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.

CHAPTER 6

PRESENTATION AND ANALYSIS OF DATA

6.1 Introduction

The data is processed and analyzed in accordance with the outline laid down in the research plan. Data analysis refers to the computation of certain measures along with searching for patterns of relationship that exist among data groups. This chapter deals with processing, tabulation, presentation, analysis and interpretation of data.

6.2 Data Analysis

The Researcher has presented data analysis in nine parts as follows

Part I - Descriptive Analysis

Part II- Availability of ICT Infrastructure.

Part III - Infrastructure and cost required for ICT.

Part IV - Teaching Methodology.

Part V - Teachers Opinion about Teaching Feature with and Without ICT.

Part VI - Teachers Opinion about Learning Feature with and Without ICT.

Part VII – ICT reduces teaching time.

Part VIII - Students Opinion about Learning Feature with and Without ICT.

Part IX – Teachers Opinions about ICT on Institute Management and on Social Aspect.

Part I

6.2.1 Descriptive Analysis

Descriptive analysis includes Demographic profile of sample respondents detailing Gender, Age, Educational Qualification and Teaching Experience.

a. Demographic Profile of Sample Respondents.

Following table shows the Demographic Profile of sample respondents. Respondents have been classified according to demographic features as Gender, Age, Educational Qualification and Teaching Experience of respondents.

 Table 6.1 Demographic Profile of Sample Respondents

(N=28)

Detail	ې بېد تړ. د بې تې د تړ. د تې بې تې	Number	Percents
	* • **** * • ***	• • · · · · · · · · · · · · · · · · · ·	(%)
	Male	16	57.1
Gender	Female	12	42.9
	, r. to , to		a state a state State a state a
	20-29	9	32.1
	30-39	10	35.7
• Age	40-49	6	21.4
	50-59	3	10.7
	60-69	0	0.0
	· · · · · · · · · · · · · · · · · · ·	5	
	0-5	12	42.9
	6-10	7	25.0
Teaching	11-15	3	10.7
Experience			
	16-20	4	14.3
	21-25	1	3.6
	>25	1	3.6
			· · · · · · · · · · · · · · · · · · ·
	M.Com	7	25.0
	MBA	8	28.6
Qualification	MCA	7	25.0
(Degree)			
	MCM	2	7.1
	M.Sc	4	14.3
Numbe	r Téachers (N	I) : 2 44. 2 25.	28

Source: (Field Data)

Table 6.1 shows the demographic profile of respondents. Out of total Respondents,

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57.1% are male and 42.9% are female samples respectively. 32.1% respondents are in the age group of 20-29, 35.7% respondents are in the age group of 30-39, 21.4% respondents are in the age group of 40-49 and only 10.7% respondents are in the age group of 51 & above.

As per Academic Qualification 100% respondents are Post Graduate. 25% respondent have been completed M.Com and MCA degree, 28.6% respondent have been completed MBA, 7.1% respondent have been completed MCM and 14.3% respondent have been completed M.Sc. degree

42.9% respondents are having experience 0 to 5 years.25% respondents are having 6 to 10 years experience, 10.7% respondents are having experience 11 to 15 years.14.3% respondents are having 16 to 20 years experience and 7.2% respondents having 21 to more than 25 years experience.

b. Students sample respondents.

Following table shows the total number of student sample respondents. Respondents have been classified according to courses.

Table 6.2 Students sample respondents.

🔬 No. of 🐒 · Percentage ៖ ្នំ ខ្លះ Cláss Students **(%)**° BCA 60 20.00 23.33 BBA 70 UG B.Com 40 13.33 Total 170 56.67

	MCA	40	13.33
	MBA	50	16.67
PG	M.Com	40	13.33
	Total	130	43.33
	Fotal (N) =	300	

Source: (Field Data)

Table 6.2 shows the students sample respondents. Out of total Respondents, 56.67 % are under graduate and 43.33% are post graduate samples respectively. 20% respondents are

(N=300)

studying in BCA course, 23.33% are studying in BBA course, and 13.33% students are studying in MCA, B.Com, and M Com course. And 16.67% are in MBA course.

Part II

6.2.2 Availability of ICT Infrastructure

1. College A:

College A has 80 computers and 3 LCDs for teaching and learning practices. 2 ICT labs for student use with internet connection but there was no interactive white boards as well as laptop in the college. Table 6.3

Sr.No	Continents	Yes	. Noj	Quantity		
			•	(If Specify)		
1	Fax machine.	Se l		01		
2	Desktop Computer.	Ċ		80		
3	Laptop.		Ì	00		
4	Printer.	Ø		07		
5	Interactive White		Â,	00		
	board.					
6	Video camera.	s -		01		
7	Web camera	¢.		02		
8	LCD.	8		03		
9	Server Computer.	<i>e</i>		01		
10 -	Network.	~ ·		02 (In in each ICT lab)		
11	Internet connection			01 (Leased Line)		

Table 6.3	ICT	Infrastructure	of	College A	
	IUI	mnashuchure	U1	Conege A	

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2. Collège B:

College B has 100 computers, 10 laptops and 4 LCDs for teaching and learning practices. 3 ICT labs for student use with internet connection but there was no interactive white boards in the college. Table 6.4

Sr.No	Continents	Yes	No	Quantity
•				(If Specify)
1	Fax machine.	Ó		02
2	Desktop Computer.	Ó		100
3	Laptop.	÷¢		10
4	Printer.	Ø)		12
5	Interactive White board.		Ø	00
6	Video camera.	Ø		02
7	Web camera		Ċ	00
8	LCD.	Ø		04
9	Server Computer.	×		03
10	Network.	Ð		03 (In each ICT lab)
11	Internet connection	¢.		01 (Leased Line)

Table 6.4 ICT Infrastructure of College B

Source: (Field Data)

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3. College C:

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College C has 150 computers, 2 laptops and 8 LCDs for teaching and learning practices. 3 ICT labs for student use with internet connection but there was no interactive white boards in the college. Table 6.5

Sr.No	Côntinents	Yes	No
•		* · ·	(If Specify)
1	Fax machine.	¢.	01
2	Desktop Computer.	Ś	150
3	Laptop.	¢.	02
4	Printer.		15
5	Interactive White board.		Ø 00
6	Video camera.	Ø	01
7	Web camera	Ø	01
8	LCD.	Ś	08
9	Server Computer.	Ľ	10
10	Network.	Ś	03 (In each ICT lab)
	Internet connection	1 e	01 (Leased Line)

Table 6.5 ICT Infrastructure of College C

Source: (Field Data)

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4. College D:

College D has 60 computers and 2 LCDs for teaching and learning practices. 1 ICT labs for student use with internet connection but there was no interactive white boards as well as laptops in the college. Table 6.6

Sr.No	Continents	Yes	No	Quantity (If Specify)
1	Fax machine.	٠ ١	1	01
2	Desktop Computer.	Ø	-	60
3	Laptop.		Ø	00
4	Printer.	Ø		06
5	Interactive White board.		Ś	00
6	Video camera.	Ð		01
7	Web camera	Ø		01
8	LCD.	Ð		02
9	Server Computer.	S.		01
10	Network.	¢		01 (In one ICT lab)
11	Internet connection	Ø		01 (Leased Line)

Table 6.6 ICT Infrastructure of College D

Source: (Field Data)

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5. College E:

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College E has 67 computers and 1 LCD for teaching and learning practices. 1 ICT labs for student use with internet connection but there was no interactive white boards as well as laptops in the college. Table 6.7

Sr.No	Continents	Yes	No	Quantity (If Specify)
1	Fax machine.	<i>©</i>	3	01
2	Desktop Computer.	Ĩ		67
3	Laptop.		Ð	00
4	Printer.	Ð		06
5	Interactive White board.		S	00
6	Video camera.	Ś		01
7	Web camera	10		10
8	LCD.	Ø		01
9	Server Computer.	(V)		01
10	Network.	Ø		01 (In One01 ICT lab)
11	Internet connection	Ø		01 (Leased Line)

Table 6.7 ICT Infrastructure of College E

Source: (Field Data)

Part III

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A: Expected and observed Infrastructure provided by Institute / Colleges.

Sr.No	Functioning Desktop		College wise Quantity.					
		A	B	C	Ď	E		
1	Classroom standalone desktop	2	0	4	1	1		
2	Classroom networked desktop	0	0	0	0	0		
3	Administration standalone desktop	5	0	3	4	1		
4	Administration networked desktop	6	7	7	4	3		
5	Teacher standalone desktop	1	0	4	0	1		
6	Teacher networked desktop	0	0	0	0	0		
7	Computer Lab standalone desktop (students use)	30	30	60	30	60		
8	Computer Lab networked desktop (students use)	40	60	70	20	0		
9	Other	1	3	2	1	1		
	Total	85	100	150	60	67		

Source: (Field Data)

Table 6.9 Functioning LCDs provided by college.

Sr.No	Functioning LCDs		College	wise Q	uantity.	in juit
z '%		A	B	C.S	* D 3	E
1	Classroom fixed LCDs	2	1	4	0	0
2	Standalone LCDs	2	3	4	2	1
	Total	4	4	8	2	1

Source: (Field Data)

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Num	ber of college	s (N=5)	College				
No.	Courses	No. of Classes required for per course		B	C	D	E
1	BBA	3	<i>V</i>		Ŷ	Ø	
2	BCA	3	(E)	<u>و</u>	Ì		
3	MBA	2	Q)		È	Ø	Ś
4	MCA	3			S.		
5	B.Com	3		۵¢		Ø	
6	M.Com	2		Ø	Ø	Ø	
Total No of class			8	8	13	10	2
Total No of teachers			6	15	28	12	6
(Full time)							
	Total No of students			1350	1100	980	32

Table 6.10 Courses offered by selected colleges.

Source: (Field Data)

1. Norms for Intake & Number of Courses / Divisions in the Technical Campus

Table 6.11 AICTE Intake f	for Post Gradua	te Degree and Post G	raduate Diploma Level.	
	Intake per Division	ake per Maximum number of PG courses and /or divisions allowed in the New Technical campus (Single shift working)		
		Division/s	Intake	
MCA	60	2	120	
Management	60	2 120		

Source: (AICTE_final_approval_process_241210[1] pdf)

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Fable 6.12 C	omp	uters, So	ftware, II	nternet ar	nd Printe	rs.		
	-	Number of PCs to students ratio (Min 20 "PCs)	Legal System Software⊮	Legal Applicaton Software*	LAN & Inernet	Mail Server & Client	Internet Mbps / Intake of 240 students with Bandwidth Contention Contention Cof 1.1	Printers including Color Printer (% of total no of PC's)
Engineering / Technology	°-Dֻīp UG PG	16 14 1.2	ິ 03	, . 20 _	All B	¹⁴ Desired	,02 ⁻¹ ,02 ⁻¹	10% లోి.
	•		-					
Management	PG	12	01	10	All	Desired	02.5	10%
MCA	PG _e	12 ;	03	20	All	Desired		10%

2. Norms for Computer, Software, Internet and Printers for Technical Institution

Source: (AICTE_final_approval_process_241210[1].pdf)

From Table 6.11 and 6.12, it is observed that MCA and Management courses of PG level required 1:2 computers for 60 intake capacity. And 10% printers of total no of computers are needed. Therefore total number of required computers and printers for MCA and MBA course is as shown in Table 6.13.

Table 6	Table 6.13.Computers and Printers required for MBA and MCA course.									
Sr.No	Course	Intake	No. of Computers	No. of Printers						
1	MBA	120	60	6						
2	MCA	180	90	9						

Source: (Compiled by researcher according to AICTE norms)

According to UGC for BCA and BBA course required 1:2 computers for 80 intake capacities. And 10% printers of total no of computers are needed. Therefore total number of required computers and printers for BCA and BBA course is as shown in Table 6.14.

Table 6.	14. Comput	ers and Prin	ters required for B	BA and BCA course.
Sr.No	Course	Intake	No. of Computers	No. of Printers
1	BBA	240	60	6
2	BCA	240	60	6

Source: (Compiled by researcher according to UGC norms)

3. Required computers, LCDs and printers for selected colleges.

According to AICTE and UGC norms, number of required computers, LCDs and printers is as given below in Table 6.15, 6.16, 6.80, 6.81 and 6.82.

Table 6.15 College A: Number of required computers, LCDs and printers.

AICTE 1:2 computer for MBA and MCA			-	(College A	
Course.	Stud.	Com.	No Class	Computer	No.LCD	No. of Printer (10% of Computer)
BBA	80	20	3	60	3	6
BCA	80	20	3	60	3	6
MBA	60	30	2	60	2	6
Course wise required computer, LCDs and Printer			8	···· 180	· · · · · · · · · · · · · · · · · · ·	18

Source: (Compiled by researcher)

Table 6.16 College B: Number of required computers, LCDs and printers.

AICTE 1:2 computer for MBA and MCA				Č., -	College B	я 42 у 25 д. 42 у 42 у 4 у 4 у 4 у 4 у 4 у 2 у у 2 у 2 у 2 у 2
• Course.	Stud.	Com.	No Class	Computer	No.LCD	No. of Printer (10% of Computer)
BCA	80	20	3	60	3	6
M.Com	80	0	2	0	0	0
B.Com	80	0	3	0	0	0
Course w computer Pr	ise requ r, LCDs inter	ired and	8	.60	3	6 ⁴

Source: (Compiled by researcher)

AICTE 1:2 computer for MBA and MCA				C	ollege C_	
Course.	Stud.	Com.	No Class	Computer	No.LCD	No. of Printer (10% of Computer)
BBA	80	20	3	60	3	б
BCA	80	20	3	60	3	6
MBA	60	30	2	60	2	6
MCA	60	30	3	90	3	9
M.Com	80	0	2	0	0	0
Course wise required computer, LCDs and Printer			13	270	11	27

Table 6.17 College C: Number of required computers, LCDs and printers.

Source: (Compiled by researcher)

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Table 6.18 College D: Number of required computers, LCDs and printers.

AICTE 1:2 MBA a	AICTE 1:2 computer for MBA and MCA				College D	
Course.	Stud.	Com.	No Class	Computer	No.LCD	No. of Printer (10% of Computer)
BBA	80	20	3	60	3	6
MBA	60	30	2	60	2	6
M.Com	80	0	2	0	0	0
B.Com	80	0	3	0	0	0
Course wise required computer, LCDs and Printer			10	120	- 5	- 12

Source (Compiled by researcher)

Table 6.19 College E: Number of required computers, LCDs and printers.

AICTE 1: MBA	:2 comput	er for A		С	ollege E	
Course.	Stud.	Com.	No Class	Computer	No.LCD	No. of Printer (10% of Computer)
MBA	60	30	2	60	2	6
Course comput	wise requ er, LCDs Printer	ired and	2	60	2	6

Source: (Compiled by researcher)

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1) Teachers Computer Ratio

From (Table 6 8, 6 10) College A has 6 full time teachers and only one computer is allotted for teachers use, there was 1:6 computers teachers ratio in college A. In college B no computer is allotted for 15 teachers, so computers teachers ratio is 0:15. College C has 4 computers which are allotted to 28 teachers therefore computers teachers' ratio for college C is 1:7. College D has 12 full time teachers and no computer is allotted for teachers use, there was 0:12 computers teachers ratio in College D. College E has 6 teachers and 1 computer is assigned for them i.e. 1:6 computer teachers ratio. From above discussion researcher was found that there is very poor computer teacher's ratio in surveyed colleges as shown in Table 6.20

î	Table 6.20 Comput	ers and Teachers ratio	
College	No. of Teachers	No. of Teachers	Teachers
	Desktop Computers		Computer Ratio
A	1	6	1:6
B	0	15	0:15
С	4	28	1:7
D	0	12	0:12
E	• 1	6	1:6

Source: (Field Data)

If institution provide computer to each teacher, then and then only they could use computer for lesson preparation and teaching process. There should be 1 computer assigned for 1 teacher for better implementation of ICT in teaching learning process. College A has 6 teachers therefore 6 computers are expected for teachers use. College B has 15 teachers therefore 15 computers are expected. College C,D and E has 28, 12 and 6 teachers therefore 28,12 and 6 computers are required for college C,D and E respectively. Hence observed and expected number of computers is as shown in Table 6.21

	number of observed and expected	computers for teachers use.
College	Oi (Observed Computers)	Ei (Expected Computers)
Α •	1	6
В	0	15
С	4	28
D	0	12
Е	1	6

Source: (Field Data)

H1: There is significant difference between expected and observed number of computers for teachers use.

Table 6.22: Calculated Value of χ^2

ан 2 мда — с 2 лас 2 с то 2 с то 2 с основности области и то 2 с основности области и то 2 с основности области		Degree of	Level of		
Calculated Value of χ^2	Table Value of χ^2	Freedom	Significance		
55.9	13.277	4	1%		
Calculated χ^2 is > Table value of χ^2 i.e. 55.9 > 13.277					
	H_1 is accepted and H	H ₀ is rejected			

Source: (Compiled by researcher)

Hence, it is concluded that there is significant difference between expected and observed number of computers for teachers use.

2) Classrooms and Computers Ratio

From (Table 6.8, 6.10) College A has 8 classes and only two computers are allotted for classroom use, there was 4:1 classroom and computers ratio in college A. In college B no computer is allotted for classroom use, there are 8 classroom therefore classroom and computers ratio is 8:0. College C has 4 computers which are allotted to 13 classrooms therefore classroom and computers ratio for college C is 3:1. In college D only one computer is allotted for 10 classrooms, classroom and computers ratio is 10:1. College E has 2 classrooms and 1 computer is assign for classroom use i.e. 2:1 classroom and computers ratio. From above discussion researcher was found that there is no computer is allotted for every classes. Only few computers are allotted and teacher could use those computers whenever they need for lesson delivery in the target class. Very poor computer and classrooms ratio in surveyed colleges as shown in Table 6.23

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	Table 6.23 Classroom and Computers Ratio					
College	No. of Classroom	No. of Desktop Computers allotted for Classroom use.	Classroom and Computers Ratio			
A	8	2	4:1			
В	8	0	8:0			
С	13	4	3:1			
D	10	1	10:1			
E	2	1	2:1			

Source: (Field Data)

If institution connect computer in the each class, teacher will use it for lesson delivery. It will reduce the connectivity time and teacher will use it without wasting time. Computer connected in the class motivate teachers to conduct lecture through ICT, teacher who doesn't use ICT will try harder and at least they will start to conduct lecture through ICT. There should be 1 computer connected in each classroom for better implementation of ICT in teaching learning process.

College A and B has 8 classes therefore 8 computers are expected for classroom use. College C has 13 classes therefore 13 computers are expected. College D and E has 10 and 2 classes therefore 10 and 2 computers are required for college D and E respectively. Hence observed and expected number of computers is as shown in Table 6.24

Table 6.24 Total numbe	r of observed and expected compu	iters for classrooms use
College	Oi (Observed Computers)	Ei (Expected Computers)
А	2	8
B `	0	8
С	4	13
D	1	10
E	1	2

Source: (Field Data)

Hypothesis 2: The hypothesis is set on the basis of classrooms allotted computers is, Ho: There is no significant difference between expected and observed number of computers for classrooms use.

H1: There is significant difference between expected and observed number of computers for classrooms use.

Table 6.25: Calculated Value of χ^2

Calculated Value of χ^2	Table Value of χ^2	Degree of Freedom	Level of Significance
27.3	13.277	4	1%
Calculated	$1 \chi^2$ is > Table value	of χ^2 i.e. 27.3 > 13	.277
	H_1 is accepted and H_1	H ₀ is rejected	
Source: (Compiled by resear	cher)		

Hence, it is concluded that there is significant difference between expected and observed number of computers for classrooms use.

3) Course Wise Computers For Students Use

From Table 6.8, 6.15, 6.16, 6.17, 6.18, 6.19, Expected computers and observed computers for college A, B, C, D and E is as shown in Table 6.26

r of observed and expected course wis	se computers for students use.
Oi (Observed Computers)	Ei (Expected Computers)
70	180
90	60
• 130	270
50	120
60	60
	r of observed and expected course wis Oi (Observed Computers) 70 90 130 50 60

Source: (Field Data)

Hypothesis 3: The hypothesis is set on the basis of course wise allotment of computers is, Ho: There is no significant difference between course wise expected and observed number of computers for students use.

H1: There is significant difference between course wise expected and observed number of computers for students use.

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Calculated Value of χ^2	Table Value of χ^2	Degree of Freedom	Level of Significance
195.6	9 488	4	5%
Calculate	$d \chi^2$ is > Table value	of χ^2 i.e. 195.6 > 9	9.488
	H ₁ is accepted and H	H ₀ is rejected	

Table 6.27: Calculated Value of χ^2

Source: (Compiled by researcher)

Hence, it is concluded that there is significant difference between course wise expected and observed number of computers for students use.

4) LCDs and Classroom Ratio

From (Table 6.9, 6.10) College A has 8 classes and only two LCDs are fixed in the classroom and two LCDs are allotted to multipurpose use, there was 1:2 LCDs and classroom ratio in college A. In college B only one LCD is fixed in the classroom and three LCDs are allotted to multipurpose use, for 8 classrooms LCDs and classroom ratio is 1:2. College C has 8 LCDs which are allotted to 13 classrooms, four LCDs are fixed in classroom ratio for college C is 1:1.6. In college D there are 10 classrooms and two LCDs are allotted to multipurpose use, LCDs and classroom ratio is 1:5. College E has 2 classrooms and 1 LCD is assign for classroom as well as multipurpose use i.e. 1:2 LCDs and classroom ratio. From above discussion researcher was found that there are no LCDs fixed in every classes. Teacher could attach LCD whenever they need for lesson delivery in the target class. LCDs and classrooms ratio in surveyed colleges as shown in Table 6.28

	Table 6.28 LCDs and Classroom Ratio					
College		ECDs		Notof	LCD and	
	Classroom	Classroom	Total LCDs	Classroom	Classroom	
···· · · · · · · ·	🚊 🤤 standalone 🏹	Fixed	and a start with the second	and the second	Katio ,	
A	2	2	4	8	1:2	
В	3	1	4	8	1:2	
C	4	4	8	13	1:1.6	
D	2	0	2	10	1:5	
E	1	0	1	2	1:2	
(r.	110.4.					

Source: (Field Data)

From Table 6.15, 6.16, 6.17, 6.18, 6.19, Expected LCDs for college A, B, C, D and E is as shown in Table 6.29

Table 6.29 Total n	umber of observed and expected	LCDs for classrooms use.
College	Oi (Observed LCDs)	Ei (Expected LCDs)
		8
A	4	(BBA,BCA,MBA)
		3
В	4	(BCA)
		11
С	8	(BBA,BCA,MBA,MCA)
		5
D	2	(BBA,MBA)
		2
E	1	(MBA)
	······································	······································

Source: (Field Data)

Hypothesis 4: The hypothesis is set on the basis of classrooms allotted LCDs is,

Ho: There is no significant difference between expected and observed number of LCDs for classrooms use.

H1: There is significant difference between expected and observed number of LCDs for classrooms use.

Table 6.30: Calculated Value of χ^2

Calculated Value of χ^2	Table Value of χ^2	Degree of Freedom	Level of Significance		
5.5	9.488	4	5%		
Calculated χ^2 is < Table value of χ^2 i.e. 5.5 < 9.488					
H_0 is accepted and H_1 is rejected					

Source: (Compiled by researcher)

Hence, it is concluded that there is no significant difference between expected and observed number of LCDs for classrooms use.

5) Course Wise Printers.

From Table 6.3,6.3,64,6.5,6.6 observed number of printers and from Table 6.15, 6.16, 6.17, 6.18, 6.19 expected number of printers for college A, B, C, D and E is as shown in Table 6.31

Table 6.31	Total number of observed and e	expected printers.
College	Oi (Observed Printers)	Ei (Expected Printers)
A	7	18
В	12	6
C`	15	27
· D	6	12
E	6	6

Source: (Field Data)

Hypothesis 5: The hypothesis is set on the basis of printers,

Ho: There is no significant difference between expected and observed number of printers.

H1: There is significant difference between expected and observed number of printers.

Table 6.32: Calculated Value of χ^2

0 70 A ##	•	I	Degree of	Level of
C	alculated Value of χ^2	Table Value of χ^2	Freedom	Significance
9 2010000 5 6 6	21.1	13.277	4	1%
	Calculated	$1\chi^2$ is > Table value	of χ^2 i.e. 21.1 > 1.	3.277
		H ₁ is accepted and H	H ₀ is rejected	
Souro	1 a. (Compiled by recear	char)		

Hence, it is concluded that there is significant difference between expected and observed number of printers.

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Conclusion:

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Table 6.33 Expected and Observed number of Computers, LCDs and Printer

College	* A	S B	C)	С. E.
Observed	1	0	4	0	1
Expected	6	15	28	12	6
nent	5	15	24	12	5
$sis1 : H_1$ is ac	cepted a	nd H ₀ is r	ejected	1	
. College	A	₿.		D	E
Observed	2	0	4	1	1
Expected	8	8	13	10	2
nent	6	8	9	9	1
sis 2 : H_1 is ac	cepted a	nd H ₀ is 1	rejected	1	
10				T	
College	A	×Β	C		E
Observed	70	90	130	50	60
Expected	180	60	270	120	60
nent	110		140	70	
sis 3 : H_1 is ac	cepted a	and H ₀ is	rejected	L	1
		1			
	1 Marcine 1 Marcine 2 Marc	14 Y X X X X X		1	1 Yom " !
Conege	A	A	· · · · · · · · · · · · · · · · · · ·	Deres Deres	E
Observed	A 04	04	08	02	E 01
Observed Expected	04 08	04 03	08 11	02 05	E 01 02
Observed Expected nent	A 04 08 04	04 03 	08 11 03	02 05 03	E 01 02 01
Observed Expected nent sis $4: H_0$ is ac	A 04 08 04 ccepted a	04 03 and H ₁ is	08 11 03 rejected	02 05 03	E 01 02 01
Observed Expected nent sis $4 : H_0$ is ac	A 04 08 04 ccepted a	04 03 and H ₁ is	08 11 03 rejected	02 05 03	E 01 02 01
Observed Expected nent sis $4 : H_0$ is ac	A- 04 08 04 ccepted a	04 03 and H ₁ is	08 11 03 rejected	02 05 03	E 01 02 01 E
CollegeObservedExpectednentsis 4 : H_0 is acCollegeObserved	A- 04 08 04 ccepted a A- 07	04 03 and H ₁ is B. 12	08 11 03 rejected 15	02 05 03 06	E 01 02 01 E 06
CollegeObservedExpectednentsis $4 : H_0$ is acCollegeObservedExpected	04 04 08 04 ccepted A 07 18	04 03 and H ₁ is 12 06	08 11 03 rejected 15 27	02 05 03 06 12	E 01 02 01 E 06 06
CollegeObservedExpectednentsis $4 : H_0$ is acCollegeObservedExpected	A 04 08 04 ccepted A 07 18 11	04 03 and H ₁ is 12 06 	08 11 03 rejected 15 27 12	02 05 03 06 12 06	E 01 02 01 E 06 06
	Observed Expected nent sis1 : H ₁ is accord College Observed Expected nent sis 2 : H ₁ is accord College Observed Expected Expected Expected nent sis 3 : H ₁ is accord	Observed1Expected6nent5sis1 : H1 is accepted aCollegeAObserved2Expected8nent6sis 2 : H1 is accepted aCollegeAObserved70Expected180nent110sis 3 : H1 is accepted a	Observed10Expected615nent515sis1 : H_1 is accepted and H_0 is rCollegeABObserved20Expected8Nent68sis 2 : H_1 is accepted and H_0 is rCollegeABObserved7090Expected18060nent110sis 3 : H_1 is accepted and H_0 is r	Observed104Expected61528nent51524sis1 : H1 is accepted and H0 is rejectedCollegeABCObserved204Expected88Inent6899sis 2 : H1 is accepted and H0 is rejectedCollegeABCollegeABCObserved7090130Expected18060270nent110140sis 3 : H1 is accepted and H0 is rejected	Observed 1 0 4 0 Expected 6 15 28 12 nent 5 15 24 12 sis1 : H ₁ is accepted and H ₀ is rejected College A B C D Observed 2 0 4 1 Expected 8 8 13 10 nent 6 8 9 9 sis 2 : H ₁ is accepted and H ₀ is rejected College A B C D Observed 70 90 130 50 Expected 180 60 270 120 nent 110 140 70 sis 3 : H ₁ is accepted and H ₀ is rejected 110 140 70

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- Computers for teachers use : From Table 6.33 researcher found that there are 1,0,4,0,1 computers are allotted for teachers use in college A,B,C,D and E respectively, But expected computers are 6,15,28,12,6. Therefore college A, B, C, D and É have to implement extra 5,15,24,12 and 5 computers for teachers use respectively.
- Computers for classroom use : From Table 6.33 researcher found that there are 2,0,4,1,1 computers are allotted for classroom use in college A,B,C,D and E respectively, But expected computers are 8,8,13,10,2. Therefore college A, B, C, D and E have to implement extra 6,8,9,9 and 1 computer for classroom use respectively.
- 3. Computers for students use: From Table 6.33 researcher found that college A, C and D have to implement extra 110,140 and 70 computer for students use respectively.
- 4. LCDs: From Table 6.33 researcher found that college A, C, D and E have to implement extra 4, 3, 3 and 1 LCDs for teaching and learning purpose respectively.
- 5. **Printer for students use:** From Table 6.33 researcher found that college A, C and D have to implement extra 11, 12 and 6 Printer respectively.

Hypothesis: The hypothesis is set on the basis of infrastructure,

H₀: Implementation of ICT in teaching and learning isn't depends upon infrastructure provided.

H1: Implementation of ICT in teaching and learning depends upon infrastructure provided.

From Table 6.33 (Hypothesis 1, Hypothesis 2, Hypothesis 3 and Hypothesis 5), It is observed that there is significant difference between expected and observed infrastructure. For successful implementation of ICT in teaching and learning required sufficient number of computers for teachers and student use, every classroom should have one LCD and at least one computer connected. For conducting a lecture through ICT and changing traditional classroom teaching towards more students centric, every college should provide expected infrastructure. Therefore H_1 is accepted and H_0 is rejected. Hence, it is concluded that Implementation of ICT in teaching and learning depends upon infrastructure provided.

B : Cost Required for Infrastructure

1. College A

Table 6.34 College A: Expected and observed physical equipment cost.

1.1	Physical Equip	ment Cos	it .	Expected		Observed	
I.		Cost	Cost in	Total	Rs. *	Total	Rs. *
	Total Desktop	in \$	Rs.	Quantity	Quantity	Quantity	Quantity
1	Desktop for	()	For				
	Students	BBA,BO	BBA,BCA,MBA)			70	
2	Desktop for	(for 6 t	eachers)				
	Teachers			6		1	
3	Desktop for	(for 8	classes)				
	Classrooms			8		2	
4	Desktop for	Satis	fy with				
	Administration	current	desktop	11		11	
5	Other desktop			0		1	
Total cost of		\$ 600	30,000				
	Desktop			205	61,50,000	85	25,50,000
Īl	Cost of	\$111	5,590	18		7	
	Printer.				1,00,620		39,130
III	Cost of	\$ 2999		8		0	
	Interactive						
	White board.		149950		11,99,600		0
IV	Cost of Head	\$ 72	3,591	180		0	
	phone.				6,46,380		0
V	Cost of web	\$ 199	9950	8		2	
	camera.				79,600		19,900
VI	Cost of LCD.	\$ 1460	72,995	8		4	
	Canon LV-						
	7390				5,83,960		2,91,980
	1.1 Total				87,60,160		29,01,010

(Source : Field Data)

College A has 70 computers for students use, 1 for teachers use, 2 for classroom use, 11 for administration use and 1 for other purpose but expected computers for student use is 180, for teachers use is 6, for classroom purpose 8 computer are needed and administration staff are satisfy with current desktop i.e.11.Hence College A has total 85 desktop but expected computers are 205. College A currently invest 25,50,000 RS. But investment of 61,50,000 Rs for desktop computers are expected.18 printer are expected but only 7 printers was there. 39,130 Rs invested for printer but 1,00,620 Rs is expected. College didn't have a

interactive white boards and headphones, college should purchase at least 8 interactive white board for each class and 180 headphone for students desktop computers. College should have at least 8 web camera which will used for video conferencing, hence college should invest in web camera. There are only 4 LCDs in colleges but required LCDs are 8. From Table 6.34 it is observed that college didn't invest expected physical equipment cost.

1.2	Total Software]	License Co	st 🐴	Expe	cted	Obse	rved.
		Cost in	Cost in	Total	Rs. *	Total	Rs. *
		\$	Rs.	Quantity	Quantity	Quantity	Quantity
l.	Antivirus packag	e cost					
	Quick Heal		750	205		85	
	Total Security						
	(1 Year)	\$ 15			1,53,750	······	63,750
				(I) Total	1,53,750	(I) Total	63,750
II	Office package cost						
	Cost of MS	\$499.99	25000	1		0	
	office 2007				25,000		0
				(II) Total	25000	(II) Total	0
III.	Application Soft	ware Cost					
		a) BC	A Cours	e			
	Turbo C	\$400	20000	1	20,000	0	0
	Visual Basic	\$450	22500	1		0	
	6.0				22,500		0
	Crystal Report	\$495	24750	1		0	
	9-Professional				24,750		0
	Oracle 9	\$180	9000	1	9,000	0	0
	Dot Net	\$500	25000	1	25,000	0	0
	JAVA	\$500	25000	1	25,000	0	0
		-	etro <u>m</u> 1	(III.a)		(III.a)	
				Total	1,26,250	Total	0
	b) BH	BA,B.Com	and M.C	om Course			
	Tally ERP	\$ 360	18000	1	18000	0	0
		(III.b)		(III.b)			
				Total	18000	Total	0
	1.2 Total	(I+	· II + III.	a+ III.b)=	323000		63750
(Sou	rca · Field Data)					······································	

Table 6.35 College A: Expected and observed software license cost.

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College A has 85 desktop computers and 85 license antivirus for each computer, but they required 205 desktop and license antivirus for each. From Table 6.35 it is observed that college use pirated application software, they didn't purchase license application software Therefore it is conclude that college A didn't invest for expected physical equipment and software license.

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2. College B

Table 6.36 College B : Expected and observed physical equipment cost.

-1.1	Physical Equipme	ent Cost		Exp	ected	Obse	rved
I.	<u></u>	Cost in	Cost in	Total	Rs. *	Total	Rs. *
	Total Desktop	\$	Rs.	Quantity	Quantity	Quantity	Quantity
1	Desktop for	(For	BCA				
	Students	cou	rse)	60		90	
2	Desktop for	(for 15 t	eachers)				
	Teachers •			15		0	
3	Desktop for	(for 8 c	classes)				
	Classrooms			8		0	
4	Desktop for	Satisf	y with				
	Administration	current	desktop	7		7	
5	Other desktop					3	
Tot	al cost of Desktop	\$ 600	30,000	90	27,00,000	100	30,00,000
Π	Cost of Printer.	\$111	5,590	6	33,540	12	67,080
III.	Cost of	\$ 2999		3		0	
	Interactive White						
	board.		149950		4,49,850		0
IV.	Cost of Head	\$ 72	3,591	60		0	
L	phone.				2,15,460		0
V.	Cost of web	\$ 199	9950	8		0	
	camera.				79,600		0
VI.	Cost of LCD.	\$ 1460	72,995	3		4	
	Canon LV-7390				0.10.005		0.01.000
			1		2,18,985		2,91,980
	1.1 Total				36,97,435		33,59,060

(Source : Field Data)

College B has 90 computers for students use, 7 for administration use and 3 for other purpose but expected computers for student use is 60, for teachers use is 15, for classroom purpose 8 computer are needed and administration staff are satisfy with current desktop i.e.7. Hence College B has total 100 desktop but expected computers are 90. College B currently invest 30,00,000 Rs but investment of 27,00,000 Rs for desktop computers are expected.6 printer are expected but only 12 printers was there. 67,080 Rs invested for printer but 33,540 Rs is expected. College didn't have an interactive white board and headphones, college should purchase at least 3 interactive white boards for BCA classes and 60 headphones for students' desktop computers. College should have at least 8 web

camera which will used for video conferencing, hence college should invest in web camera. There are 4 LCDs in college but required LCDs are 3. From Table 6.36 it is observed that college didn't invest in expected physical equipment that is interactive white boards, headphones, web camera and desktop for teachers use. Otherwise college B has sufficient number of computers for student use, LCDs and printers.

1.2	Total Software L	icense Co	st	Expe	cted	Obse	rved
	an a	Cost in	Cost	Total	Rs. *	Total	Rs. *
		\$	in Rs.	Quantity	Quantity	Quantity	Quantity
l.	Antivirus package	ecost					
	Quick Heal		750	90		100	
	Total Security						
	(1 Year)	\$ 15			67,500		75,000
		······		(I) Total	67,500	(I) Total	75,000
II.	Office package co	ost					
	Cost of MS	\$499.99	25000	1		0	
	office 2007				25,000		0
				(II) Total	25,000	(II) Total	0
III.	Application Softw	vare Cost					
		a) BCA	A Cours	e		n na an	
	Turbo C	\$400	20000	1	20,000	0	0
	Visual Basic 6.0	\$450	22500	1	22,500	0	0
	Crystal Report	\$495	24750	1		0	
	9-Professional				24,750		0
	Oracle 9	\$180	9000	1	9,000	0	0
	Dot Net	\$500	25000	1	25,000	0	0
	JAVA	\$500	25000	1	25,000	0	0
	······································			(III.a)	<u> </u>	(III.a)	
				Total	1,26,250	Total	0
	b) BBA	A,B.Com a	and M.C	om Course			
	Tally ERP	\$ 360	18000	1	18,000	0	0
	a European and an		- h	(III.b)		(III.b)	
				Total	18,000	Total	0
1.2	Total	(I+	II + III.s	a + III.b)=	2,36.750		75.000
(Sou	rce : Field Data)					I <u>.</u>	

Table 6.37 College B : Expected and observed software license cost.

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College B has 100 desktop computers and 100 license antivirus for each computer, but they required 90 desktop and license antivirus for each. From Table 6.37 it is observed that college use pirated application software, they didn't purchase license application software Therefore it is conclude that college B didn't invest for expected physical equipment and software license.

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3. College C

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Table 6.38 College C : Expected and observed physical equipment cost.

1.1.	Physical Equ	lipment	Cost		and the co	Cho Cho	
1	Total	Cost	$\frac{\chi^{*},\chi^{*}}{Cost in}$	Total		Total	
1.	Dealston	Cost in ¢	Cost III	Overtity	NS. ·	Overtity	RS.
1	Desktop	m 🎝 🗌	KS.	Qualitity	Quantity	Quantity	Quantity
I	Desktop for	BBA,MB	A,BCA,MCA	0.70		100	
	Students	(0.00		270	-	130	······
2	Desktop for	(for 28	teachers)				
	Teachers			28		4	
3	Desktop for	(for 13	classes)				
	Classrooms			13		4	
4	Desktop for	Satis	fy with				
	Administratio	current	t desktop				
	n			10		10	
5	Other desktop			0		· 2	
Г	otal cost of						
	Desktop	\$ 600	30,000	321	96,30,000	150	45,00,000
II.	Cost of	\$111	5,590	27		15	
	Printer.				1,50,930		83,850
III.	Cost of						
	Interactive						
	White board.	\$ 2999	149950	11	16,49,450	0	0
IV.	Cost of Head	\$ 72	3,591	270		10	
	phone.				9,69,570		35,910
V	Cost of web	\$ 199	9950	13		1	
	camera.				1,29,350		9,950
VI.	Cost of LCD.						
	Canon LV-						
	7390	\$ 1460	72,995	11	8,02,945	8	5,83,960
	1.1 Total				<u>.</u>		
					1,33,32,245		52,13,670

(Source : Field Data)

College C has 130 computers for students use, 4 for teachers and classrooms use, 10 for administration use and 2 for other purpose but expected computers for student use is 270, for teachers use is 28, for classroom purpose 13 computer are needed and administration staff are satisfy with current desktop i.e.10. Hence College C has total 150 desktop but expected computers are 321. College C currently invest 45,00,000 Rs but investment of 96,30,000 Rs for desktop computers are expected .Total 27 printer are expected but only 15 printers was there. 83,850 Rs invested for printer but 1,50,930 Rs is expected. College

didn't have an interactive white boards, college should purchase at least 11 interactive white boards for BCA, MCA, BBA, MBA classes. College has 10 headphones but expected are 270 so college should purchase 260 headphones for students desktop computers. College should have 13 web cameras which will used for video conferencing, hence college should invest in web camera.

1.2	Total Software Li	cense Cos	t Star	Expe	cted	Obser	ved
· · · ·	L 2	Cost in	Cost	Total	Rs. *	Total	Rs. *
		\$	in Rs.	Quantity	Quantity	Quantity	Quantity
I.	Antivirus package	cost					• • • <u>•</u> • • • • • • • • • • • • • • •
	Quick Heal Total						
	Security (1 Year)	\$ 15	750	321	2,40,750	150	1,12,500
			(I) Total	2,40,750	(I) Total	1,12,500	
II. Office package cost							
	Cost of MS office 2007	\$499.99	25000	1	25,000	0	0
	L		1	(II) Total	25,000	(II) Total	0
III.	Application Softw	are Cost					• • • • • • • • • • • • • • • • • • •
		a) BC	A Cours	se			
	Turbo C	\$400	20000	1	20,000	0	0
	Visual Basic 6.0	\$450	22500	1	22,500	0	0
	Crystal Report 9-	\$495	24750	1	24 750	0	
	Oracle 9	\$180	9000	1	24,750	0	0
		\$100	9000	1	9,000	U	0
	Dot Net	\$500	25000	1	25,000	0	0
	JAVA	\$500	25000	1	25,000	0	0
				(III.a)		(III.a)	
	T			Total	1,26,250	Total	0
	b) BB.	A, B.Com	and M.	Com Course			
	Tally ERP	\$ 360	18000	1	18,000	0	0
				(III.b)		(III.b)	
	• • • • • • • • • • • • • • • • • • •			Total	18,000	Total	0
1.2	Total	(I+	- II + III.	.a + III.b)=	4,10,000		1,12,500
(Sou	rce : Field Data)						

Table 6.39 College C . Expected and observed software license cost.

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There are 8 LCDs in college but required LCDs are 11. From Table 6.38 it is observed that college didn't invest in expected physical equipment that is interactive white boards, LCDs, headphones, web camera, printers and desktop for teachers and students use.

College C has 150 desktop computers and 150 license antivirus for each computer, but they required 321 desktop and license antivirus for each. From Table 6.39 it is observed that college use pirated application software, they didn't purchase license application software Therefore it is conclude that college C didn't invest for expected physical equipment and software license.

4. College D

Table 6.40 College D : Expected and observed physical equipment cost.

1.1	Physical Equip	ment C	ost	Exp	ected	Obsei	ved
I.		Cost	Cost in	Total	Rs. *	Total	Rs. *
	Total Desktop	in \$	Rs.	Quantity	Quantity	Quantity	Quantity
1	Desktop for	(For E	BBA &				
	Students	MI	BA)	120		50	
2	Desktop for	(fo	r 12				
	Teachers	teac	hers)	12		0	
3	Desktop for	(for 10	classes)				
	Classrooms			10		1	
4	Desktop for	Satist	fy with				
	Administration	current	desktop	11		8	
5	Other desktop			0		1	
Total Cost of Desktop		\$ 600	30,000	153	45,90,000	60	18,00,000
II.	Cost of Printer.	\$111	5,590	12	67,080	6	33,540
III.	Cost of					0	
	Interactive White	\$		5			
	board.	2999	149950		7,49,750		0
IV.	Cost of Head						
	phone.	\$ 72	3,591	120	4,30,920	0	0
V.	Cost of web	\$ 199	9950	10		1	
	camera.				99,500		9,950
VI.	Cost of LCD.						
	Canon LV-7390						
		\$	72,995	5		2	
		1460		<u> </u>	3,64,975		1,45,990
	1.1 Total				63,02,225		19,89,480

(Source : Field Data)

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College D has 50 computers for students use, 1 for classrooms use, 8 for administration use and 1 for other purpose but expected computers for student use is 120, for teachers use is 12, for classroom purpose 10 computer are needed and administration staff are satisfy with current desktop i.e.11. Hence College D has total 60 desktop but expected computers are 153. College D currently invest 18,00,000 Rs but investment of 45,90,000 Rs for desktop computers are expected .Total 12 printer are expected but only 6 printers was there. 33,540 Rs invested for printer but 67,080 Rs is expected. College didn't have an interactive white boards, college should purchase at least 5 interactive white boards for BBA and MBA classes. College has only 1 web camera but expected are 10 so college

should purchase 9 web cameras which will used for video conferencing, There are no headphone hence college should purchase 120 headphones for students desktop computers. There are 2 LCDs in colleges but required LCDs are 5. From Table 6.40 it is observed that college didn't invest in expected physical equipment that is interactive white boards, headphones, LCDs web camera, printers and desktop for teachers and students use.

- 1:2 Marine -	1.2 Total Software License Cost Expected						ved
		Cost in	Cost	Total	Rs. *	Total	Rs. *
		\$	in Rs.	Quantity	Quantity	Quantity	Quantity
I.	Antivirus packag	ge cost					
	Quick Heal Total Security						
	(1 Year)	Ş 15	750	153	1,14,750	60	45,000
				(I) Total	1,14,750	(I) Total	45,000
II.	Office package of	cost					
	Cost of MS						
	office 2007	\$499.99	25000	1	25,000	0	0
				(II) Total	25,000	(II) Total	0
III.	Application Soft	tware Cost					
	a) BBA,	MBA,B.C	om and l	M.Com Cour	rse		
	Tally ERP	\$ 360	18000	1	18,000	0	0
				(III.a)		(III.a)	
				Total	18,000	Total	0
	1.2 Total		(I+I	I + III.a)=	1,57,750		45,000

Table 6.41 College D : Expected and observed software license cost.

(Source : Field Data)

College D has 60 desktop computers and 60 license antivirus for each computer, but they required 153 desktop and license antivirus for each. From Table 6.41 it is observed that college use pirated application software, they didn't purchase license application software Therefore it is conclude that college D didn't invest for expected physical equipment and software license.

5. College E

Table 6.42 College E : Expected and observed physical equipment cost.

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1.1	Physical Equipm	ent Co	st 🛬	Ēxp	ected	Obs	erved
I		Cost	Cost in	Total	Rs. *	Total	Rs. *
	Total Desktop	-in \$	Rs.	Quantity	Quantity	Quantity	Quantity
1	Desktop for	(Fo	r MBA				
	Students	<u> </u>	ourse)	60		<u>60</u>	
2	Desktop for	(for 6	teachers)				
	Teachers			6		1	
3	Desktop for	(for 2	l classes)				
	Classrooms			2		1	
4	Desktop for	Sati	sfy with				
	Administration	currer	it desktop	4		4	
5	Other desktop			0		1	
	· · · · · · · · · · · · · · · · · · ·	\$	30,000				
То	tal Cost of Desktop	600	-	72	21,60,000	67	20,10,000
II.	Cost of Printer.	\$	5,590	6		7	
		111			33,540		39,130
III.	Cost of Interactive						
	White board.	\$		2		0	
		2999	149950		2,99,900		0
IV.	Cost of Head						
	phone. •	\$ 72	3,591	60	2,15,460	0	0
V.	Cost of web						
	camera.	\$	9950	2		10	
		199			19,900		99,500
VI.	Cost of LCD.						
	Canon LV-7390	\$	72,995	2		1	
		1460			1,45,990		72,995
	1.1 Total				28,74,790		22,21,625

(Source : Field Data)

College E has 60 computers for students use, expected computers for student use is 60 and college provided 60 computers for students use, 1 for teachers and classrooms use and 4 for administration use ,1 for other purpose. But expected computers for teachers use is 6, for classroom purpose 2 computers are needed and administration staff are satisfy with current desktop j.e.4. Hence College E has total 67 desktop but expected computers are 72. College E currently invest 20,10,000 Rs but investment of 21,60,000 Rs for desktop computers are expected. College didn't have an interactive white boards, college should purchase at least 2 interactive white boards. There are no headphone hence college should

purchase 60 headphones for students desktop computers. There are 1 LCDs in colleges but required LCDs are 2. From Table 6.42 it is observed that college didn't invest in expected physical equipment that is interactive white boards, headphones, LCDs and desktop for teachers use.

Table 6 43 College E : Expected and observed software license cost.

1.2	Total Software Li	cense Cos	Ēxp	ected	Öbse	rved	
		Cost in	Cost in	Total	Rs. *	Total	Rs. *
		\$	Rs.	Quantity	Quantity	Quantity	Quantity
I.	Antivirus package	cost					
	Quick Heal Total						
	Security (1 Year)	\$ 15	750	72	54,000	67	50,250
		(I) Total	54,000	(I) Total	50,250		
II.	Office package cos	st					
	Cost of MS						
	office 2007	\$499.99	25000	1	25,000	0	0
				(II)		(II)	
				Total	25,000	Total	0
III.	Application Softw	are Cost					
		a) MB	A Cours	е			
	Tally ERP	\$ 360	18000	1	18,000	0	0
				(III.a)		(III.a)	
				Total	18,000	Total	0
	1.2 Total		(I+II)	+ III.a)=	97,000		50,250

(Source : Field Data)

College E has 67 desktop computers and 67 license antivirus for each computer, but they required 72 desktop and license antivirus for each. From Table 6.43 it is observed that college use pirated application software, they didn't purchase license application software Therefore it is conclude that college E didn't invest for expected physical equipment and software license.
1) Physical Equipment Cost.

From Table 6.34, 6.36, 6.38, 6.40, 6.42, Expected and observed investment in physical equipment for college A, B, C, D and E is as shown in Table 6.44

Table 6.44 Observed and Expected Physical Equipment Cost						
College	OI (Observed Physical Equipment)	EI (Expected Physical Equipment)				
А	29,01,010	87,60,160				
В	33,59,060	~ 36,97,435				
С	52,13,670	1,33,32,245				
D •	63,02,225	19,89,480				
E	24,40,610	28,74,790				

Source: (Field Data)

Hypothesis 1: The hypothesis is set on the basis of physical equipment,

Ho: There is no significant difference between expected and observed investment for physical equipment.

H1: There is significant difference between expected and observed investment for physical equipment.

Table 6.45: Calculated Value of χ^2

		Degree of	Level of					
Calculated Value of χ^2	Table Value of χ^2	Freedom	Significance					
18308186.8	13.277	4	1%					
Calculated χ^2	Calculated χ^2 is > Table value of χ^2 i.e. 18308186.8 > 13.277							
H_1 is accepted and H_0 is rejected								

Source: (Compiled by researcher)

Hence, it is concluded that there is significant difference between observed and expected investments for physical equipment.

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2) Software license cost.

From Table 6 35, 6.37, 6.39, 6.41, 6.43, Expected and observed investment in physical equipment for college A, B, C, D and E is as shown in Table 6.46

Table 6.46 Observed and expected software license cost								
College	OI (Observed license cost)	Ei (Expected license cost)						
A	29,01,010	87,60,160						
В	75,000	2,36,750						
С	1,12,500	4,10,000						
D	45,000	1,57,750						
E	50,250	97,000						

Source: (Field Data)

Hypothesis 2: The hypothesis is set on the basis of software license,

Ho: There is no significant difference between expected and observed investment for software license.

H1: There is significant difference between expected and observed investment for software license.

Table 6.47: Calculated Value of χ^2

Calculated Value of χ^2 Table Value of χ^2	Degree of Freedom	Level of Significance						
4348333.4 13.277	4	1%						
Calculated χ^2 is > Table value of χ^2 i.e. 4348333.4 > 13.277								
H_1 is accepted and H_0 is rejected								

Source: (Compiled by researcher)

Hence, it is concluded that there is significant difference between observed and expected investments for software license.

Hypothesis: The hypothesis is set on the basis of infrastructure,

H₀: Implementation of ICT in teaching and learning is not depends upon financial support.

H₁: Implementation of ICT in teaching and learning depends upon financial support.

From Table 6.44 and 6.46 (Hypothesis 1 and Hypothesis), it is observed that there is significant difference between observed and expected physical equipment investment and software license investment. H_1 is accepted and H_0 is rejected. Hence, it is concluded that Implementation of ICT in teaching and learning depends upon financial support. Therefore a sufficient financial support is not available for creating infrastructure of ICT.Is accepted

Part IV

6.2.4 Teaching Methodology

1. Teaching Methodology used by teacher while conduction a lecture.

Sr.No	Tick one box for each row	' None	A · Little	Some Time	Alot	W.A	Rank
1.	Classroom whiteboard teaching session.	6	7	8	7	2.571	2
2.	Computer Bases Teaching via CD-ROM.	8	5	3	12	2.679	1
3.	Online Teaching via Internet / World Wide Web.	15	0	4	11	2.250	4
4.	Video Tapes /Audiocassettes.	26	2	0	0	1.071	7
5.	Teleconferencing/Video Conferencing.	26	1	1	0	1.107	6
6.	Computer Based Games or Simulations.	12	8	5	3	1.964	5
7.	Call Visitor expert teachers.	9	3	8	8	2.536	3

Table 6.48 Teaching Methodology used by teachers

Source[.] (Field Data)

Table 6.48 shows Teaching Methodology used by sample respondents.

Computer Bases Teaching via CD-ROM, Classroom whiteboard teaching session, Call visitor expert teachers, Online teaching via internet / World Wide Web have ranked 1^{st,} 2nd, 3rd and 4th with mean 2.679, 2.571, 2.536 and 2.250 respectively.

Respondents have given 5^{th,} 6th and 7th ranks to Computer Based Games or Simulations, Teleconferencing/Video conferencing and Video tapes /Audiocassettes with means 1.964, 1.107 and 1.071 respectively.

Respondents are used the CD-ROM and Whiteboard teaching methods to teaching the target class and also call the visitor expert teachers. But respondents are less confident with Computer Based Games or Simulations, Teleconferencing/Video Conferencing and Video Tapes /Audiocassettes teaching methods.

From this survey, researcher was found that only 12 teachers out of 28 sample uses the computer for preparing their own teaching material and out of 28 sample only 15 teacher's uses computer for lesson delivery is as shown in diagram 6.1





The teachers who use computer for lesson preparation himself uses computer for lesson delivery in the class. And 3 teachers out of 16 teachers who doesn't use computer for lesson preparation but use computer for lesson delivery in the class. Total 15 teachers uses computer for lesson delivery is as shown in diagram 6.2.



Diagram 6.2

D.G.COLLEGE, SATARA

Out of 15 teachers who uses computer for lesson delivery only 12 teachers create their own teaching material and 3 teachers' uses downloaded material. From above discussion researcher found that only 12 teachers was comfortable with ICT teaching, they doesn't required ICT training regarding to lesson preparation and lesson delivery. But 3 teachers who use computer only for lesson delivery needed ICT training for lesson preparation.





At the end of this discussion, total 16 teachers requested for ICT training regarding to lesson preparation and lesson delivery as shown in Table 6.49

Table 6.49 A teacher ICT uses percentage.

S.No	(N=28)	No. of respondent	%
1	Teacher who doesn't required ICT training	12	42.9
2	Teachers requested for ICT training	16	57.1

Source: (Field Data)

From this survey, Researcher was found that computerized self-study programs, Public Seminars/ Conference, Computer Bases Training via CD-ROM and online training via Internet / World Wide Web have ranked 1st, 2nd, 3rd and 4th with weighted mean 3.000, 2 750, 2.500 and 2.393 respectively.

Respondents have given 5th, 6th, 7th and 8th ranks to visitor expert trainer, outdoor experimental programs, Computer based games or simulations and teleconferencing/video conferencing with weighted means 2.143, 2.143 , 2.036 and 1.714 respectively. Respondents have given 9th and 10th ranks to video tapes /audiocassettes and classroom programs – Live training session with weighted means 1.607 and 1.429 respectively.

Sr.No	(N=28)	A.lot	Some	A	Never	- WA.	Rank
	*		Time	Little	<u> </u>		-
1	Classroom programs – Live	2	2	2	22		10
	training session.					1.429	
2	Public Seminars/ Conference.	11	5	6	6	2.750	2
3	Computer Bases Training via	6	7	10	5		3
	CD-ROM.					2.500	
4	Online training via Internet /	8	5	5	10		4
	World Wide Web.					2.393	
5	Video Tapes /Audiocassettes.	0	4	9	15	1 607	9
6	Teleconferencing/Video	1	3	11	12	1.007	0
	Conferencing/ Video		5	1 1 1	15	1 714	0
	Conterencing.	ļ				1./14	
7	Computer Based Games or	3	4	12	9		7
L	Simulations.					2.036	
8	Visitor expert trainer.	5	4	9	10	21/3	5
					10	2.145	
9	Outdoor experimental programs.	2	6	2	12	2.143	6
10	Computerized Self-Study	12	8	4	4		1
	Programs					3.000	

Table 6.50	Training	methods	used by	college	or institute	for	providing	ICT	training
					••••••				

Source: (Field Data)

Most of the time institution / colleges use computerized self-study programs and public seminars or conference for providing training to the teachers. rarely or called never use teleconferencing/video conferencing, Classroom live training session and computer based games or simulations for training purpose as shown in **Diagram 6.4**

■ A lot ■ Some Time □ A Little ■ Never ♀ Computerized Self-Study Programs 4249 2333 14.3 14.3 ∞ Outdoor experimental programs. 177.9 24.4 17.9 4249 ∞ Visitor expert trainer. 177.9 24.3 32.1 35.7 ∾ Computer Based Games or Simulations. 1057 14.3 42.9 32.1 ∞ Visitor expert trainer. 1079 34.3 42.9 32.1 ∞ Computer Based Games or Simulations. 1057 14.3 42.9 32.1 ∞ Teleconferencing/Video Conferencing. 34(10.7 39.3 46.4 m Video Tapes /Audiocassettes. 34.3 32.1 53.6 ◄ Online training via Internet / World Wide Web. 28.6 17.9 85.7 m Computer Bases Training via CD-ROM. 24.4 25.6 35.7 17.9 N Public Seminars/ Conference. 89.3 17.9 21.4 24.4 ۲ Classroom programs – Live training session. 7477.1 7836		Training methods used by college o	r institute for providing IC training
♀ Computerized Self-Study Programs 42.9 23 ⊙ 14.3 14.3 ∞ Outdoor experimental programs. 17.9 21.4 17.9 42.9 ∞ Visitor expert trainer. 17.9 14.3 35.7 ~ Computer Based Games or Simulations. 10.7 14.3 42.9 32.1 ∞ Visitor expert trainer. 17.9 14.3 42.9 32.1 ∞ Computer Based Games or Simulations. 10.7 14.3 42.9 32.1 ∞ Teleconferencing/Video Conferencing. 34.3 32.1 53.6 ✓ Online training via Internet / World Wide Web. 23.6 17.9 35.7 ™ Computer Bases Training via CD-ROM. 23.4 25.9 35.7 17.9 ∾ Public Seminars/ Conference. 39.3 1.7.9 21.4 21.4 ↔ Classroom programs – Live training session. 7.4747477.1 7846		A lot Some Time	□ A Little ■ Never
on Outdoor experimental programs. 17/9 21.4 17.9 42.9 ∞ Visitor expert trainer. 17/9 17.9 32.1 35.7 N Computer Based Games or Simulations. 10.7/9 14.3 42.9 32.1 ω Teleconferencing/Video Conferencing. 3600.7 39.3 46.4 ω Video Tapes /Audiocassettes. 14.3 32.1 53.6 Ψ Online training via Internet / World Wide Web. 28.6 17.9 17.9 35.7 Μ Computer Bases Training via CD-ROM. 21.4 23.9 35.7 17.9 Ν Public Seminars/ Conference. 39.8 1.79 21.4 21.4	9	Computerized Self-Study Programs	4219 233 14.3 14.3
∞ Visitor expert trainer. 17.9 12.3 32.1 35.7 N Computer Based Games or Simulations. 10.7 14.3 42.9 32.1 0 Teleconferencing/Video Conferencing. 3(£10.7 39.3 46.4 10 Video Tapes /Audiocassettes. 34.3 32.1 53.5 ✓ Online training via Internet / World Wide Web. 23.6 17.9 35.7 M Computer Bases Training via CD-ROM. 21.4 23.0 35.7 17.9 N Public Seminars/ Conference. 89.8 17.9 21.4 20.4 I Classroom programs – Live training session. 7/37/37.1 7/3/6	6	Outdoor experimental programs.	1779 <u>24</u> 29 17.9 42.9
► Computer Based Games or Simulations. 10.7/1 14.3 42.9 32.1 •• Teleconferencing/Video Conferencing. 3.€ (0).7 39.3 46.4 •• Video Tapes / Audiocassettes. 34.3 32.1 53.6 •• Online training via Internet / World Wide Web. 28.6 17.9 85.7 •• Computer Bases Training via CD-ROM. 21.4 23.6 35.7 17.9 •• Public Seminars/ Conference. 89.3 17.9 21.4 24.4 •• Classroom programs – Live training session. 7.417.57.1 78.6	œ	Visitor expert trainer.	1799 N.B 32.1 35.7
□ Teleconferencing/Video Conferencing. 34.3 39.3 46.4 □ Video Tapes / Audiocassettes. 34.3 32.1 53.6 □ Video Tapes / Audiocassettes. 34.3 32.1 53.6 □ Online training via Internet / World Wide Web. 28.6 17.9 85.7 □ Computer Bases Training via CD-ROM. 21.4 25.0 35.7 17.9 □ Public Seminars/ Conference. 89.3 1.79 21.4 21.4 □ Classroom programs – Live training session. 7.417.97.1 78.6	7	Computer Based Games or Simulations.	10.7 14.3 42.9 82.1
In Video Tapes / Audiocassettes. 34.3 32.1 53.6 Image: State of the state	9	Teleconferencing/Video Conferencing.	31,6700.7 39.3 46.4
→ Online training via Internet / World Wide Web. 28.6 17.9 35.7 m Computer Bases Training via CD-ROM. 21.4 25.0 35.7 17.9 N Public Seminars/ Conference. 29.3 17.9 21.4 21.4 Image: Classroom programs – Live training session. 7.417.57.1 78.6	ъ	Video Tapes /Audiocassettes.	<u> 34.3 32.1 53.6</u>
m Computer Bases Training via CD-ROM. 21.4 23.0 35.7 17.9 N Public Seminars/ Conference. 89.3 17.9 21.4 21.4 Image: Classroom programs – Live training session. 7472.17.1 73.6	4	Online training via Internet / World Wide Web.	28.6 IT.9 85.7
N Public Seminars/ Conference. 39.3 17.9 21.4 20.4 ➡ Classroom programs – Live training session. 7/47/17.1 7/3/6	m	Computer Bases Training via CD-ROM.	241.4 23.0 35.7 17.9
Classroom programs – Live training session. 7.47.17.1	7	Public Seminars/ Conference.	<u>89.9</u> <u>1</u> .79 <u>21.4</u> 20.4
		Classroom programs – Live training session.	7.47.1: <mark>7.1</mark> 78.6

Diagram 6.4

M.PHIL

Part -V

6.2.5 Teachers opinion about teaching feature with and without ICT

1. Teachers who use ICT for teaching process.

 Table 6.51 Opinion of teachers who use ICT for teaching process about teaching feature

 with ICT

GN.	Tranking Franking Minak KOT 2	Chinala	·	Malalan	Dfam.	Caring In		- : 3
2'10	i caching reature with it's	Agree	Agree	Agree	Disagree	Disagree		
	and the set of the set	****** *******************************	****** ******************************	nor Disagree			WA	* Rank
1	Teachers try harder in what they are teaching	10	4	1	0	0	4 60	3
2	Improves the students' engagement in class	8	3	2	1	1	4 07	8
3	Improve communication between student and teachers	9	5	0	1	0	4.47	5
4	Change classroom teaching towards more students centric	11	3	0	0	1	4.53	4
5	Helps to online assessment	5	9	1	0	0	4 27	6
6	Support for "Any time" and "Any where "learning	11	4	0	0	0	4 73	2
7	Support for collaborative learning (Video conferencing)	12	3	0	0	0	4 80	1
8	Reduce teaching time	5	8	2	0	0	4.20	7

Source[•] (Field Data)

From Table 6.51 Researcher was collecting the data about ICT teaching from teachers who use ICT for teaching.

Respondents have given 1st,2nd, 3rd,4th ranks to ICT support for collaborative learning, support for "Any time" and "Any where "learning, teachers try harder in what they are teaching, change classroom teaching towards more student centric with weighted means 4.80,4.73, 4.60 and 4.53 respectively.

Respondents shown positive attitude towards ICT change classroom teaching towards more student's centric, ICT support for collaborative learning and ICT support for "Any time" and "Any where "learning

(N=15)

S.No	Teaching Feature Without	Strongly Agree	Agree	Neither * Agree	Disagree	Strongly Disagree	14 22 24 29 42 2 20 44 2 20 44 2 20 44 2 20 44 1 21 2 21 2 21 2 21 2 21 2 21 2 21 2	۲. ۲. ۲. ۲. ۲. ۲. ۲. ۴. (۱۹۹۹) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) (۱۹۹۵) ۴. (۱۹۹۵)
2 m			2,3 , 1 / 1 7 8 8	Disagree			WÁ	Rank
1	Teachers try harder in what they are teaching	0	0	3	3	9	1 60	7
2	Improves the students' engagement in class	1	1	0	12	1	2.27	2
3	Improve communication between student and teachers	1	1	4	5	4	2 33	1
• 4	Change classroom teaching towards more students centure	0	2	2	8	3	2 20	35
5	Helps to online assessment	1	0	1	10	3	2 07	5
6	Support for "Any time" and "Any where "learning	0	0	0	11	4	1.73	6
7	Support for collaborative learning (Video conferencing)	0	0	0	7	8	1.47	8
8	Reduce teaching time	0	1	3	9	2	2 20	3 5

 Table 6.52 Opinion of Teachers who use ICT for teaching process about Teaching Feature

Source: (Field Data)

without ICT

Researcher collects the data about without ICT teaching from teachers who use ICT for teaching. Researcher found that without ICT classroom teaching change towards more students centric; without ICT teaching time is going to reduce have same ranked 3.5th with weighted mean 2.20.

Respondents have given 1st, 2nd, 5th, 6th, 7th and 8th ranks to improve communication between student and teachers, Improves the students' engagement in class, Helps to online assessment, Support "Any time" and "Any where "learning, Teachers try harder in what they are teaching, Support for collaborative learning (Video conferencing) with weighted means 2.33, 2.27, 2.07, 1.73, 1.60 and 1.47 respectively Table 6.52.

Respondent who used ICT for teaching shows negative attitude towards without ICT i.e. Teachers try harder in what they are teaching, traditional teaching support for collaborative learning (Video, conferencing) and traditional teaching support for "Any time" and "Any where "learning?

2. Teachers who doesn't use ICT for teaching

Table 6.53 Opinion of Teachers who doesn't use ICT for teaching process about TeachingFeature with ICT.(N=13)

S.No	Teaching Feature With IGT	Strongly	Agree	Neither	Disagree	Strongly		
		Agree		Agree nor Disagree		Disagree	- WA	Ránk
1	Teachers try harder in what they are teaching	5	4	2	1	1	3.85	3.5
2	Improves the students` engagement in class	5	2	2	1	3	3.38	7
3	Implove communication between student and teachers	3	3	3	2	2	3.23	8
4	Change classroom teaching towards more students centric	6	4	2	1	0	4.15	1
5	Helps to online assessment	5	5	2	0	1	4.00	2
6	Support for "Any time" and "Any where "learning	5	5	0	2	1	3.85	3.5
7	Support for collaborative learning (Video conferencing)	2	6	4	1	0	3.69	5
8	Reduce teaching time	4	3	2	3	1	3.46	6

Source: (Field Data)

Researcher was collecting the data about ICT teaching from teachers who don't use ICT for teaching. Researcher found that respondents have given 1st, 2nd, 5th, 6th, 7th and 8th ranks to change classroom teaching towards more students centric, Helps to online assessment, Support for collaborative learning (Video conferencing), Reduce teaching time, Improves the students' engagement in class and improve communication between student and teachers with weighted means 4.15, 4.00, 3.69, 3.46, 3.38 and 3.23 respectively.

Researcher found that with ICT teachers try harder in what they are teaching and support for "Any time" and "Any where "learning have same ranked 3.5th with weighted mean 3.85 Table 6.53

Respondent who don't used ICT for teaching shows positive attitude towards ICT change classroom teaching towards more students centric, ICT helps to online assessment, In ICT teaching process teachers try harder in what they are teaching and ICT support for "Any time" and "Any where "learning.

S:No	Teaching Feature Without ICT	Ströngly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	WA	Rank
1	Teachers try harder in what they are teaching	3	6	2	1	1	3.69	1
2	Improves the students' engagement in class	2	5	1	2	3	3.08	4
3	Improve communication between student and teachers	3	4	2	2	2	3.31	3
4	Change classroom teaching towards more students centric	5	3	1	3	1	3.62	2
5	Helps to online assessment	0	5	0	3	5	2.38	6
6	Support for "Any time" and "Any where "learning	1	0	3	5	4	2.15	7
7	Support for collaborative learning (Video conferencing)	0	0	3	4	6	1.77	8
8	Reduce teaching time	2	3	0	5	3	2.69	5

Table 6.54 Opinion of Teachers who doesn't use ICT for teaching process about TeachingFeature without ICT(N=13)

Source: (Field Data)

Researcher collects the data about without ICT teaching from teachers who don't use ICT for teaching. Researcher found that without ICT teachers try harder in what they are teaching, Change classroom teaching towards more students centric, Improve communication between student and teachers, Improves the students' engagement in class have ranked 1st ,2nd, 3rd, and 4th with weighted mean 3.69, 3.62 ,3.31 and 3.08 respectively.

Respondents have given 5th, 6th, 7th and 8th ranks to teaching without ICT reduce teaching time, Helps to online assessment, Support for "Any time" and "Any where "learning, Support for collaborative learning (Video conferencing) with weighted means 2.69, 2.38, 2.15, and 1.77 respectively Table 6 54

Respondent who don't used ICT for teaching shows negative attitude towards (without ICT) traditional teaching. It helps to online assessment, traditional teaching support for collaborative learning (Video conferencing) and traditional teaching support for "Any time" and "Any where "learning.

5

Table 6.55 : Correlation of teaching features between with and without ICT teaching process							
Teaching Features	With and without ICT	T (Statistics)					
Teachers who use ICT for teaching (N=15)	-0.75	-2.77746					
Teachers who doesn't use ICT for teaching (N=13)	0.047619	0.11677					
Table value t =2.447, n-2=6 at 5% level of significant.							

Source: (Compiled by researcher)



Source: (Interpreted and drown by researcher)

Table 6.55 and Diagram 6.5 shows a Pearson rank correlation analysis was conducted to examine whether there is relationship between teaching with and without ICT.

1). From Table 6.55. The results about opinion of teachers who use ICT for teaching reveal negative relationship between with and without ICT teaching. r(15) = -0.75. The calculated value of $|t| < t6 \ (0.025)$ i.e. (-2.77746 < -2.447). Therefore r is significant and there exist high degree correlation between with and without ICT teaching is in opposite direction. It

means according to ICT users ICT teaching is effective as compare to without ICT teaching.

2). From Table 6.55. The results about opinion of teachers who don't use ICT for teaching reveal no relationship between with and without ICT teaching. r (13) =0.047619. Also, The calculated value |t| < t6 (0.025) for two tailed test i.e. (0.116775<2.447). There is no significant difference between teaching with and without ICT But , low degree correlation exist between with and without ICT teaching is in same direction. It means there is neutral opinion of teachers who doesn't use ICT for teaching about with and without ICT teaching.

Table 6.56 :Correlation between the opinion of teachers who use and who doesn't use ICT for teaching about with ICT and without ICT teaching process								
Teaching Fea	atures	Teachers wh teaching	to use ICT for g (N=15)	T (Statistics)				
		With ICT	Without ICT					
Teachers who doesn't use ICT for teaching	With ICT	0.511905		1.459655				
(N=13)	Without ICT		0.392857	1.046433				
Table value t =2.447, n-2=6 at 5% level of significant.								

Source: (Compiled by researcher)



Table 6.56 and Diagram 6.6 shows a Pearson rank correlation analysis was conducted to examine whether there is relationship between opinion of teachers who use and who doesn't use ICT for teaching about teaching with ICT as well as teaching without ICT.

Teachers who use ICT for teaching and Teacher who doesn't use ICT for teaching: The results of opinion of both types of teachers about with ICT teaching reveal positive relationship ($\mathbf{r} = 0.511905$) The calculated value $|\mathbf{t}| < t8$ (0.025). Hence there is no significance difference between opinions of both type of teachers about ICT teaching, according to both types of teachers ICT teaching has similar effect.

The results of opinion of both types of teachers about without ICT teaching also reveal positive relationship (r = 0.392857). The calculated value |t| < t8 (0.025). Hence there is no significance difference between opinions of both type of teachers about without ICT teaching, according to both types of teachers without ICT teaching has similar effect.

Conclusion

From Table 6.55 and 6.56 there is neutral opinion of teachers who doesn't use ICT for teaching about teaching with and without ICT (From Table 6.55)

According to ICT user, ICT teaching is effective (From Table 6.55), If there is no difference between the opinion of user and non user of ICT about ICT teaching it means both user are agree with effectiveness of ICT in teaching process (From Table 6.56) And if there is neutral opinion of user and non user of ICT about teaching without ICT, it means both users are disagree with effectiveness of teaching without ICT(From Table 6.56).

From above discussion researcher found that ICT user and non user are agree on ICT teaching is effective than teaching without ICT. As a result the teachers who don't use ICT should use ICT for teaching process.

Part -VI

6.2.6 Teachers opinion about learning feature with and without ICT

1. Learning feature of teachers who use ICT for teaching process.

Table 6.57 Opinion of teachers who use ICT for teaching process about learning feature

with ICT

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(N=15)
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S.No	Learning Féâture With ICT	Stiongly Agree	Agree	- Neither Agrée	Disagree	Strongly Disagree		
				Disagree			WA	Rank
1	Students concentrate more on their learning	4	4	3	2	2	3 40	11
2	Students try harder in what they are learning	4	5	2	2	2	3 47	10.5
3	Students understand more easily what they learn	5	5	0	3	2	3 53	9
4	Students remember more easily what they learn	4	6	2	2	1	3.67	6.5
5	Improves the class climate (students more engaged)	4	5	3	2	1	3 60	8
6	Students work independently at their own speed	5	3	3	2	2	3.47	10 5
7	Students work in groups	6	3	2	3	1	3 67	65
8	Students work on exercises or tasks individually	5	4	4	2	0	3 80	4
9	Students give presentations to the whole class	6	3	3	2	1	3.73	5
10	Students reflect on their learning	6	5	3	1	0	4.07	3
11	Students discuss ideas with other students and the teacher	8	6	0	1	0	4 40	2
12	Could facilitate student to access learning material	9	6	0	0	0	4.60	1

Source: (Field Data)

From Table 6.57 Researcher was collecting the data about ICT learning features from teachers who use ICT for teaching. Researcher found that ICT could facilitate student to access learning material, In ICT learning students discuss ideas with other students and the teacher, with the help of ICT students reflect on their learning and In ICT learning students work on exercises or tasks individually, with the help of ICT students give presentations to the whole class, ICT improves the class climate (students are more engaged), In ICT learning students understand more easily what they learn and students concentrate more on

their learning have ranked 1st, 2nd, 3rd, 4th, 5th, 8th, 9th and 11th with weighted mean 4.60, 4.40, 4.07, 3.80, 3.73, 3.60, 3.53 and 3.40 respectively.

Respondents have given 6.5th rank to students work in groups in ICT learning and students remember more easily what they learn through ICT. Also 10.5th rank to students works independently at their own speed and students try harder in what they are learning through ICT. Respondents who used ICT for teaching shown positive attitude towards ICT learning that ICT could' facilitate student to access learning material, In ICT learning students discuss ideas with other students and the teacher, with the help of ICT students reflect on their learning and in ICT learning students work on exercises or tasks individually.

Table 6.58 Opinion of Teachers who use ICT for teaching process about Learning Featurewithout ICT(N=15)

S.No ²	Learning Feature Without	Strongly	Agree	Neither	Disagree	Strongly		
n Anné a dina 19 See and an 19 See an air 19 See an air 19 See an air	ICT	Agiee		Agree nor Disagree		Disagree	ŴA	Rank
1	Students concentrate more on their learning	2	4	2	3	4	2 80	3.5
2	Students try harder in what they are learning	2	4	2	4	3	2 87	2
3	Students understand more casily what they learn	2	2	3	3	5	2 53	6
4	Students remember more easily what they learn	1	2	3	4	5	2 33	85
5	Improves the class climate (students more engaged)	1	I	3	5	5	2.20	10
6	Students work independently at their own speed	3	2	3	3	4	2 80	35
7	Students work in groups	3	3	3	3	3	3 00	1
8	Students work on exercises or tasks individually	2	2	3	5	3	2 67	55
9	Students give presentations to the whole class	1	2	4	2	6	2 33	85
10	Students reflect on their learning	0	1	I	6	7	1 73	115
11	Students discuss ideas with other students and the teacher	2	3	2	4	4	2 67	55
12	Could facilitate student to access learning material	0	0	2	7	6	1 73	11 5

Source: (Field Data)

Researcher collects the data about learning features without ICT from teachers who use ICT for teaching. Researcher found that in traditional learning process students work in groups, students try harder in what they are learning, students understand more easily what

they learn and improves the class climate (students more engaged) have ranked 1st, 2nd, 6th and 10th with weighted mean 3 00, 2.87, 2.53 and 2.20 respectively. Respondents have given 3.5th rank to students work independently at their own speed and students concentrate more on their learning in traditional learning process. 5.5th rank to students works on exercises or tasks individually and students discuss ideas with other students and the teacher through traditional learning 8 5th rank to students remember more easily what they learn and students give presentations to the whole class without ICT and 11.5th rank to student could access learning material and students reflect on their learning by traditional learning process. Table 6 58

2. Learning Feature of Teachers who doesn't use ICT for teaching process.

Table 6.59 Opinion of Teachers who doesn't use ICT for teaching process about LearningFeature with ICT(N=13)

S:No.	- Learning feature With ICT	Ströngly	Agree	Neither	Disagree	Strongly Disagree		, A
1979 - 1997 - 1 1979 - 1997 - 1 1979 - 1997 - 1				nor Disagree			WA	Rank
1	Students concentrate more on their learning	4	3	3	2	1	3 54.	65
2	Students try harder in what they are learning.	4	3	2	2	2	3 38	9
3	Students understand more easily what they learn	5	3	2	2	1	3.69	35
4	Students remember more easily what they learn	4	4	2	2	1	3 62	5
5	Improves the class climate (students more engaged)	3	4	3	2	1	3.46	8
6	Students work independently at their own speed	3	3	3	2	2	3.23	11
7	Students work in groups	2	3	2	3	3	2 85	12
8	Students work on exercises or tasks individually.	4	3	4	2	0	3.69	3.5
9	Students give presentations to the whole class	4	3	3	2	1	3 54	6.5
10	Students reflect on them learning	2	5	3	I	2	3.31	10
11	Students discuss ideas with other students and the teacher	4	6	2	1	0	4 00	2
12	Could facilitate student to access learning material	7	4	2	0	0	4 38	1

Source: (Field Data)

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From Table 6.59 Researcher was collecting the data about ICT learning features from teachers who don't use ICT for teaching Researcher found that ICT could facilitate student to access learning material, in ICT learning students discuss ideas with other students and the teacher, with the help of ICT students remember more easily what they learn, ICT improves the class climate (students more engaged), In ICT learning students try harder what they are learning, Students reflect on their learning, Students work independently at their own speed and students work in groups have ranked 1st, 2nd, 5th, 8th, 9th, 10th, 11th and 12th with weighted mean 4.38, 4.00, 3 62, 3.46, 3.38, 3.31, 3.23 and 2.85 respectively. Respondents have given 3 5th tank to students understood more easily what they learn and students work on exercises or tasks individually in ICT learning process. Also 6.5th rank to students concentrates more on their learning and students give presentations to the whole class through ICT. Respondents who doesn't used ICT for teaching shown positive attitude towards ICT learning that ICT facilitate the student to access learning material, In ICT learning students discuss ideas with other students and the teacher, Students work on exercises or tasks individually and Students understand more easily what they learn.

Table 6.60 Opinion of Teachers who doesn't use ICT for teaching process about LearningFeature without ICT(N=13)

S.No L	Eearning Feature Without	Strongly Agree	Agree	Neither Agree	Disagree	Strongly Disagree		
				nor Disagree			WA	Rank
1	Students concentrate more on their learning	2	4	2	2	3	3 00	25
2	Students try harder in what they are learning	2	4	4	2	1	3.31	1
3	Students understand more easily what they learn.	2	2	3	3	3	2.77	6
4	Students remember more easily what they learn	1	2	1	4	5	2 23	10.5
5	Improves the class climate (students more engaged)	1	1	3	3	5	2 23	10 5
6	Students work independently at their own speed	3	2	3	2	3	3 00	25
7	Students work in groups	2	3	3	2	3	2 92	4
8	Students work on exercises of tasks individually	2	2	2	4	3	2 69	7
9	Students give presentations to the whole class.	l	3	4	3	2	2.85	5

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10	Students reflect on their learning	2	1	2	4	4	2 46	85
11	Students discuss ideas with othei students and the teacher	2	1	2	4	4	2 46	85
12	Could facilitate student to access learning material	0	0	0	6	7	1 46	12

Source: (Field Data)

From Table 6.60. Researcher was collecting the data about learning features without ICT from teachers who don't use ICT for teaching. Researcher found that without ICT Students try harder in what they are learning, Students work in groups, Students give presentations to the whole class, Students understand more easily what they learn, Students work on exercises or tasks individually and without ICT student could access learning material have ranked 1st, 4th, 5th, 6th, 7th and 12th with weighted mean 3.31, 2.92, 2.85, 2.77, 2.69 and 1.46 respectively.

Respondents have given 2 5th rank to traditional learning concentrate more on learning. And traditional learning process improves the work in group attitude.8.5th rank have given to students reflect on their learning and students discuss ideas with other students and the teacher in traditional learning that is without ICT learning process. And 10.5th rank to the students remembers more easily what they learn and improves the class climate (students more engaged) without ICT learning process

Respondents who doesn't used ICT for teaching shown negative attitude towards learning without ICT that the without ICT student could access learning material, Students remembers more easily what they learn and improves the class climate (students more engaged) through without ICT learning process.

Table 6.61 : Correlation between the opinion of teachers who use and who doesn't									
use ICT for teaching about Learning Features with and without ICT									
Learning Features	With and without -	T (Statistics)							
•	ICT								
Teachers who use ICT for teaching (N=15)	-0.52797	-1.96594							
Teachers who doesn't use ICT for teaching (N=13)	-0.54371	-2.04861							
Table value t =2.228, n-2=10 at 5%	level of significant.								
Source: (Compiled by researcher)									



Table 6.61 and diagram 6.7 shows a Pearson rank correlation analysis was conducted to examine whether there is relationship between learning with ICT and learning without ICT. **Teachers who use ICT for teaching and Teacher who doesn't use ICT for teaching:** The results about opinion of both types of teachers reveal negative relationship between with and without ICT learning. Also, The calculated value |t| > t10 (0.025). Therefore r is not significant. But there is high degree correlation between with and without ICT learning is in opposite direction .It means according both types of teachers ICT learning is effective as compare to learning without ICT

Table 6.62 : Correlation between the opinion of teachers who use and who doesn't use ICT for teaching about Learning Features with ICT and without ICT								
Learning Fe	atures	Teachers wh teachin	T (Statistics)					
		With ICT	Without ICT					
Teachers who doesn't use ICT for	With ICT	0.513986		1.894811				
teaching (N=13)	Without ICT		0.816434	4.471101				
Table value t =2.228, n-2=10 at 5% level of significant.								
Sources (Commiled by								

Source: (Compiled by researcher)



Table 6.62 and Diagram 6.8 shows a Pearson rank correlation analysis was conducted to examine whether there is relationship between opinion of teachers who use and who doesn't use ICT for teaching about learning with ICT as well as learning without ICT.

Teachers who use ICT for teaching and Teacher who doesn't use ICT for teaching: The results of opinion of both types of teachers about with ICT learning reveal positive relationship (r = 0.513986). The calculated value |t| < t10 (0.025). Hence there is no significance difference between opinions of both type for teachers about ICT learning, according to both types of teachers ICT learning has similar effect.

The results of opinion of both types of teachers about without ICT learning also reveal positive relationship (r = 0.816434). The calculated value |t| > t10 (0.025). Hence there is significance difference between opinions of both type for teachers about without ICT learning, according to both types of teachers without ICT learning has different effect.

Conclusion

Table 6.61 shows according to teachers who use and who doesn't use ICT for teaching: ICT learning is effective as compare to learning without ICT

From Table 6.62 it is observed that there is agreement similar opinion about the consequences of using ICT in learning process among the user and non user of ICT, where as similarity of opinion are observed about benefits of using ICT in learning and differences of opinion are observed about learning without ICT among user and non user of ICT. From above discussion researcher found that ICT learning is effective than learning without ICT, as a result the management colleges and institution should provide sufficient ICT infrastructures to the students for learning process Teachers who don't use ICT for teaching; it will change classroom teaching towards the more learner-centric education system.

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Part VII

A: ICT reduces teaching time.

When researcher asked question to the teachers about time required for one lesson preparation by traditional method and ICT methods and also time required for delivering the same lesson before the target class. Researcher were collect responses about teaching time is as follows (Table.6.63, 6.65)

Time required for lesson preparation.	For Black I	Board Teaching	For ICT teaching			
	Responses	%	Responses	%		
0-1 Hr.	7	25.0	1	3.6		
1-2 Hr.	14	50 0	3	10.7		
2-3 Hr.	4	143	10	35.7		
More than 3 Hr.	3	10.7	14	50.0		
Total number of teachers (N=28)						

Table.6.63 Time required for lesson preparation

Source: (Field Data)

Researcher was found that 25% teachers required only 0 to 1 hours and 50% teachers required 1 to 2 hours for lesson preparation for traditional black board teaching. Only 25% teachers required 2 to more than 3 hours for lesson preparation. At the same time only 3.6% teachers required 0 to 1 hours, 107% teacher required 1 to 2 hours and 85.7% teachers required 2 to more than 3 hours for lesson preparation for ICT teaching. From this survey researcher was found that time required for lesson preparation for ICT teaching is more than time required for traditional black board teaching process. (Table 6.63) also difference between time required for lesson preparation for Black Board Teaching and ICT teaching is high as shown in Table 6.64

Time Required	Black Board	ICT Teaching	Difference between Time Required						
for lesson ,	Teaching		for lesson preparation (Black Board						
preparation.			Teaching - ICT teaching)						
	Responses	Responses							
0-1 Hr.	7	1	6						
1-2 Hr.	14	3	11						
2-3 Hr.	4 .	10	6						
More than 3 Hr.	3	14	11						
Total number of teachers (N=28)									

Table 6.64 Difference between Time required for lesson preparation (Black Board Teaching - ICT teaching)

Table.6.65 Time required for lesson Delivery

Time Required for lesson	Black Boar	rd Teaching	ICT teaching					
Delivery.								
	Responses	%	Responses	%				
0-1 Hr.	2	7.1	12	42.9				
1-2 Hr.	8	28.6	9	32.1				
2-3 Hr.	9	32.1	4	14.3				
More than 3 Hr.	9	32.1	3	10.7				
Total number of teachers (N=28)								

Source. (Field Data)

Above table shows that time required for lesson delivery (Table 6.65). 7.1% teacher required 0 to 1 hours, 28.6% teachers required 1 to 2 hours and 64.2% teacher required 2 to more than 3 hours for lesson delivery through black board teaching. And 42.9% teacher required 0 to 1 hours, 32. 1% teachers required 1 to 2 hours, 25% teachers required 2 to more than 3 hours for lesson delivery through ICT teaching process. from this survey researcher was conclude that time required for lesson delivery through traditional black board teaching process is less than time required for lesson delivery through traditional black board teaching process. Also difference between time required for lesson delivery through Black Board teaching and ICT teaching is high as shown in Table 6.66

Table 6 66 Difference between Time required for lesson delivery (Black Board Teaching - ICT teaching)

Time Required for	Black Board	ICT Teaching	Difference between Time						
lesson Delivery.	Teaching		Required for lesson Delivery						
			(Black Board Teaching - ICT						
	Responses	Responses	teaching)						
0-1 Hr.	2	12	10						
1-2 Hr.	8	9	1						
2-3 Hr.	9	4	5						
More than 3 Hr.	9	3	6						
Total number of teachers (N=28)									

Table 6.67 Teacher's opinion about ICT reduces the teaching time

C			Agree		Neither agree Nor disagree		Disagree	
No	Number of Sample (N=28)		%		%		%	
1	ICT Reduce time required for writing content on the board	21	75	2	7.1	5	17.9	
2	If once digital lesson created, no time required for preparing same lesson again	16	57.1	8	28.6	4	14.3	
3	You can send your digital material to your student at any time and any where.	27	96.4	1	3.6	0	0	

Source: (Field Data)

From (Table 6.67) researcher was found that 75% teachers agree that ICT reduce the time required for writing content on black board. 57.1% teachers agree on the digital lesson created by teachers, doesn't required time for preparing again and again whenever they teach the same lesson in the target class.96 4% teachers agree that they can send their own created digital material to their student at anytime and anywhere.

Conclusion

From (Table 6.63, 6.65, 6.67), researcher was conclude that time required for lesson preparation for ICT teaching is more but lesson delivery time is less as compare to black board teaching. If once teacher create their own digital teaching material, they won't

required time for preparing same lesson again and again, they can send these teaching material to their student at anytime and anywhere, that is ICT teaching material created by once can be used again and again whenever required without wasting time. Finally researcher concludes that the ICT reduce teaching time.

**Hypothesis H3: ICT reduces teaching time. Is accepted

B: ICT reduces learning time.

Researcher was collected data from under graduate and post graduate students. Under graduate students covered from BCA, BBA and B Com courses and post graduate students from MBA, MCA and M.Com courses.

a) U.G. student's opinion about ICT reduces learning time.

a.1) BCA student's opinion about ICT reduces learning time

Table 6 68 BCA	student's	oninion	about ICT	reduces	learning time
Table 0.00 DCA	student 3	opinion	about ic i	roquees	rearning time

	ICT teaching reduce learning time								
s 5	BCA students (N=60)		,	Neithei				۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰ ۲۰۰	
	· · · · · · · · ·	Strongly	Disagree -	Disagree Nor Agree	Agree	Strongly Agree	Mean	Rank	
1	Understand more easily what you learned	5	7	5	31	12	3.6	3	
2.	Remember more easily what you learned.	7	7	11	19	16	3.5	1.5	
3	Access learning material from anywhere and								
	anytime.	7	5	10	27	11	3.5	1.5	

Source: (Field Data)

Table 6.69 BCA student's opinion about Black board teaching reduce learning time

	Black board teaching reduce learning time									
, *	BCA students (N=60)	St	~	Neithei ,	· *.	Characteria				
		Disagree	Disagiee	Agree	Agree .	Agree	Mean	Rank		
1	Understand more easily									
	what you learned	20	11	9	10	10	27	1		
2.	Remember more easily									
	what you learned.	25	16	10	6	3	21	3		
3	Access learning material									
	from anywhere and									
	anytime.	21	22	8	2	7	2.2	2		
~										

Source (Field Data)

During survey, researcher found that Rank Correlation coefficient of BCA students between ICT teachings reduces learning time and black board teaching reduces learning time is (p=-0.75) that is highly negative correlation was found (from Table 6.68, 6.69)

a.2) BBA student's opinion about ICT reduces learning time

Table 6 70 BRA	student's	opinion	about ICT	reduces	learning time
TAULE U. TU DDA	student s	opmon	about ICT	rouucos	ioannig unio

	ICT teaching reduce learning time								
	BBA students (N=70)	Stiongly Disagree	Disagree	Neithei Disagree Nor Agree	Agree	Strongly	Mean	Rank	
1.	Understand more easily what you learned	6	10	0	44	10	3.6	2	
2.	Remember more easily what you learned.	4	17	1	42	6	34	3	
3.	Access learning material from anywhere and anytime	1	12	-	46	10	3.7	1	

Source: (Field Data)

Table 6.71 BBA student's opinion about Black board teaching reduce learning time

	Black board teaching reduce learning time								
* - * *	BBA students (N=70)	Strongly Disagree	Disagiee	Neithei Disagiee Noi Agiee	Agree	Strongly Agree	Mean	Rânk	
1	Understand more easily what you learned	40	15	1	9	5	1.9	3	
2	Remember more easily what you learned.	30	22	5	5	8	2.1	1	
3.	Access learning material from anywhere and anytime	26	33	2	6	3	2.0	2	

Source: (Field Data)

Rank Correlation coefficient of BBA students between ICT teachings reduces learning time and black board teaching reduces learning time is (p=-0.5) .that is highly negative correlation was found (from Table 6 70, 6 71)

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a.3) B.Com student's opinion about IC1 reduces learning time

Table 6.72 B.Com	student's	opinion	about IC1	reduces	learning time
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	ICT teaching reduce learning time								
*)	B Com students (N=40)	Strongly Disagree	Disagree	Neithei Disagree Noi Agree	Agree	Strongly Agree		Rank	
1.	Understand more easily what you learned	4	5	4	21	6	35	2	
2	Remember more easily what you learned	6	5	10	8	11	3.3	3	
3	Access learning material from anywhere and anytime.	3	4	2	19	12	38	1	

Source: (Field Data)

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Table 6.73 B.Com student's opinion about Black board teaching reduce learning time

	Black board teaching reduce learning time										
B.Com students (N = 40)		Stiongly Disagree	Disagree	Norther Disagree Nor Agree	Agree	Strongly: Agree	Mean	Rank a			
1	Understand more easily what you learned	14	11	5	6	4	2.4	3			
2	Remember ^a more easily what you learned	9	10	8	6	7	28	1			
3.	Access learning material from anywhere and anytime.	15	9	3	8	5	2.5	2			

Source[•] (Field Data)

Rank Correlation coefficient of B.Com students between ICT teachings reduces learning time and black board teaching reduces learning time is (p=-0.5) .that is highly negative correlation was found (from Table 6.72, 6.73)

b) P.G. student's opinion about ICT reduces learning time.

b.1) MCA student's opinion about ICT reduces learning time

Table 6.74 MCA student's opinion about ICT reduces learning time

	ICT teaching reduce learning time										
* * *	MCA students (N=40)	Strongly Disagree	Disagiee	Neithei Disagree Noi Agree	Agree	Strongly	Mean	Rank			
1.	Understand more easily what you learned	2	5	4	18	11	3.8	1			
2.	Remember more easily what you learned.	4	4	8	12	12	、 36	3			
3	Access learning material from anywhere and anytime	3	4	5	17	11	3.7	2			

Source: (Field Data)

Table 6.75 MCA student's opinion about Black board teaching reduce learning time

	Black board teaching reduce learning time										
5 ~ ~ ~ ~ ~ ~ ~	MCA students (N=40)	Strongly Disagree	, Disagree	Neither Disagree Noi ' Agree	Agree	Strongly Agrèe	· Meaň	Rank			
1.	Understand more easily what you learned.	16	10	5	5	4	2.3	25			
2.	Remember more easily what you learned	8	21	3	3	5	2.4	1			
3.	Access learning material from anywhere and anytime.	15	12	3	5	5	2.3	2.5			

Source: (Field Data)

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During survey, researcher found that Rank Correlation coefficient of MCA students between ICT teachings reduces learning time and black board teaching reduces learning time is (p= -0.75) .that is highly negative correlation was found (from Table 6.74, 6.75)

b 2) MBA student's opinion about ICT reduces learning time

	ICT teaching reduce learning time											
, ^, ,	MBA students (N=50)	Strongly Disagree	Disagiec	Neithei Disagiee Noi Agree	Agree	Strongly Agree	Meaň	***Rank				
1	Understand more easily what you learned	7	9	4	20	10	33	2.5				
2	Remember more easily what you learned	9	7	9	11	14	3.3	2 5				
3.	Access learning material from anywhere and anytime.	3	5	4 *	19	19	3.9	1				

Table 6.76 MBA student's opinion about ICT reduces learning time

Source: (Field Data)

Table 6.77 MBA student's opinion about Black board teaching reduce learning time

	E	Black board	teaching re	duce learnir	ng time			
MBĂ	students (N=50)	Stiongly Disagiee	Disagree	Neither Disagree Noi Agree	Agiee	Strongly Agree	Mean	Rank
1.	Understand more easily what you learned.	15	13	9	7	6	2.5	3
2	Remember more easily what you learned.	9	14	9	8	10	29	1.5
3	Access learning material from anywhere and anytime	12	[]	9	8	10	2.9	15

Source: (Field Data)

Rank Correlation coefficient of MBA students between ICT teachings reduces learning time and black board teaching reduces learning time is (p=0.5) that is highly positive correlation was found (from Table 6.76, 6.77).

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b.3) M.Com student's opinion about ICT reduces learning time

Table 6.78 M.Com student's opinion about ICT reduces learning time

	ICT teaching reduce learning time										
* ,] *	M.Com students (N=40)	, Stiongly Disagiee	Disagree	Neither Disagiee Nor. Agiee	Agree	Strongly	•Mean	Rank _E			
1	Understand more easily what you learned	4	5	4	21	6	35	3			
2.	Remember more easily what you learned.	2	2 .	11	13	12	3.8	2			
3.	Access learning material from anywhere and anytime.	1	l	0	27	11	4.2	1			

Source: (Field Data)

Table 6.79 M.Com student's opinion about Black board teaching reduce learning time

	I	Black board	teaching re	duce learnn	ng time			<u> </u>
- , - ,	M Com students (N=40)	Strònglý Disagree	Disagree	Neithei Disagree Noi Agree	Agree	Strongly Agree	Mean	Rank
1	Understand more easily what you learned.	18	11	5	4	2	2.0	3
2	Remember more easily what you learned.	16	12	5	2	5	2.2	1.5
3	Access learning material from anywhere and anytime	15	12	6	3	4	2.2	1.5

Source: (Field Data)

Rank Correlation coefficient of M.Com students between ICT teachings reduces learning time and black board teaching reduces learning time is (p= 0.75) .that is highly positive correlation was found (from Table 6.78, 6.79)

H4: ICT reduces learning time (from Student's opinion)

During survey, researcher was found that only BCA and MCA students use ICT lab more than other student's i.e.6 hours in a week.BBA and MBA student use ICT lab only for 2 hours in a week. B.Com and M.Com student never use ICT lab for teaching and learning process, they used ICT lab only for preparing seminar and presentation whenever required.

	Table 6.80	0 Correlation	s : ICT redu	ces learning time)
<u></u>		Total numbe	r of sample (I	N≕300)	
C	Class	No. of Students	Percentag e (%)	Institution Provide ICT lab (Weekly)	Rank Correlation coefficient (P)
	BCA	60	20.00	6 Hr.	-0.75
	BBA	70	23.33	2 Hr.	-0.5
UG	B.Com	B.Com 40		As per requirement ~ 1 Hr.	-0.5
	Total	170	56.67		
	MCA	40	13.33	6 Hr.	-0.75
	MBA	50	16.67	2 Hr.	0.5
PG	M.Com	40	13.33	As per requirement ~ 1 Hr.	0.75
	Total	130	43 33		

Table value |t|=12.706, n-2=1 at 5% level of significant.

Source: (Compile by researcher)

Table 6.80 shows a Pearson rank correlation analysis to examine whether there is relationship between ICT learning time and non ICT (Traditional learning) learning time.



The result reveals negative relationship between opinion of BCA, MCA, BBA and B.Com students about ICT reduces the learning time It means ICT reduces learning time as compare to without ICT (Traditional) learning Calculated value of t is greater than table value (t > |t|) therefore r is not significant for computer oriented (BCA and MCA), BBA and B.Com courses.

The result reveals high degree positive correlation between opinion of MBA and M.Com students about ICT reduce the learning time it means both types of learning required similar learning time and calculated t is less than table value (t < |t|) therefore r is not significant.

From Table 6.80 it is observed that there is agreement similar opinion of BCA and MCA students about ICT reduces learning time, BCA and MCA students use ICT lab more than other student's i.e.6 hours in a week because they have an IT subjects and most of the time teachers teaches them with ICT. They always use online digital learning material, online coding from internet therefore according to them ICT reduces learning time. BBA and B.Com students' have similar opinion about ICT reduces learning time, BBA students use ICT lab for 2 hr. in a week and B.Com students rarely use ICT lab for making presentation, MBA and M.Com students have similar opinion MBA students use ICT lab for 2 hr. in a week and B.Com students and M.Com students have similar opinion MBA students use ICT lab for 2 hr. in a week and M.Com students use rarely MBA and M.Com students opinion students use rarely mean and most of the required compulsory ICT lab, but they may have a presentation and seminar, whenever they have assignment of presentation or seminar, as per requirement they uses ICT lab for making presentation. According to them, ICT learning and traditional learning process takes similar time From above discussion researcher found that ICT reduces learning time, as a result the management colleges and institution should provide sufficient ICT infrastructures to the

students for learning process Every student should use ICT lab for weekly 6 hr.

Part- VIII

1. Student's opinion about learning feature with and without ICT

Researcher was collected data from under graduate and post graduate students. Under graduate students covered from BCA, BBA and B Com courses and post graduate students from MBA, MCA and M.Com courses.

a) U.G. student's opinion about learning feature with and without ICT.

a.1) BCA student's opinion about Learning Feature with and without ICT

S:No	Learning Feature With	Strongly	Agree	Neither	Disagree	Strongly Disagree		
				nor Disägree		Jongice	WA	Rank
1	Students concentrate more on their learning	21	13	5	10	11	3.38	9
2	Students try harder in what they are learning.	24	15	6	12	3	3.75	5
3	Students understand more easily what they learn.	21	12	6	5	16	3 28	10
4	Students remember more easily what they learn.	9	21	9	9	12	3.10	12
r5	Improves the class climate (students more engaged).	19	19	6	6	10	3.52	8
6	Students work independently at their own speed.	22	15	9	7	7	3.63	6
7	Students work in groups	17	14	9	8	12	3.27	11
8	Students work on exercises or tasks individually.	20	18	5	8	9	3.53	7
9	Students give presentations to the whole class	15	32	3	6	4	3.80	4
10	Students reflect on their learning.	27	18 '	3	5	7	3 88	2
11	Students discuss ideas with other students and the teacher	21	29	2	4	4	3.98	1
12	Could facilitate student to access learning material	26	18	2	8	6	3 83	3

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Table 6.81 BCA student's of	pinion about Learning	Feature with ICT (N=60)
		, ,	

Source: (Field Data)

Table 6.81. Respondents of BCA course shown positive attitude towards ICT learning that ICT could facilitate student to access learning material, In ICT learning students discuss ideas with other students and the teacher, students reflect on their learning, students give presentations to the whole class and students try harder in what they are learning.

S:No	Learning Feature Without	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree		
				nor Disagree		р. на р. На р. на р	WA	Rank
1	Students concentrate more on							
	their learning	10	13	6	18	13	2.82	1
2	Students try harder in what							
	they are learning	13	9	6	14	18	2.75	2
3	Students understand more							
	easily what they learn	12	5	5	23	15	2.60	3
4	Students remember more							
	easily what they learn.	6	5	13	18	18	2 38	4
5	Improves the class climate							
	(students more engaged)	7	5	7	20	21	2 28	5.5
6	Students work independently			<u>_</u>				
	at their own speed	6	8	8	13	25	2.28	5.5
7	Students work in groups	5	4	7	24	20	2.17	7
8	Students work on exercises			·····				
	or tasks individually	7	3	11	10	29	2.15	8
9	Students give presentations			1				
	to the whole class	4	6	5	22	23	2.10	9
10	Students reflect on their							
	learning	2	3	6	24	25	1 88	10
11	Students discuss ideas with							
	other students and the	2	2	2	26	27	1 70	115
		4	د	<u> </u>	20	21	1/8	11.5
12	Could facilitate student to	2		2	20	22	1 70	11.5
	access learning material	<u></u>		2	52	23	1/8	11.5

Table 6.82 BCA	student's opinion	about Learning	Feature without	ICT (N=60)
		0		````

Source: (Field Data)

Respondents of BCA course shown negative attitude towards learning without ICT i.e. in traditional learning students discuss ideas with other students and the teacher, it could facilitate student to access learning material, students reflect on their learning, students give presentations to the whole class as shown in Table 6 82

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a.2) BBA student's opinion about Learning Feature with and Without ICT

Table 6.83 BBA	student's opini	on about Learning	Feature with ICT	(N=70)
			· · · · · · · · · · · · · · · · · · ·	(- · · -)

S.No	Learning Feature With	Strongly	Agree	Neither	Disagree	Strongly		
				Disagree		Disagree	WA	Rank
1	Students concentrate more on their learning	12	32	9	9	8	3 44	5.5
2	Students try harder in what they are learning	13	20	10	12	15	3 06	10
3	Students understand more easily what they learn	21	15	11	11	12	3.31	8
4	Students remember more easily what they learn.	16	15	12	15	12	3.11	9
5	Improves the class climate (students more engaged).	19	22	9	11	9	3.44	5.5
6	Students work independently at their own speed.	22	21	9	12	6	3 59	3
7	Students work in groups.	10	22	9	15	14	2 99	12
8	Students work on exercises or tasks individually.	20	21	12	9	8	3.51	4
9	Students give presentations to the whole class	25	23	9	6	7	3 76	2
10	Students reflect on their learning	15	18	9	11	17	3.04	11
11	Students discuss ideas with other students and the teacher	33	24	7	4	2	4 17	1
12	Could facilitate student to access learning material	16	24	13	8	9	3.43	7

Source: (Field Data)

Table 6.83. Respondents of BBA course shown positive attitude towards ICT in learning process i.e. In ICT learning students discuss ideas with other students and the teacher,

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students work independently at their own speed. Students work on exercises or tasks individually. And students reflect on their learning

S.No-	Learning Feature	Strongly	Âgree	Neither	Disagree	Strongly		
	Without ICT	Agree		Agree	in Salt	Disagree		
				nor Disagree			WA	Rank
1	Students concentrate more	13	12	10	19	16	2.81	1
2	Students try harder in what they are learning	10	6	8	21	25	2.36	9
3	Students understand more easily what they learn	9	9	11	22	19	2.53	5
4	Students romember more easily what they learn.	12	12	1	29	16	2.64	4
5	Improves the class climate (students more engaged)	11	4	13	24	18	2.51	6
6	Students work independently at their own speed.	9	12	3	27	19	2 50	7
7	Students work in groups.	13	11	3	28	15	2.70	3
8	Students work on exercises or tasks individually	10	9	8	21	22	2.49	8
9	Students give presentations to the whole class	6	9	12	14	29	2 27	10
10	Students reflect on then learning.	12	15	4	19	20	2.71	2
11	Students discuss ideas with other students and the teacher.	2	4	9	35	20	2.04	12
12	Could facilitate student to access learning material	5	9	6	25	25	2.20	11

Table 6.84 BBA student'	s opinion	about	Learning	Гeature	without	ICT	(N=70)
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Source: (Field Data)

Respondents of BBA course shown negative attitude towards learning without ICT i.e. students try harder in what they are learning without ICT and students concentrate more on their learning without ICT as shown in Table 6 84

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a 3) B.Com student's opinion about Learning Feature with and Without ICT

Table 6.85 B.Com student's	opinion about Learning	Feature with ICT (N=40)
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S.No.	Learning Feature With	Strongly	Agree	Neither	Disagree	Strongly		
		Agree		Agree		Disagree		
			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Disagree			WA	Rank
1	Students concentrate more on their learning.	10	15	5	6	4	3.53	11
2	Students try harder in what they are learning.	9	16	4	5	6	3.43	12
3	Students understand more easily what they learn	13	[1	6	7	3	3 60	8
4	Students remember more easily what they learn	15	8	6	7	4	3.58	9
5	Improves the class climate (students more engaged)	18	15	3	2	2	4.13	1
6	Students work independently at their own speed.	21	6	6	3	4	3.93	35
7	Students work in groups.	14	16	5	2	3	3.90	5
8	Students work on exercises or tasks individually.	11	14	7	3	5	3.58	10
9	Students give presentations to the whole class	16	11	5	6	2	3.83	6
10	Students reflect on their learning.	10	24	6	0	0	4.10	2
11	Students discuss ideas with other students and the teacher	13	13	5	5	4	3 65	7
12	Could facilitate student to access learning material	17	13	3	4	3	3 93	35

Source: (Field Data)

Respondents of B.Com course shown positive attitude towards ICT learning that ICT improves the class climate (students more engaged) ICT could facilitate student to access learning material, students reflect on their learning, students work independently at their own speed as shown in Table 6.86

S.No	Learning Feature	Strongly	Agree	Neither	Disagree	Strongly		
	-Without ICT	Agree	the states	Agree		Disagree		
			م ایر کر مار مراجع کر ا	Disagree			WA	Rank
1	Students concentrate more on their learning.	2	2	1	19	16	1.88	11
2	Students try harder in what they are learning	2	2	4	16	16	1 95	10
3	Students understand more easily what they learn	I	1	1	23	14	1 80	12
4	Students remember more easily what they learn	4	4	2	25	5	2.43	4
5	Improves the class climate (students more engaged)	7	3	4	16	10	2.53	3
6	Students work independently at their own speed	4	2	4	21	9	2.28	7
7	Students work in groups	5	4	I	15	15	2.23	8
8	Students work on exercises or tasks individually	3	2	4	13	18	1.98	9
9	Students give presentations to the whole class	5	3	7	12	13	2.38	6
10	Students reflect on their learning	10	5	2	10	13	2.73	1
11	Students discuss ideas with other students and the teacher	6	4	2	16	12	2.40	5
12	Could facilitate student to access learning material	5	9	2	15	9	2.65	2

Table 6.86 B.Com student's opinion about Learning Feature without ICT (N=40)

Source: (Field Data)

Respondents of B.Com course shown negative attitude towards learning without ICT i.e. students try harder in what they are learning without ICT, students concentrate more on their learning without ICT and students understand more easily what they learn as shown in Table 6.86

b) P.G. student's opinion about Learning Feature with and Without ICT.

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b.1) MCA student's opinion about Learning Feature with and Without ICT

S.No	Learning Feature With	Strongly	Ågree	Néithér	Disagree	Strongly		
	ૢ૱૱ૣૺૼૡૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ	Agree		Agree		Disagree		
				Disagree			WA	Ránk.
1	Students concentrate more							
	on their learning	12	12	5	5	6	3.48	12
2	Students try harder m					_		
	what they are learning.	13	14	4	5	4	3.68	9.5
3	Students understand more easily what they learn.	11	14	6	4	5	3.55	11
4	Students remember more							
	easily what they learn.	15	11	4	6	4	3.68	9.5
5	Improves the class climate							
	(students more engaged)	20	11	3	4	2	4.08	4
6	Students work							
	speed speed	21	6	5	4	4	3.90	6
7	Students work in groups.	18	12	5	2	3	4.00	5
8	Students work on							
Ū	exercises or tasks							
	indıvıdually.	15	21	1	2	1	4.18	2
9	Students give							
	presentations to the whole	15	13	3	5	4	3 75	8
10	Students reflect on theu						5.75	
10	learning.	12	17	6	4	1	3 88	7
11	Students discuss ideas							
	with other students and the							
	teacher.	23	16	0	<u> </u>	0	4.53	
12	Could facilitate student to	14	21	2	, I	2	4.10	2
	access rearning material	14	<u></u>	<u> </u>	1 1	L <u> </u>	4 10	<u> </u>

Table 6.87 MCA student's	opinion about	Learning Feature	with ICT	(N=40)
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Source: (Field Data)

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Respondents of MCA course shown positive attitude towards ICT learning that ICT improves the class climate (students more engaged). ICT could facilitate student to access learning material, students work on exercises or tasks individually and students discuss ideas with other students and the teacher As shown in Table 6 87

S:No	Learning Feature	Strongly	Agree :	Neither	Disagree	Strongly		
	Without ICT	Agree		Agree		Disagree		
			17 7	<u>Disagree</u>	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		WA	Rank
1	Students concentrate more							
	on their learning	8	5	5	11	11	2 70	1
2	Students try harder in							-
	what they are learning	6	4	8	14	8	2.65	2
3	Students understand more				1.5	<u>^</u>	0.50	
	easily what they learn	6	4	6	15	9	2.58	3
4	Students remember more	-	2			-	0.55	
	easily what they learn	3		0	21	2	2.55	4
5	Improves the class climate	6	4	2	15	12	2.20	~
	(students more engaged).	0	4	2	15	15	2.38	0
6	Students work							
	speed.	5	6	3	17	9	2.53	5
7	Students work in groups	3	2	1	19	15	1.98	10
8	Students work on			5				· · · · · · · · · · · · · · · · · · ·
	exercises or tasks							
	individually.	5	2	6	13	14	2.28	7
9	Students give	•						
	presentations to the whole					1		
	class	4	4	3	14	15	2.20	8
10	Students reflect on their	-						
	learning	2	3	0	19	16	1.90	11
11	Students discuss ideas				-			
	with other students and the	2	1	2	25	10	2.00	0
	teacher.	4			23	10	2.00	<u>у</u>
12	Could facilitate student to	0			20	10	1.00	10
	access learning material	U	<u> </u>			18	1.03	12

Table 6.88 MCA student's opinion about Learning Feature without ICT (N=40)

Source: (Field Data)

Respondents of MCA course shown negative attitude towards learning without ICT i.e. without ICT students reflect on their learning, in traditional learning process students work in groups. And traditional learning could facilitate student to access learning material, students discuss ideas with other students and the teacher as shown in Table 6.88

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b.2) MBA student's opinion about Learning Feature with and Without ICT

S.No.	Learning Feature With	Strongly	Agree	Neither	Disagree	Strongly		
	ICT	Agree		Agree		Disagree	and the second secon Second second s	
N YAYAY		Stoff and the	,	Disagree			WA-	Rank
1	Students concentrate more							
	on their learning	12	13	6	9	10	3.16	8.5
2	Students try harder in what they are learning	14	13	8	11	Δ	3 44	1
	What they are rearring	17	1.5				J.77	
3	easily what they learn	16	12	6	5	11	3.34	2
4	Students remember more							
	easily what they learn	9	15	7	9	10	3.08	10.5
5	Improves the class climate							
	(students more engaged)	10	12	9	10	9	3.08	10.5
6	Students work							
	independently at their own speed	12	1	9	11	7	3 20	6
7	Students work in groups	12	12	7	10	9	3.16	8.5
8	Students work on							
	exercises or tasks							
	individually.	13	9	12	9	7	3.24	3.5
9	Students give							
	presentations to the whole	7	14	11	10	8	3.04	12
10	Students reflect on their					ļ	5.01	12
10	learning	13	12	7	9	9	3.22	5
11	Students discuss ideas							
	with other students and the	12		0	0			
	teacher.	13	12	8	8	9	3.24	3.5
12	Could facilitate student to		1.2	0	0		2.10	
L	access learning material		13	<u> </u>	<u>8</u>	<u> </u>	1 3 18	1

Table 6 80 MDA	atudant'a	oninion	about	Loorpupor	Footuro	with	ICT	AI-50	5
LAUIC 0.09 WIDA	student s	spinion	about	Leanning	reature	WILLI	i C I	(11~50	J

Source: (Field Data)

Respondents of MBA course shown positive attitude towards ICT learning i.e. In ICT learning students try harder in what they are learning, students understand more easily what they learn. Students work on exercises or tasks individually and students discuss ideas with other students and the teacher as shown in Table 6.89

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S.No	Learning Feature	Strongly	Agree	Neither	Disagree	Strongly		
	Witbout ICT	Agree		Agree		Disagree		
				-Disagree		and a start	WA	Rank
1	Students concentrate more	8	12	6	10	14	2.80	55
2	Students try harder in what they are learning	9	9	6	11	15	2.72	85
3	Students understand more easily what they learn	12	5	5	13	15	2 72	85
4 _	Students remember more easily what they learn	8	9	9	13	11	2.80	5.5
5	Improves the class climate (students more engaged)	9	9	9	11	12	2 84	4
6	Students work independently at then own speed	10	8	11	9	12	2.90	2
7	Students work in groups	9	11	9	10	11	2.94	1
8	Students work on exercises or tasks individually	8	8	11	9	14	2.74	7
9	Students give presentations to the whole class.	8	11	9	10	12	2.86	3
10	Students reflect on theu learning	7	8	7	18	10	2 68	10
11	Students discuss ideas with other students and the teacher.	6	8	10	11	15	2.58	11
12	Could facilitate student to access learning material	4	6	6	18	16	2.28	12

Table 6.90 MBA student's opinion about Learning Feature without ICT (N=50)

Source: (Field Data)

Respondents of MBA course shown negative attitude towards learning without ICT i.e. without ICT students reflect on their learning, traditional learning could facilitate student to access learning material and students discuss ideas with other students and the teacher as shown in Table 6.90

b.3) M.Com student's opinion about Learning Feature with and Without ICT

Table 6.91M.Com studen	t's opinion about	Learning Feature	with ICT (N=40)
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-S.No	Learning Feature With	Strongly	Agree	Neither ·	Disagree	Strongly		
,	JCT-	Agree	4	Agrèe	andra (Salaha) Salahan	Disagree		i i i i i i i i i i i i i i i i i i i
د می ^ر میریش روب		**	*	nor Disagree			WA	Ránk
1	Students concentrate more on their learning	10	15	5	6	4	3 53	11
2	Students try harder in what they are learning	9	16	4	5	6	3.43	12
3	Students understand more easily what they learn	13	}	6	7	3	3 60	8
4	Students remember more easily what they learn	16	8	6	7	3	3.58	9
5	Improves the class climate (students more engaged)	18	15	3	2	2	4 13	1
6	Students work independently at their own speed	22	6	6	2	4	3 93	3.5
7	Students work in groups	14	16	5	2	3	3 90	5
8	Students work on exercises or tasks indrvidually	11	[4	7	3	5	3.58	10
9	Students give presentations to the whole class.	16		5	6	2	3.83	6
10	Students reflect on their learning	10	24	6	0	0	4.10	2
11	Students discuss ideas with other students and the teacher.	13	13	5	5	4	3.65	7
12	Could facilitate student to access learning material	17	13	3	4	3	3 93	3.5

Source: (Field Data)

4

Respondents of M.Com course shown positive attitude towards ICT learning i.e. ICT improves the class climate (students more engaged), students reflect on their learning, students work independently at their own speed and ICT could facilitate student to access learning material as shown in Table 6 91

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S.No	Learning Feature Without ICT	Strongly	Agree	Neither Agree	Disagree	Strongly Disagree		
			* *	-nor Disagree			WA	Rank
1	Students concentrate more on their learning	2	2	1	19	16	1 88	11
2	Students try harder in what they are learning	2	2	4	16	16	1.95	10
3	Students understand more easily what they learn	1	<u> </u>	1	23	14	1.80	12
4	Students remember more easily what they learn	4	4	2	25	5	2 43	2
5	Improves the class climate (students more engaged)	7	3	4	16	10	2 53	1
6	Students work independently at their own speed	4	2	4	21	9	2.28	4.5
7	Students work in groups	5	4	I	15	15	2.23	7
8	Students work on exercises or tasks individually	3	2	4	13	18	1.98	9
9	Students give presentations to the whole class	3	3	7	14	13	2.23	7
10	Students reflect on their learning.	5	4	2	15	14	2.28	4.5
11	Students discuss ideas with other students and the teachei	3	4	2	21	10	2.23	7
12	Could facilitate student to access learning material	4	5		20	10	2.33	3

Table 6.92 M.Com student's opinion about Learning Feature without ICT (N=40)

Source: (Field Data)

Respondents of M.Com course shown negative attitude towards learning without ICT i.e. without ICT students reflect on their learning, in traditional learning process students concentrate more on their learning Students try harder in what they are learning. Students understand more easily what they learn Students work on exercises or tasks individually. As shown in Table 6.92

	Students opinion about learning features with and without ICT							
* * *	Total number of sample (N=300)							
- 2 - (Class	No. of Students	Percentage (%)	Institution Provide ICT lab (Weekly)	Rank Correlation coefficient (P)	T Statistics		
	BCA '	60	20 00	6 Hr.	-0.685	-2.97585		
UG	BBA	70	23 33	2 Hr	-0.57692	-2.23359		
	B.Com	Com 40 13 33		As per requirement ~ 1 Hr	0.723776	3.316907		
	Total	170	56 67					

Table 6.93 Correlation Students opinion about learning features with and without ICT

	MCA	40	13 33	6 Hr	-0.70629	-3.15502	
PG	MBA	50	16.67	2 Hr.	-0.5699	-2.19337	
	M.Com	40	13 33	As per requirement ~ 1 Hr.	0.800699	4.226632	
	Total	130	43 33		44449		
Table value $ t =2$ 228, p-2=10 at 5% level of significant.							

Source: (Compile by researcher)

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Table 6.93 shows a Pearson rank correlation analysis was conducted to examine whether there is relationship between learning with and without ICT.



The result reveals negative relationship between opinion of BCA, MCA, BBA and MBA students about with and without ICT learning. It means ICT learning is effective as compare to learning without ICT. But for BCA and MCA courses, calculated value of t is less than table value (t < |t|) therefore r is significant for computer oriented courses.

Also for BBA and MBA courses, calculated value of t is greater than table value (t > |t|) therefore r is not significant for management courses.

The result reveals high degree positive correlation between opinion of B.Com and M.Com students about with and without ICT learning. It means both types of learning have similar effect and calculated t is greater than table value (t > |t|) therefore r is significant.

From Table 6.93 researcher found that according to BCA, MCA, BBA and MBA students, learning with ICT is effective as compare to learning without ICT.

Only B.Com and M.Com students agree on both learning methods are equally effective.

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2. Students enjoy in classroom

Table 6.94 Students enjoy in ICT and Traditional classroom

* Percentage of students enjoyment in the classroom									
Sr.No	(N=300)	None		A Little		Some Time		A lot	
	, ,		%		%	;	%		%
1	Traditional	89	29	106	35.3	40	13.	65	21.
	(Blackboard) teaching		7				3		7
2	ICT interactive	66	22.	81	27.0	70	23.	83	27.
	teaching.		0				3		7

Source: (Field Data)



Diagram 6.11

From Table 6 94. Researcher was found that 27 7% students enjoyed ICT interactive teaching a lot and 21.7% students enjoyed traditional black board teaching. Totally 51 % student enjoyed ICT teaching methods and 35% enjoyed black board teaching process. 65 % students little enjoyed or say never enjoyed a black board teaching and 49 % students little or say never enjoyed ICT teaching. From this survey researcher was found that student enjoyed ICT teaching than traditional black board teaching as shown in diagram 6.11

Part IX

6.2.9 Teachers Opinions about effect of ICT on College/Institute Management and on

Social Aspect

Table 6.95 Teachers Opinions about effect of ICT on Institute Management and on Social

Aspect

(N=28)

S.No		Ströngly Agree	-Agree	Neither Agree noi Disagree	Disagree	Strongly Disagree	WA 3	Rank
1	The use of ICT could contribute to fadical change in college of institute management	12	9	3	1	3	3 928571	4
2	ICT could make college or institute more productive	13	14	0	0	1	4 357143	1
3	ICT could increase college of institute admissions	8	9	6	4	1	3 678571	5
4	ICT could improve achievement lates	6	11	4	5	2	3 5	7
5	ICT can have a big contribution to the learning/teaching practice of Your institution	15	7	5	1	0	4 285714	2
6	ICT can have a big contribution to the development of the country	11	13	2	2	0	4.178571	3
7	ICT should be a vital component of the country's strategic plan	8	8	7	4	1	3 642857	6

Source. (Field Data)

From Table 6.95 Researcher was collected the data about effect of ICT on College/Institute management and on social aspect from teachers Researcher was found that ICT make college or institute more productive, ICT have a big contribution to the learning/teaching practice of institution, ICT have a big contribution to the development of the country, The use of ICT contribute to radical change in college or institute management, ICT increase college or institute admissions, ICT should be a vital component of the country's strategic plan, ICT improve achievement rates have ranked 1st, 2nd,3rd, 4th, 5th, 6th and 7th with

weighted mean 4.357143, 4.285714, 4.178571, 3.928571, 3.678571, 3.642857, and 3.5 respectively.

	Teachers Opinions about effect of ICT on Institute Management and on Social Aspect (N=28)						
	Strongly agree and Agree Ror disag	ree 🛛 Strongly Disagree and Disagree					
7	ICT should be a vital component of the country's strategic plan	577.1 25.0 17.9					
و	ICT can have a big contribution to the development of the country	85.7 7.1					
 2	ICT can have a big contribution to the learning/teaching practice of Your institution	78.6 17.9 3.6					
4	ICT could improve achievement rates	60.7 14.3 25.0					
т 	ICT could increase college or institute admissions	60.7 21.4 17.9					
2	ICT could make college or institute more productive	96,4 3.6					
	The use of ICT could contribute to radical change in college or institute management	75.0 10.7 14.3					
1							

Diagram 6.12

From Table 6.95 Researcher combine two opinion i.e. Strongly agree and Agree and Strongly disagree and Disagree with each other and as shown in Diagram 6.12, Researcher was found that 75% teachers agree, 10.7% teachers are neutral and only 14.3 % teachers disagree with ICT should be a vital component of the country's strategic plan.