CHAPTER V

SUMMARY,
CONCLUSIONS,
RECOMMENDATIONS
## CHAPTER V
**SUMMARY, CONCLUSIONS, RECOMMENDATIONS**

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CHAPTER V
SUMMARY, CONCLUSIONS, RECOMMENDATIONS

This chapter briefly summarizes the main aspects of the research study.

5.0 INTRODUCTION:

The present age is called as:

Era of Information & Communication Technology (ICT).

ICT can be defined as: “anything which allows us to get information, to communicate, or to have an effect on the environment using electronic or digital equipment.

The ICT generally relates technologies that are used for accessing, gathering, manipulating and presenting or communicating information. These technologies include hardware devices; software applications and connectivity e.g. access to the Internet, Intranet and other information networks videoconferencing.

The role of ICT in universities and teaching departments is also shifting dramatically from traditional chalkboard, classroom, i.e. chalk, walk and talk to an instructional aid i.e., Computer-Assisted Instruction (CAI) to help students and faculty members to learn different subjects. ICT is now at the centre of education reform efforts that involve its use in coordination with changes in curriculum, teacher training, pedagogy and assessment.
5.1 NEED OF THE STUDY:

We are living in very turbulent times, the world is changing and changing fast. We can expect that rapid change will be a normal part of our life. Technology, specially information and Communication Technology (ICT) is playing a large part in these changes. Technology based on ICT will lead to the emergence of new pedagogical approach which promote student-centered learning experience, thus offering opportunities, conveniences, advantages, and dynamic environment enabling the students to succeed in their studies.

In the information age, new Technologies can provide quality training at the faster speed at a cheaper rate, at chosen places, at convenient times and for longer masses, with untiring repetitions and continuities. Educators need to remember that if they want to educate students to be life-long learners and successful contributes to the new global market, and they want to help students achieve a high level of competency and competitiveness, they have to make technology an integrated tool in the learning process.

5.2 STATEMENT OF THE PROBLEM

While in the past most learning was considered to be teacher-centered, the new shift to a student-centered approach means that teachers now have to change their focus from being dispensers of knowledge to facilitators of learning. To achieve this goal teachers and academics now should use Computer and Information and Communication Technology (ICT) as a tool in the education process. Today faculty members have to learn using new educational technologies especially ICT to achieve new goals in their jobs.
All our students deserve well-trained teachers, internet access, and appropriate educational technology in order to help them learn, and to help them succeed in 21st century jobs. To achieve this goal, we have to work hard to provide equal access to a quality education by using technology to enhance teaching and learning.

5.3 OPERATIONAL DEFINITIONS OF IMPORTANT TERMS:
The researcher had used some words with their specific meaning restricted for the present study. These operational definitions of words are given below:

5.3.1 Deployment: here Deployment means special or practical use of ICT.

5.3.2 Information and Communication Technology (ICT): in this study by “ICT” (Information and Communication Technology), we mean new technologies like: computers, microprocessors, computer networks, information networks, internet, intranet, online data banks, of line data banks, (CD-ROM), Mobiles, faxes, multimedia, instructional TV, educational software, electronic boards, printers, scanners, digital cameras, data show, videoconferences, teleconferences, satellite TV, etc. associated with utilizing of information.

5.3.3 Faculty Members: academics members at university

5.4 OBJECTIVES OF THE STUDY:
In the information age, Information and Communication Technology (ICT) is a vital tool for teaching organizations and education departments. The development in ICT have changed scene of education departments in universities. This research will seek to investigate:

Main objectives 1

1. To study the use of ICT by faculty members in the departments of Education in universities of Iran.
Sub objectives:

1.1 To identify users and non-users of ICT by Iranian faculty members

1.2 To find out ICT services used by faculty members in their teaching and research activities

1.3 To find out purposes of ICT use by faculty members

1.4 To study problems faced by faculty members while using ICT

Main objectives 2

2. To suggest ways to overcome problems faced by faculty members

5.5 RESEARCH QUESTIONS

In connection with the objectives of the study, the following research questions will be addressed:

1. Do Iranian faculty members in departments of Education use ICT?

2. How is the status of ICT utilization among Iranian faculty members in the Education of departments in Iran?

3. Who are the users and non-users of ICT by faculty members of Education in Iran? If not used why?

4. Why do Iranian faculty members use ICT? What are their purposes?

5. Which ICT tools and services are used by faculty members?

6. What are the barriers in using ICT?

7. Is there significant difference in the use of computer between faculty members English Levels?

8. Is there significant difference in the use of internet between faculty members English Levels?

5.6 ASSUMPTIONS:

1. The status of ICT utilization by Iranian faculty members of Education departments is not at desirable extent
2. Most of faculty members in Education departments use ICT in their teaching and research activities.

3. A few of faculty members in Education departments are not aware of using ICT.

5.7 THE SCOPE AND LIMITATIONS

The present study is limited to the above statement of the problem, objectives, research questions and samples selected for the purpose. Apart from these the other limitations are:

i. This study includes only departments of Education in universities of Iran.

ii. The study covers only full time faculty members of Education departments in universities of Iran.

iii. The questionnaire was designed in English and Persian language (Since the respondents of the research speak Persian Language, researcher translated some part of the questionnaire into Persian to reduce the uncertainty, ambiguity and misinterpretation).

iv. The study covers only full time male and female faculty members of departments of Education in universities of Iran.

v. This study includes covers faculty members of Education with the following specialization: curriculum Development, Educational Management, Philosophy of education, Education Planning, Instructional technology, Educational Evaluation.

5.8 METHODOLOGY OF THE PRESENT RESEARCH

Keeping the main objectives of the study, The researcher selected, descriptive – analytical (survey method) method was used as the research method.
5.9 POPULATION OF THIS STUDY:
There were 650 full time faculty members in academic year 2006 - 2007. The population of this study comprises 650 full time faculty members (461 males and 189 females).

5.10 SAMPLES OF THIS STUDY:
The sample for this study is same as the population. As the total population of full time faculty members of departments of Education in Iran were 650 and it was a small population so all the population of faculty members were selected as the research samples. 600 full time faculty members out of 650 (427 male and 173 female) were selected as the samples and were asked to fill in the questionnaire prepared by the researcher.
❖ 50 faculty members out of 650 were selected for pilot study, so after finalizing, 600 questionnaires were distributed among them.

5.11 PILOT STUDY SAMPLES OF THE STUDY:
Pilot study samples of the present research were 50 full time faculty members (16 female and 34 male) of departments of Education who were selecting among the universities of Fars province in city of Shiraz and Kazeroon. Respondents were asked to provide the answers to the preliminary questionnaire in order to modify the questions and statements. They were also requested to express their opinions and comments. Considering the pilot study, the questionnaire was modified.

5.12 TOOLS OF PRESENT RESEARCH:
Questionnaire, Interview, Observation:
As the present research was Survey study, therefore questionnaire Interview, Observation were used as the research tools to collect data.
5.12.1 CHARACTERS OF STUDY QUESTIONNAIRE:

Characters of Study Questionnaire Consists:

1) The questionnaire was designed in English and Persian language.
   * Since the respondents of the research speak Persian (Farsi) Language, Researcher translated some part of questionnaire into Persian language to reduce the uncertainty, ambiguity and misinterpretation.

2) Questionnaire was composed of 72 questions both open ended as well as closed types questions plus an option to express any additional comments.

3) The questionnaire was divided into four Part:
   
   Part A: purpose of questionnaire
   
   Part B: included questions related to general information of faculty members
   
   Part C: included questions related to deployment of ICT components and the Internet services.
   
   Part D: included items to explore problems of ICT use by respondents

5.13 STATISTICAL TOOLS IN THIS STUDY:

SPSS and Chi-square were used as the statistical tool in the present study.

1- Descriptive statistics:

The following descriptive statistics was used:

- **Frequency:**

  It was used to provide a general picture of the current major trends in respect to the deployment of ICT by faculty members of departments of Education in Iran.
• **Percentage:** It was used in the analysis of the responses given by faculty members.

• **Graphic:** Bar Graphs and Pie Graphs were used for presenting data.

2- **Inferential statistics:**

The researcher has made use of the following inferential statistics

**Chi-Square Test (X²):**

It was used to test the relationship between the research variables. The Chi-Square test is a non-parametric test. This test is used to compare the given observed frequencies with the corresponding expected frequencies of an assumed theoretical distribution to draw conclusion about whether or not the given data follow the assumed distribution.

5.14 **COMPUTERIZED SOFTWARES:**

• **MS Office Word:**

Word is a powerful software tool to create, edit and format texts. It was used for:

✓ **Typing the texts &** ✓ **Drawing tables**

• **MS Office Excel:**

Excel is a software tool to create figures and graphs. It was also used to: **Draw the necessary figures and graphs.**

• **SPSS (Statistical Package for Social Science):**

It was applied for: **Data analysis**

**SPSS was selected** because it is a well-established package that is widely used by behavioral and social scientists. **SPSS is a computational package**, that is powerful enough to quickly handle the analysis of large data sets.
5.15 FLOW CHART OF THE DETAILED PROCEDURE OF THE STUDY:

Finalization of the problem and objectives of the study

↓

Selection of area for research

(Faculty Members of Departments of Education in Iran)

↓

Discussion with the guide and preparation of a questionnaire

↓

Selection of the sample for pilot-study

↓

Modification of the questionnaire according to pilot-study sample suggestions

↓

Selection of sample for the main study

(600 faculty members of departments of Education in Iran)

↓

Mailing the research questionnaire to faculty members

↓

Data collection and coding of the items

↓

Entering data to computer

↓

Presenting the data, finding and interpretation

↓

Conclusions, Suggestions, Recommendations
5.16 FOLLOWING ARE THE MAIN FINDINGS OF RESEARCH STUDY

Statistical Findings regarding realization of Objectives, Research questions:

For realization of:

Main Objectives \(\rightarrow 1\)

Research questions \(\rightarrow 1\)

- Findings show that majority of faculty members of Education departments in Iran used ICT.

For realization of:

Sub objective \(\rightarrow 1.1\)

- Data demonstrates that unfamiliarity with ICT and lack of facilities were the two top reasons reported by the under study faculty members for not using ICT.

For realization of:

Sub Objective \(\rightarrow 1.2\)

Research question \(\rightarrow 5\)

The study indicates that faculty members used the following ICT tools and services:

- 97.6% of Faculty members used computer facilities.
- 97% of faculty members used the Internet.
- 69.8% of faculty members used Intranet.
- 68.8% of the under study academics used offline databanks.
- 72.9% of faculty members used online databases.
- 60.3% of respondents used multimedia.
- 88.3% of faculty members used CD & DVD technologies.
- 73.5% of faculty members used software tools.
76.4% of faculty members used data projector
94.9% of faculty members used digital printers
91% of faculty members used digital scanners
80.9% of faculty teachers used digital camera
66.3% of faculty members used E-boards
81% of faculty members used overhead
89.5% of Education departments faculty members used fax
66.3% of faculty members used VCR
81% of faculty members used expert systems.
78.9% of academics used digital TV & Radio
94.9% of Education university members used mobiles

INTERNET SERVICES
Findings shows that Total:
85.6% of faculty members used web.
95.9% of faculty teachers used e-mail.
65.3% of faculty members used digital publishing
49.7% of faculty members used FTP
53.3% of faculty members used telnet
83.9% of faculty members used search tools
93.8% of faculty members used guide services on the Internet
75.8% of faculty teachers used news services on the Internet
75.9% of Education faculty members used videoconference
73.2% of faculty members used discussion groups
76.3% of faculty members used newsgroups
72% of faculty members used online shopping
87% of faculty members used SMS on the Internet
83.4% of faculty members used chat on the Internet
SEARCH ENGINES:

Data shows that:
- Majority of respondents used Yahoo and Google.

DATABANKS

The study indicates that Total:
- 66% of faculty members used Eric databanks
- 71.2% of faculty members used research survey databanks
- 79% of faculty members used book databanks
- 76.6% of faculty members used question databanks

SOFTWARE TOOLS

Findings show that Total:
- 93.7% of faculty members used Power Point,
- 94.8% of faculty members used Word
- 81.5% of faculty members used Excel
- 70.7% of faculty members used SPSS
- 63.9% of faculty members used Graphic

For realization of:
subObjective ➔ 1.3
Search question ➔ 4

It was observed that:
- Maximum faculty members used ICT, for information seeking, doing research works and Teaching.
- Maximum faculty members use all formats (full text, References Abstract, Multimedia, Software).
- Maximum of respondents used ICT in classroom lectures, and in workshop presentation
Maximum of respondents used ICT in seminars, conferences paper presentations, paper writing

THE PROBLEMS FACED BY FACULTY MEMBERS IN USING ICT

For realization of:

Sub Objective $\rightarrow$ 1.4

Research question $\rightarrow$ 6

Faculty members reported the following problems which faced in using ICT:

- Inadequacy of computers, printers, software, databanks, supplies.
- Inadequate education and training and experience
- Inadequate funding and budget to purchase new ICT facilities,
- Low Internet speed
- Inaccessibility and disconnectivity of the Internet,
- Inability to locate the network addresses.
- Lack of time, and a lack of familiarity to new Technologies

For realization of:

Research questions: $\rightarrow$ 7 & 8

Statistical Chi-square Test Result shows that:

- Significant difference is observed between Faculty members' English level and use of Computer
- Significant difference is observed between Faculty members' English level and use of Internet.
TO SUGGEST WAYS TO OVERCOME PROBLEMS FACED BY FACULTY MEMBERS

For realization of:

Main Objective → 6

With reference to the Sixth objective of the study

1. Access to online and offline databanks should be provided.
2. The provision of more computers with Internet facilities.
3. Increasing Internet access speed.
4. The providing more chances of training in ICT use.
5. Classrooms should be equipped with advanced audio visual aids such as data projectors, digital overhead projectors, E-boards, digital cameras, etc.
6. Teaching workshops is a need.
7. A budget must be included for ICT so that the expenditure for acquisition is part of the institutional planning process.
8. Curriculum and courses content should be revised so that the institution is in a position to respond to the rapid pace of technology change.

OTHER FINDINGS OF RESEARCH STUDY:

Findings revealed that:

1. Majority of faculty members of departments of Education in Iran were male.
2. Majority of faculty members were in age group of 40-49.
3. Majority of respondents were PhD.
4. Maximum of faculty members were Lecturers, and minimum were Professors.
5. Majority of faculty members had "11-20" years teaching experience.
7. Maximum of faculty members used ICT more than 5 hours daily.
8. 57% of respondents "always" has accessed to ICT facilities in their work place
9. Maximum of the respondents reported satisfaction of the ICT facilities in their departments
10. More than half of Education Faculty members had articles on the Internet.
11. 42.8% of faculty members participated in computer use training course
12. Majority of faculty members believed that teaching how to use ICT help them to increase use of ICT.

5.17 CONCLUSIONS:

1. The findings and observations in the present study underscore the need to offer more learning opportunities for faculty members to demonstrate, how ICT and instructional technology can be applied in their works.

2. Academic departments of Education in universities of Iran need to ensure teaching staffs, support and effective classroom capacity for the use of new technologies specially ICT. It will not only affect the relationship among the professionals in Education but also budget and curriculum development.

3. Higher education system in Iran must be modified to suit the next generation of faculty members in regard to professional demands and expectations of students.

4. New ICT constitutes new means new challenges, better opportunities not new ends. Consequently, we can and should re-think and redesign everything, as technology changes.

5. It is also expected that the use of various ICT facilities will not only provide Education-professionals new challenges but will also provide better opportunities. Hence, we should consider all the components, while planning and organizing new ICT based services and/or redesigning and upgrading the existing facilities.
5.18 How ICT IS USED IN TEACHING LEARNING PROCESS

Generally data showed that full time faculty members departments of education in Iran used ICT facilities in teaching learning process. They used computer for instructional design, curriculum planning and utilizing software tools to design and produce multimedia lessons, tutorials and quizzes. Faculty members used internet for search new knowledge they used these up-to-date research reports in the their classroom

Faculty members used multi media for their presentations were alive with sounds, movies, animation, and interactivity. Faculty members used CDs & DVDs for saving large amounts of data and showed in their class rooms

Faculty members used software tool for made the programs that need to type, draw or surf the internet for teaching. They used printer for Print exam questions, research working, writing a book, paper writing. They using Electronic White - Board for display notes and drawings in their classrooms

Faculty members used Overhead projector to clarify, correlate and coordinate accurate concepts, interpretations and appreciations to enable them to make learning more concrete, effective, interesting, meaningful. They used Audio-visual aids for completing the triangular process of learning; viz., motivation, clarification and stimulation. They used it for clearing the channel between the learner and the things that are worth learning. To provide significant gains in informational learning, retention and recall, thinking and reasoning, activity, interest, imagination, better assimilation and personal growth.

They used data projector. A data projector connects directly to a computer and then projects the computer screen image on to classroom board or wall. They used data projector for: Exciting whole-class teaching using graphics,
video, animation and sometimes sound. Lessons can maintain pace through a variety of media and resource.

they used word for made power point, they used power point for writing information and showed the their students. They used Excel for create web pages and presentation their information. They used Graphic, Graphics programs are used to produce these images on a computer. the images can be two dimensonal or three-dimenensnal.

The researcher’s contribution towards this present research

1- To the faculty members. This research helpful for faculty members because they could express Reasons for not using ICT by them and What are the barriers in using ICT.

2- To the heads: This research helpful heads of departments Education because of they award Do Iranian faculty members of Education departments use ICT? How is the status of ICT utilization among Iranian faculty members of departments of Education in Iran, What are their purposes in using ICT? Which ICT tools and services are used by faculty members? and heads of departments Education provision A enough budget to develop ICT based services, especially for academic and research faculty members. and continue its support of ICT by providing incentives for its developments in form of tax exemptions, consultancy, research and trainings, etc. Classrooms equipped with advanced audio visual aids such as data projectors, digital overhead projectors, etc.

3- To the researcher: This research helpful for researcher because of The researcher is an Iranian faculty member of Education department and was interested in doing a research work about deployment of ICT by faculty members of departments of Education in universities of Iran, the researcher award about deployment of ICT by faculty members of departments of...
Education in universities of Iran, and regarding founding and role important ICT in the teaching could present recommends to

4- To the university

This research helpful for universities of Iran because of universities The provision of more Access to ICT facilities and ICT training and experience Provision for faculty members.

5.19 RECOMMENDATIONS' GIVEN BY THE RESEARCHER:

The suggestions made by the researcher are based on the qualitative responses received from the faculty members showed on page no 198. The figures shown in to bracket are the responses of the faculty members.

As ICT is an inseparable part of the academic departments of Education. It is recommended that universities of Iran should:

1- The provision of more Access to online and offline databanks for faculty members.

2- The computers provided should be up-to-date models recognizing that they will perform better and faster. Maintenance of computers should also be done more regularly

3- The speed of the internet should be increased and More bandwidth should be sought so as to provide faster access that will save much of the users’ time and be a source of motivation to use the internet.

4- Training should also be provided to faculty members about the basics of globally available and widely used software.

5- Classrooms should be equipped with advanced audio visual aids such as data projectors, digital overhead projectors, E-boards, etc.

6- Iranian departments of Education classrooms should be equipped with The computers and advance audio-visual aids facilities. The computers
should be *up-to-date models* recognizing that they will perform better and faster. *Maintenance of computers should also be done more regularly.*

7- **Teaching workshops** should also be provided to faculty members

8- **As English** is an international language and most software tools are available in English, hence recommended to have the *provision of English teaching and learning* at very basic stage. Arrange the English course to those faculty members whose English levels are average and poor.

9- universities of Iran should have enough budgetary provision to develop ICT based services. *Data access speed* communication should be *increased.*

10-Curriculum and courses content should be revised so that the institution is in a position to respond to the rapid pace of technology change.

### 5.20 SUGGESTIONS FOR FURTHER STUDIES

1. The study demonstrated that study is restricted to ICT utilization in the departments of Education and does not cover other academic departments. Hence, it is suggested to investigate ICT utilization in other academic departments in Iranian universities.

2. It is also suggested to have a depth research on “The impact of ICT on teaching and learning in departments of Education in Iran”.

3. It is recommended to include ICT in curriculums in the universities of Iran and detailed depth study to be carried out, before implementation.

4. It is also recommended future depth studies on various aspects of ICT viz., The Internet, computer, databanks, networks, multimedia (hypermedia), etc.

5- it is suggested to investigate ICT utilization by students of department education.

6- it is suggested to investigate The impact of using ICT in the change behavior of students.

7- it is suggested to investigate The impact of using ICT on increasing motivation and improvements in academic performance.