

**USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)
AMONG PUBLIC AND PRIVATE SECTOR UNIVERSITIES IN TEACHING
AND LEARNING PROCESS****Hafsa Ahmed**

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ABSTRACT

The present study was designed to explore the use of Information and Communication Technology (ICT) among public and private sector universities in teaching and learning process. This study was descriptive in nature, problem explored was to investigate use of ICT in teaching and learning process, it future aimed to investigate the role of faculty members in the effective application of ICT in classroom situation. The objectives of the research included to study the usage of information and communication technology (ICT) among faculty in public and private universities and to measure the awareness of private and public sector faculty about use of ICT in teaching learning process and to explore the role of demographic variation in determining faculty use of ICT in teaching learning process. The population of this study was faculty members of public and private sector universities in Rawalpindi/Islamabad. A stratified random sample comprised of 52 male and 48 female university faculty members were collected from three public and three private universities of Rawalpindi and Islamabad. The research tool ICT questionnaire was used to collect data. ICT questionnaire consists of 30 items which were filled out by public and private universities faculty members. After the data collection, data was analyzed with the help of

SPSS 18 by using various statistical techniques like Mean, Standard Deviation, Correlation and ANOVA. Research findings reveal that there is significant difference in the awareness of public and private sector faculty about the use of Information and Communication Technology. Results portrays gender differences in prospective faculty perceptions where male university faculty members experience more use of ICT than female university faculty, younger university faculty members were higher user of ICT than older one, Professors use of ICT more frequently than Assistant professors and Lectures, the use of ICT is higher among M Phil qualified university faculty as compared to other qualification levels. Study elaborates that experienced university faculty are higher user of ICT than less experienced university faculty. Study found out that advance computer user among university faculty members experience higher use of ICT than basic and intermediate user. The study was beneficial to comprehend the use of ICT in teaching and learning environment. It was also useful because it present guidance for increase the use of technology integration in education. It was also helpful to investigate the ICT usage, may give guidance to educator, teachers, education planner and curriculum developer to integrate ICT in formal curriculum for advancement of knowledge and utilization of modern tools and

services. It also provided recommendation on increasing the ICT usage in universities.

KEYWORDS: Information and Communication Technology, Teaching and learning process, Public and Private Sector Universities.

1. INTRODUCTION

Education is a driving strength of social and economic development of the nation. Education is a key pillar of society. During the last two decades, the paradigm shift from customary based education towards the modern, innovative, technical, creative and dynamic teaching and learning process gives more significance and importance towards the use of ICT. With recent development of science and technology in current era, accessibility and quality of education is concentrated around the innovation learner's competences and abilities to handle huge volume of information.

In 21st century, Information and Communication Technology (ICT) is measured as keystone of education platform. Information and Communication technology (ICT) is an electronic highway that presents a digital ocean in all the aspects of teaching and learning process and it helps to improve the productivity of educational setup. ICT is the abbreviation of Information and Communication Technology. ICT in generic term refers to computers and computing oriented tasks.

ICT is both need and opportunity in educational hub. Information and Communication Technology (ICT) have been playing a significant role toward every level of learning process and in every teaching and learning situation. Information and communication technology is the practice of remodeling the strategies and approaches of teaching and learning. (Aduke, 2008; Ekundayo, 2009). University is an educational core and excellence of education in universities has been outfitted with use of ICT by innovative teacher and educators in teaching and learning process.

The expansion of Information and Communication technology (ICT) has abruptly remodel the teaching and learning process in higher education sector . Information and

Communication technology (ICT) is an umbrella term for teaching and learning purposes that incorporates communication tools and technological services encircling: LEDs , smart phones, hardware , software, computer network and satellite etc which can use to improve and sustain learning in modern way. Consequently , ICT is measured to be the application of modern digital tools in all aspects of education.

Information and Communication technology (ICT) serves as an electronic highway for automated devices which facilitates the progression of scientific based learning and share information (Ofodu, 2007). Information and Communication technology (ICT) is considered as exploitation of e-learning to improve and expand teaching and learning process (Yusuf, 2005). ICT is a teaching and learning tool which assist learner both on and off university by means of teaching offered by online system (Pulkkinen, 2007; Wood, 1995).

Information and computer technology (ICT) plays an imperative role in supplementing teachers towards practical application of teaching and learning in the classrooms environment. With the massive use of ICT in recent time, use of computer has emerged at all levels of education setup. Teachers are the fundamental vehicle of change in education so improvement of teachers is determined by the quality and flexibility of using the ICT techniques. Information and Communication technology (ICT) enhance the flexibility on delivery of education so that learner can access the information. Information and Communication technology (ICT) acts as socializing agent that provides interactive teaching learning environment to educators. The higher education around the world have progressively approves ICT as modern apparatus for education, teaching, curriculum , employees improvement, and learners knowledge (Kumpulainen, 2007; Usluel, Askar, & Bas, 2008).

The development of science and technology has opened an electronic gateway for tremendous growth in the field of education.

Computers, internet, multimedia and education technology have great effect on teaching and learning process. Computer in education means putting information in one computer where other can see through internet .Due to growing application of ICT that there is change from traditional technology of chalk and talk method of teaching and learning process to individualized through use of modern education learning

According to Daniels (2002) Information and Communication technology (ICTs) have become a bridge tool between learner and content in modern society with in short time around the world . Now a day, countries accepting the use of ICT in higher institutes and mastering the fundamental proficiencies and expertise of Information and Communication technology (ICT) as integral part of education process , along with basic literacy of numeracy and manipulation. While, ICT has to be acknowledged and used productively by its researchers in research field on scrutinizing problem and correlated to the attitude toward ICT has develop into one of the most innovative asset (Venkatesh, Morris, Davis, & Davis, 2003).

ICTs have potentialities to innovate, accelerate, improve, intensify competences in order to engage learners and help to relate learning practices to vocation experiences, generates financial capability for tomorrow's personnel, as well as strengthening education and serving teaching advancement (Davis and Tearle,1999). ICT have practical application in the higher educational institutions of Pakistan. It is desired that higher education institutes should be significantly computerized and all educators should be able to use the technology, tools, services and expertise enhance their teaching methodology.

II. STATEMENT OF THE PROBLEM

Present study was designed to explore the use of Information and Communication technology (ICT) by public and private universities in teaching and learning process. It further aimed to investigate the role of faculty member's demographic variation, such as, qualification, experience, gender and sector in

the effective application of specific Information and Communication technology (ICT) in classroom situation.

III. OBJECTIVES

1. To study the usage of information and communication technology (ICT) among faculty in public and private universities.
2. To measure the awareness of private and public sector university faculty about use of information and communication technology in teaching learning process.
3. To explore the role of demographic variation in determining faculty use of ICT in teaching learning process.

IV. HYPOTHESES

The following hypotheses were formulated:

1. There is significant difference in the awareness of public and private sector university faculty about the use of Information and Communication Technology.
2. Male faculty members use ICT more in teaching learning process than female faculty members.
3. Younger university faculty members use ICT more than older ones in teaching learning process.
4. Professors' use of ICT more frequently than Assistant Professors and Lectures.
5. M Phil qualified university faculty use ICT more in teaching learning process than Master and PhD qualified faculty.
6. University faculty with more work experience use ICT more frequently in teaching learning process than faculty with less experience.
7. Faculty with higher knowledge of computer hardware and software use more ICT in teaching learning process than faculty with less knowledge of computer hardware and software.

V. POPULATION

The ideal population for the research would be male and female faculty members of public and private universities of Rawalpindi and Islamabad. Due to scarcity of time and

resources, only six universities were selected from Islamabad and Rawalpindi for research purpose and generalized for whole population.

VI. SAMPLE

A stratified random sample of 100 males and females university faculty members was collected from six universities (three from public university, three from private university) in Islamabad and Rawalpindi. Universities from which sample was taken, namely, International Islamic University of Islamabad, Fatima Jinnah University of Rawalpindi, National University Of Modern Languages, Foundation University , Arid Agriculture University of Rawalpindi and Ripah International University. Age of Respondent from 20 years to more than 40 years, Qualification ranges from Master to Doctorate, their work experience ranges from 1 year to onwards, nature of institution was public and private and computer user was basic, intermediate and advance.

VII. SAMPLING TECHNIQUE

A stratified random sampling technique was used to collect data from selected six universities in the Rawalpindi and Islamabad. A sample of 100 university faculty from six universities (three public and three private) was collected for a representative sample. Data was collected from social sciences and management science departments.

VIII. RESEARCH INSTRUMENT

The research instrument used for collection of data was questionnaire. For the measurement, ICT questionnaire developed by S. D. Eyono Obono (2009) was used in the research study. ICT questionnaire comprised of 30 items pertaining to five subscales which are helpful in measuring the use of ICT among public and private sector universities in the teaching and learning process.

Name of the subscales of ICT are ICT adoption, ICT Awareness, ICT perceived Usefulness, ICT ease of use and Teacher attitude toward ICT. The respondents give their opinions/responses and give their agreement and disagreement on 5 Likert scale with response category (strongly disagree 1, disagree 2, neutral 3, agree 4, and strongly agree 5).

IX. DATA COLLECTION

For the present study data was collected through personal visits of public and private sector university faculty was approached formally in their job setting , after their willingness, they were requested to fill out the questionnaire honestly and according to their agreement and disagreement. They were given as much time as they needed to fill out the questionnaire. The assurance of confidentiality and secrecy was provided to them that information collected by them would be kept off the record and only be used for research.

X. DATA RESULTS

The study was designed to explore the use of ICT among public and private sector universities in teaching and learning process. The research was carried on the sample of 100 males and females university faculty of public and private universities in Rawalpindi and Islamabad. In order to test the Hypotheses, data was analysis by using various statistical techniques to arrive the conclusions such Means, Standard Deviation, Correlation, and ANOVA with help of SPSS 18.

Reliability of ICT questionnaire was calculated through method of split half reliability by dividing test into two parts (15 items in Part 1 and 15 items in Part 2).The reliability of part 1 was 0.732 and the reliability of part 2 was 0.713 where as between forms correlation was 0.781. It reveals that instrument has internally consistency to measure the ICT usage among university faculty.

Table 1

Inter Scales Correlations of ICT with its Subscales and Total scale (N=100)

Subscales	1	2	3	4	5
Teacher attitude toward ICT	1				
ICT Awareness	0.386**	1			
ICT Adoption	0.397**	0.557**	1		
ICT Perceived Usefulness	0.588**	0.454**	0.385**	1	

ICT P Ease of Use	0.557**	0.451**	0.251*	0.547**	1
Total	0.789**	0.737**		0.667**	0.800** 0.765**

Table no 1 show inter-scales correlation of university faculty member's scores on ICT questionnaire with total and its subscales. From the results in table, it appears that there was strong positive correlation between subscales of ICT and significant correlation with total scales. The highest correlation exists between ICT Perceived Usefulness and Teacher Attitude

toward ICT is 0.588 and lowest correlation exists between ICT ease of use and ICT adoption. It also describes that all the subscales are significantly correlate with total scale of ICT .The value of correlation ranges from 0.667** to 0.800**.The highest correlation among all is in between ICT and ICT Perceived Usefulness which is 0.800**.

Table 2
Comparison of Mean and Standard Deviation of University faculty scores on ICT for variable "Gender" (N=100)

Subscales Of ICT	Gender			
	Female (n= 48)		Male (n=52)	
	M	SD	M	SD
ICT Awareness	23.00	2.79	23.87	2.94
ICT Adoption	23.17	2.69	23.10	3.31
ICTPU	23.51	3.31	24.15	3.40
ICTPEOU	22.71	3.30	24.73	3.56
TAICT	22.80	3.08	24.31	3.44
Total	115.19	15.17	120.16	16.65

Table no 2 portrays gender wise comparison of university faculty scores on ICT. It explains that male university faculty members are more frequently ICT usage in teaching leaning process as compared to female

university faculty. The result further illustrates that male university faculty have higher score on the factor ICT perceived Ease of Use and Teacher Attitude towards ICT. (Male M=120.16 Female M=115.19).

Table 3
One way Analysis of variance of Faculty scores on ICT for the variable Gender

ANOVA of ICT	DF	Mean Squares	F	Sig
Between Groups	1	598.663	4.187	0.04
Within Groups	98	142.96		
Total	99			

P<0.05**

Table 3 indicates that there is significant difference between the responses of university

faculty members belonging to both genders on ICT. The value of F ratio is 4.187 and level of significance is 0.04 which is less than 0.05.

Table 4
Comparison of Mean and Standard Deviation of University faculty scores on ICT for variable “Age” (N=100)

Subscales Of ICT	Age								
	20-30 yrs (n= 53)		31-40 yrs (n=39)		>40 yrs (n=8)				
	M	SD	M	SD	M	SD	M	SD	
ICT Awareness	23.51	2.90	23.61	2.86			21.87	2.74	
ICT Adoption	23.30	3.20	23.23	2.63			21.62	3.15	
ICTPU		23.91	3.03		22.02	2.00		21.25	2.49
ICTPEOU		24.06	3.37		23.69	3.57		21.12	2.16
TAICT		23.58	3.54		23.77	3.17		23.38	2.61
Total		118.36	16.04		116.32	14.23		109.24	13.15

Table no 4 shows gender wise comparison of university faculty scores on ICT. It further elaborates that the use of ICT is higher among young university faculty members as compared to other age groups. The result further

reveals that university faculty belongs to age group 20-30 years have higher score on the ICTP Ease of Use and ICT perceived Usefulness. The mean scores university faculty at age 20-30 is 118.36 while 31-40 is 116.32 and age more than 40 is 109.24.

Table 5
One way Analysis of variance of Faculty scores on ICT for the variable Age

ANOVA of ICT	DF	Mean Squares	F	Sig
Between Groups	2	304.602	6.118	.003
Within Groups	97	75.679		
Total	99			

Table 5 indicates that there is significant difference between the responses of university

faculty members belonging to various age groups on ICT. The value of F ratio is 6.118 and level of significance is 0.003 which is less than 0.05.

Table 6
Comparison of Mean and Standard Deviation of University faculty scores on ICT for variable “Designation” (N=100)

Subscales Of ICT	Designation								
	Lecturers (n= 42)		Assistant Professor (n=22)		Professor (n= 36)				
	M	SD	M	SD	M	SD	M	SD	
ICT Awareness	24.04	3.80	22.90	2.65			23.22	3.52	
ICT Adoption		23.40	2.92		22.41	3.33		24.44	4.01
ICTPU		23.48	3.72		24.36	3.99		23.22	3.52
ICTPEOU		23.65	3.41		23.77	3.02		24.22	3.41
TAICT		23.50	3.72		23.73	3.91		24.09	3.89
Total		118.07	17.57		117.17	16.9		119.19	18.35

Table no 6 indicates designation wise comparison of university faculty on ICT. The

table shows that Professors experiences higher use of ICT as compared with Assistant

professors and Lectures. Yet, there was slight difference between the values at each level of designations. The results further reveal that Professors have higher scores on the ICT Adoption and ICT P Ease of Use while lecturers

have more ICT Awareness and ICT Perceived Usefulness. The means scores for lectures are 118.07, Assistant Professors are 117.17 and Professor is 119.19.

Table 7
Comparison of Mean and Standard Deviation of University faculty scores on ICT for variable “Qualification” (N=100)

Subscales Of ICT	Qualification					
	Masters (n=29)		M Phil/MS (n=58)		PHD (n= 13)	
	M	SD	M	SD	M	SD
ICT Awareness	23.24	2.24	23.74	3.07	22.38	3.17
ICT Adoption	22.76	3.39	23.36	2.72	23.00	3.31
ICTPU	23.45	2.40	24.13	3.76	23.23	3.29
ICTPEOU	24.03	3.08	23.89	3.79	21.92	2.17
TAICT	22.96	3.39	23.96	3.39	23.07	2.75
Total	116.44	14.5	119.08	17.36	113.6	14.69

Table no 7 shows comparison of university faculty scores of ICT on the variable qualification .The results that are obtained from computation indicates that the university faculty members having MS/M Phil are more frequent user of ICT as compared to faculty with other

qualification levels. It further portrays that M Phil/MS qualified university faculty members have higher scores on the ICT Perceived Usefulness and Teacher attitude towards ICT. The mean scores for university faculty having Masters is 116.44 while for M Phil/MS are 119.08 and PhD is 113.6.

Table 8
Comparison of Mean and Standard Deviation of University faculty scores on ICT for variable “Experience” (N=100)

Subscales Of ICT	Experience					
	1-10 yrs (n=50)		11-20 yrs (n=26)		>20 yr (n=24)	
	M	SD	M	SD	M	SD
ICT Awareness	23.84	2.81	22.80	2.96	24.22	3.50
ICT Adoption	23.43	3.10	22.53	2.98	24.67	3.89
ICTPU	23.82	3.28	23.69	3.78	23.78	2.86
ICTPEOU	24.17	3.67	22.76	3.21	24.00	3.60
TAICT	23.58	3.68	23.53	2.58	23.44	2.92
Total	118.84	16.54	115.31	15.51	120.11	16.77

Table no 8 shows experience wise comprasion of university faculty on ICT. The result shows that the university faculty members with more experience has higher use of ICT in teaching learning process as compared with the less experience. It further reveals that faculty

members having experience more than 20 years have higher scores on the ICT Adoption and ICT Awareness. The mean scores of faculty members having experience of 1-10 years is 116.84, while the mean scores for 11-20 years is 115.31 and more than 20 years is 120.11.

Table 9
Comparison of Mean and Standard Deviation of University faculty scores on ICT for variable “Nature of Institution” (N=100)

Subscales Of ICT	Nature of Institution			
	Public (n= 50)		Private (n=50)	
	M	SD	M	SD
ICT Awareness	24.64	2.58	22.20	2.65
ICT Adoption	24.38	2.53	21.90	1.91
ICTPU	24.90	3.00	22.74	2.98
ICTPEOU	24.74	3.27	22.62	2.80
TAICT	24.78	2.85	22.34	2.76
Total	123.44	14.23	111.80	13.1

Table no 9 shows the results of comparison among public and private sector universities with the subscales of ICT. The results indicate the public sector university faculty have higher use of ICT as compared to

the private sector universities (Public M= 123.44, Private M= 111.80). The result further reveals that faculty of public sector universities have higher scores on the ICT perceived usefulness, Teacher attitude toward ICT and ICT Ease of Use.

Table 10
Comparison of Public and Private sector universities on ICT by T -test

T-test	DF	Sig
29.850	99	.000

Table 10 indicates that there is significant difference in use of ICT by faculty members among public and private sector

universities in teaching and learning process. The value of T-Test is 29.850 and level of significance is 0.000 which is less than 0.05.

Table 11
Comparison of Mean and Standard Deviation of university faculty scores on ICT for variable “Computer user” (N=100)

Subscales Of ICT	Computer user					
	Basic (n=23)		Intermediate (n=52)		Advance (n=25)	
	M	SD	M	SD	M	SD
ICT Awareness	22.95	2.05	22.82	2.85	25.08	3.04
ICT Adoption	22.65	2.48	23.00	2.99	23.88	3.38
ICTPU	22.59	2.21	23.75	2.95	25.00	2.97
ICTPEOU	22.69	2.03	23.38	3.37	25.20	3.09
TAICT	22.61	2.29	23.23	3.28	25.08	3.05
Total	113.49	11.06	116.18	15.44	124.24	15.53

Table no 11 indicates the mean and standard deviation of university faculty scores of ICT on the variable Computer User. The result from table reveals that advance user of computers has higher means scores on the total

scale of ICT as compared to basic and intermediate user. The results further portrays that faculty members who are advance computer user have higher scores on the ICT Ease of Use, ICT Awareness and Teachers attitude towards the

ICT. The mean scores of university faculty who are basic user are 113.49 while intermediate user

of computer is 116.18 and advance user of computer is 124.24.

Table 12

One way Analysis of variance of Faculty scores on ICT for the variable Computer user

ANOVA	DF	Mean Squares	F	Sig
Between Groups	2	784.424	5.835	0.004
Within Groups	97	134.440		
Total	99			

Table 15 indicates that there is significant difference between the responses of university faculty members on ICT for the

variable computer user and the value of $F(2, 97) = 5.835, p < 0.004$.

XI. DISCUSSION

The research designed to explore the use of ICT among public and private sector universities in teaching and learning process. The study was designed on the sample of 100 faculty members working in public and private sector universities of Rawalpindi and Islamabad. The study was primarily based to address the research objectives. First, objective of the research was to study the usage of information and communication technology (ICT) among faculty in public and private universities, second was to measure the awareness of private and public sector faculty about use of information and lastly, to explore the role of demographic variation of faculty members qualification age, experience, computer use and training in determining faculty use of ICT in teaching learning process .To fill full these objectives and various hypothesis were formulated, various statistical techniques were carried out such as mean, Standard deviation, correlation coefficient and ANOVA.

After the computation of item total correlation, it was derived out that there exists a positive correlation among all 30 items of ICT

Reliability was also calculated on information and communication Technology (ICT) Questionnaire by dividing the items into two parts. The reliability of part 1 was 0.732 and the reliability of part 2 was 0.713 where as between forms correlation was 0.781. It reveals that instrument has internal consistency to measure the ICT usage of university faculty.

The first hypothesis of the study was that there is a significant difference in the awareness of public and private sector university faculty about the use of information and communication technology in teaching and learning process. The result portrays that public sector university faculty have higher use of ICT as compared to the private sector universities .Our finding support this hypothesis and there is significant difference between public and private sector universities in use of ICT in teaching and learning process by using t-test (29.85).

In order to explore relationship between researches variables and research instruments, Pearson coefficients of correlation were calculated. The results of inter scales correlation of ICT portrays that all the subscales were significantly positively correlated with each other and with total scale of ICT (see table 1). The highest correlation in ICT questionnaire was found between ICT and ICT Perceived Usefulness which was (0.800**), whereas highest correlation exists between ICT Perceived Usefulness and Teacher Attitude toward ICT was (0.588**).Item correlation was also calculated.

The second hypothesis was that male university faculty members have higher use of ICT than female faculty members. The findings of our study supported the hypothesis and results illustrates that male faculty members frequently use ICT than female faculty members. The significant difference between the responses of university faculty members belonging to both genders on ICT ($F=4.187, p < 0.04$).The third hypothesis formulated was that the use of ICT is higher among young university faculty members than other age university faculty members.

Results supported this hypothesis and from findings, it is confirmed that use of ICT increases by age. ANOVA was also calculated and result indicates that there is significant difference between the responses of university faculty members belonging to various age groups on ICT F (6.118), $p < 0.005$.

The fourth hypothesis was accepted that Professors experiences higher use of ICT than Assistant professors and Lecturers. Qualification was important factor that affects the use of ICT of the university faculty. Hence, the fifth hypothesis was that M Phil qualified university faculty experiences more use of ICT than university faculty members having master and PhD degree. The result portrays that university faculty possessing M Phil exhibits high use of ICT than other qualification levels.

The sixth hypothesis was that more experience university faculty has higher use of ICT than university faculty with less experience. The results illustrates that mean scores of experienced faculty were higher on the total scale of ICT, whereas mean scores of less experienced were low. The seventh hypothesis was that Advance computer user among university faculty members has higher use of ICT than basic and intermediate user. The hypothesis was accepted that advance computer user have higher mean scores on the total scale of ICT as compared to basic and intermediate use.

XII. FINDINGS

Following findings were drawn from the research:

1. The study found out that there is a significant difference in the awareness of public and private sector university faculty about the use of information and communication technology in teaching and learning process.
2. Study reveals gender differences in prospective faculty perceptions that male university faculty members are more frequently use of ICT in teaching leaning process as compared to female university faculty(Male $M=120.16$, Female $M=115.19$).

3. Study found out that younger university faculty ($M=118.36$) experiences more use of ICT in teaching and learning process as compared to old age ($M=109.24$) university faculty members.
4. Result reveals that Professors ($M=119.19$) experiences more use of ICT as compared with Lectures ($M=118.07$) and Assistant professors ($M=117.17$).
5. The use of ICT is higher among the university faculty having MS/M Phil ($M=119.08$) as compared to faculty having Masters ($M=116.44$) and PhD ($M=113.6$).
6. The study shows that the university faculty members with more experience ($M= 120.11$) have higher use of ICT as compared to university faculty members with the less experience ($M=118.84$).
7. In type of institution , the comparison was made between public and private sector universities and the result illustrates that the university faculty working in public sector($M=123.44$) institutions experiences more use of ICT than private sector university faculty ($M=111.80$) in teaching and learning process.
8. The result from table reveals that advance user ($M=124.24$) of computers has higher means scores on the total scale of ICT as compared to basic ($M=113.49$) and intermediate user ($M=116.18$).

XIII. CONCLUSIONS

In the light of analysis and interpretation of data, it reveals that the use of ICT among public and private universities .The end product of this study can help the university management in the effective application of specific Information and Communication technology (ICT) in classroom situation. Followings are conclusions of the study:

1. Information and communication technology (ICT) questionnaire that was developed in this research is an effective

tool to measure the use of ICT in university faculty members.

2. There is a significant difference in the awareness of public and private sector university faculty about the use of information and communication technology in teaching and learning process.
3. Results showed gender differences in prospective university faculty perceptions where male university faculty scores higher than female in the use of ICT in teaching and learning.
4. Young university faculty experience more use of ICT than middle and old age university faculty.
5. Majority of the university faculty who are M Phil qualified experiences more use of ICT than Masters and PhD.
6. Professors have higher use of ICT as compared with lectures and assistant professors.
7. Experience have higher usage of ICT as compared to university faculty members with the less experience
8. Overall, the use of ICT is higher in public sector university faculty as compared to private sector faculty.
9. Lastly, faculty with higher knowledge of computer hardware and software use more ICT in teaching learning process than faculty with less knowledge of computer hardware and software.

XV. RECOMMENDATIONS

The study recommends that educational planners and academicians to introduce the effective use of ICT and especially ICT based designed curriculum that should be taught at school, college, and university level. On the basis of above results and conclusions from the present research, following are some recommendation:

1. The present research increases an understanding of ICT usage of university

faculty by collecting information. Higher education is considered as stratum of future development, it expects that university management may increase the use of advanced ICT tools and services for interactive learning environment and establishing improved teaching and learning process in higher education.

2. Findings of the study explored that there is a significant difference in the awareness of public and private sector university faculty about the use of information and communication technology in teaching and learning process. Furthermore, a public sector university experiences higher use of ICT so it is recommended that private sector university may provide enhance use of ICT facilities and creates more awareness and opportunities to incorporate the use of ICT for professional development of the teachers.
3. Our finding shows that male university faculty experiences higher use of ICT than female in teaching and learning, so universities management may provide equal opportunities for both male and female faculty in effective application of ICT.
4. According to finding of the study, young university faculty experience more use of ICT than old age university faculty. It is recommended that old age university faculty may be equipped with the use of modern ICT tools in teaching and learning process.
5. Present study revealed that majority of the university faculty who are M Phil qualified experiences more use of ICT than Masters and PhD. So, it is recommended that Masters and PHDs qualified professionals may train equally in the successful use of ICT facilities for teaching and learning process. University Management may provide proper financing for the proper

utilization and maintenance of ICT tool to Master and PHD teachers.

6. Result indicates that Professors have higher use of ICT as compared with lectures and Assistant professors, It is also recommended that Lectures and Assistant Professors may equipped with ICT tools for learning enhancement and enables them to acquire ICT skills.
7. The result shows that experienced faculty has better scores in the use of ICT than less experienced faculty. So, it is recommended that less experienced faculty may be given seminars and short program on ICT usage and ICT awareness. Moreover, they may give opportunities to observe the senior university faculty towards use of ICT tool in the classroom situations.
8. Result indicates that advance computer users among faculty experience high use of ICT as compared to basic and intermediate user. It is recommended that university management may ensure the availability of ICT for basic and intermediate users and they should arrange seminars, workshops to instruct about the utilization and awareness of ICT.

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