faculty respectively) immediate feedback on student's performance. It plays an important role in (86.9% & 80% students & faculty respectively) connecting students from far-away/remote places. It creates (80.7% & 90% students & faculty respectively) learning community of the students living in different cities/ place or countries to work and learn in (73.5% & 70% students & faculty respectively) collaborative learning environments benefiting from (90.3% & 70% students & faculty respectively) group dynamics (table-3).

5. Availability of technology and its usefulness in teaching learning process increases its demand in students and faculty. Majority of the respondents (85.5% & 90% students & faculty respectively) agreed that it is available and useful. It is (89.1% & 90% students & faculty respectively) easily available in the market at (78.3% & 90% students & faculty respectively) reasonable prices that the respondents can afford to pay for it. Mobile technology is (78.3% & 90% students & faculty respectively) compatible with needs of the learners, creates and sustains (95.2% & 90% students & faculty respectively) interest & motivation in learners thus promoting (85.5% & 90% students & faculty respectively) personalized learning environment for individual learning at learner's own pace (table-4)..

6. A prominent majority of the respondents (89.1% & 90% students & faculty respectively) agreed that they are using the mobile technology in teaching learning at the campus. Currently they are

using the technology for (96.3% & 90% students & faculty respectively) data transfer, (81.9% & 90% students & faculty respectively) for downloading (text, photos & videos) and (67.5% & 90% students & faculty respectively) for recording the lectures in classrooms. They use it for (93.9% & 90% students & faculty respectively) connectivity with students and faculty when they are in traveling or at their homes to know about the classroom/ campus activities. Students often use mobile technology for (94% & 80% students & faculty respectively) sharing learning difficulties and (92.8% & 90% students & faculty respectively) seeking guidance and counseling from their teachers or class fellows. They also send and receive (90.3% & 90% students & faculty respectively) short messages (SMS) and chat with each other for (95.2% & 80% students & faculty respectively) excursion and recreation (table-5.

7. Majority of the respondents (77.1% & 80% students & faculty respectively) reported that they faced problems while using mobile technology. They (88.3% & 70% students & faculty respectively) reported that the technology is expensive and they cannot purchase its advanced forms/latest models. They also described that the latest models of different mobile technologies are not (51.8% &70 % students & faculty respectively) easily available in the market. Mobile technology has become a status symbol in the society and it has resulted (90.3% &70 % students & faculty respectively) inferiority complex among those who cannot afford the advanced technologies. It has minimized (54.7% &70 % students & faculty respectively) social interaction among people and promoted technology phobia breaking the social cohesion and integrity. Respondents (78.3% & 70% students and faculty respectively) were also of the opinion that individuals misuse it (table-6).

FINDINGS OF THE STUDY

The main findings of the study are;

1. Mostly, the students and faculty use simple and economical cell phones for communication and USB for data/ information transfer. However, they also use other mobile technologies as Smart Phone iPod), MP3 Player, Laptop and Ultra Mobile PC. They use demand based mobile technology.

2. Mobile technology is appropriate to be used anywhere to enhance campus-wide learning environment. It is compatible with needs of the learners and they feel comfort working with it. It is easy to use and appropriate for research scholars to transfer data, share learning experiences and exchange of information and knowledge with students and faculty.

3. Mobile technology promotes flexible learning environment. It enhances learners' (particularly research scholars) access to the learning material from anywhere in the campus. It creates learner centered teaching-learning environment where they study at their own pace. Mobile technology helps them work on groups projects.

4. Interactivity is the basic component of an effective teaching learning process. The use of mobile technology promotes synchronous as well as asynchronous interaction among students and faculty through live calls on mobile phones or wireless communication networks and/or by text messaging/ an e-mail over the internet. It provides equal opportunities of learning to all the students and also provides immediate feedback on student's performance. It plays an important role in connecting students from far-away/remote places. It creates learning communities of the students living in different cities/ place or countries to work and learn in collaborative learning environments on cooperative projects, benefiting from group dynamics.

5. Availability of technology and its usefulness in teaching learning process increases its exposure to students and faculty. Simple technologies are easily available in the market at reasonable prices that the respondents can afford to pay. Mobile technology is compatible with needs of the learners, creates and sustains interest & motivation in learners thus promoting personalized learning environment for individual learning at learner's own pace.

6. Currently students and faculty are using mobile technology for data transfer, downloading (text, photos & videos) and recording the lectures in classrooms. They use it to stay connected with students and faculty when they are in traveling or at their homes to know about the classroom/ campus activities. Students often use mobile technology for sharing learning difficulties and seeking guidance and counseling from their teachers or class fellows. They also send and receive short messages (SMS) and chat with each other for excursion and recreation.

7. Students & faculty reported some problems while working with technology. Advanced/ latest models of the technology are expensive and rarely available in the market because of which students cannot afford/ purchase these models. Mobile technology has become a status symbol in the society and it has caused inferiority complex among those who cannot afford the advanced technologies. It has minimized social interaction among individuals and promoted technology phobia, breaking the social cohesion and integrity. It is misused by some students and they use it for bullying & harassment (through e-mails, SMS and live calls). They waste their time of study listening to music.

RECOMMENDATIONS

Keeping in view the results and findings of the study, following suggestion are made:

1. University/ higher education institution's administration and academician may arrange an orientation workshop/seminar for scholars/researchers about its appropriate and effective use in research and teaching learning process.

2. University/higher education institution may develop collaboration with different technology manufacturing companies for providing students different technologies on economical rates. Universities may also suggest invention of new technologies or some changes/alterations in different technologies to enhance their potential in research and teaching learning process.

3. Academicians may encourage the use of mobile technology throughout the campus by interacting with students, responding and accommodating their queries through e-mail, SMS or mobile phone calls.

4. Universities may formulate a clear policy about the use of mobile. Universities may envisage the rules and regulations regarding misuse (bullying & harassment through e-mails, SMS and live calls) of the technology.

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