CHAPTER - V

SUMMARY, FINDINGS, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY

5.1 INTRODUCTION

“Research is an Endeavour to discover, develop and verify knowledge. It is an intellectual process that has developed over hundreds of years, ever changing in purpose and form and always searching for truth”.

-J.Francis Rummel.

This chapter deals with the consolidation of various findings presented in the previous chapters. Findings are the statements of factual information based upon data analysis. Conclusions are the answers to the questions raised or the statements of acceptance or rejection of the hypotheses proposed. In this, the researcher deals with the aspects pertaining to the tools used for the investigation, objectives and hypotheses of the study, based on analysis, the major findings are arrived at and finally the educational implications together with suggestions for further study.

5.2 NEED FOR THE STUDY

Information Technology literacy is becoming essential for the new educator, who has to deal with new studies, in a new school, using new media, namely the internet in a new learning environment with free access to a large amount of information resources. Realizing this importance of Information Technology, the IT education in India is being incorporated as a part of the academic curriculum in schools, colleges and universities. At the school level, the
basics of Information Technology and training on computer usage are focused upon to make the outgoing school children IT literate. At the college and university levels, the study of IT application in all disciplines is focused.

The National curriculum framework for school education developed by National Council for Educational Research and Training (NCERT) is recommended. The council has worked out a blueprint for smart schools, which the Ministry of Human Resource Development (MHRD) proposes to establish all over the country albeit in limited numbers. Apart from working out a conceptual framework for this school, the technological support and expenditure involved there in the changing role of the teacher, nature of learning programmes, exemplar activities for students and skills expected by them in different grades and finally, imperatives for teachers council for IT education has also been recommended for developing IT course for various levels of training to teachers.

The teachers must have knowledge about technology and become self confident enough to integrate it effectively in the class room, this motivation can be easily provided to them at the time of their pre-service training. This point to the need for teacher educators themselves to acquire proficiency in the various means of ICT.

The NCERT is striving for the promotion of use of Information and Communication Technology in pre-service teacher education course, who would, in-turn, contribute in making every child IT literate. Keeping all these in view the researcher is instructed in study the teacher educators attitude and aptitude towards ICT.
5.3 STATEMENT OF THE PROBLEM

Teacher education is a continuous process and its pre-service and in-service components are inseparable (The National Policy On Education-1986). The teacher educators can play many roles in their working places. The flow of information enables the teacher educators to access multimedia material for teaching. The educational environment is changing rapidly as a consequence of ICT and will continue to change. It plays a vital role in teaching. It is essential to know the attitude and aptitude of teacher educators towards ICT. The problem chosen for the study is as follows, “Attitude and Aptitude of teacher educators towards Information and Communication Technology”.

5.4 DEFINITION OF KEY TERMS

The key terms of the title are defined below for their operational meaning in the study and for better understanding of the study.

5.4.1 Information and Communication Technology

Information and Communication Technology (ICT) is the technology required for information processing. In particular the use of computer software to convert, store, protect, process, transmit information from anywhere, anytime.

ICT can be broadly being defined as a set of activities that is facilitated, by electronic means, the capturing, storage, processing, transmission, and display of information. This paper uses the term ‘Information and Communication Technologies’ (ICT) to encompass the production of both computer hardware and software as well as the means of transferring the information in digital form.
ICT (information and communications technology - or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

5.4.2 Attitude

Attitude is “a mental set to respond to a situation with a prepared reaction whereas sets may be Information and Communication Technology”.

“An attitude can be defined as an enduring organization of motivational, emotional, perceptual and process with respect to some aspect of the individual’s world”.

Anastai (1990) defines Attitude as a tendency to react favourably or unfavourably towards a designated class of stimuli, such as a national or ethnic group, a custom, or an institution. It is evident that when so defined, Attitudes cannot be directly observed but must be inferred from our behavior both verbal and nonverbal. In more objective terms, the concept of Attitude may be said to relate to response consistency with regard to certain categories of stimuli. In actual practice, the term ‘Attitude’ has been most frequently associated with social stimuli and with emotionally tended responses.

Edward and David (1991) define Attitude as a psychological construct or phenomenon that cannot be directly observed rather, its existence is inferred.
Although there is no set definition for Attitude, there is considerable commonality among the various definitions that do exist in the literature. It is a predisposition to act, a state of readiness to act based on past experience, or a predisposition to act based on past evaluations. It is not the act itself. Attitudes are learnt, they are not innate. Attitudes are generally not transient; rather they tend to be enduring and consistent.

Attitude towards ICT: It is referred as the tendency to react favourably/positively or unfavourably/negatively towards ICT.

5.4.3 Aptitude

An aptitude is defined as a set of conditions that is symptomatic or indicative of one’s ability to acquire some knowledge or skill in a certain field. They are latent potentials which in environmental conditions. They are undeveloped capacities, to acquire abilities and skills in special areas. Aptitude is a discrete, specific, unitary characteristic, related to success in a particular field.

Aptitude is an innate, acquired or learned or developed component of a competency (being the others: knowledge, understanding and attitude) to do a certain kind of work at a certain level. Aptitudes may be physical or mental.

Aptitude towards ICT: It is referred as the knowledge, understanding and competence of the teacher educators about ICT.

5.4.4 Teacher Educators

For the present study the Teachers who are working in the Colleges of Education are termed as Teacher-Educators.
5.5 OBJECTIVES OF THE STUDY

1. To develop and validate a research tool to measure the attitude of teacher educators towards Information and Communication Technology.

2. To find out whether there is any significant difference between the attitude of teacher educators towards Information and Communication Technology based on the background variables; namely
   a) Gender
   b) Subject taught
   c) Locality of college
   d) Type of college
   e) Knowledge of Computer
   f) Teaching experience

3. To find out whether there is any significant difference between the aptitude of teacher educators towards Information and Communication Technology based on the background variables; namely
   a) Gender
   b) Subject taught
   c) Locality of college
   d) Type of college
   e) Knowledge of Computer
   f) Teaching experience
4. To find out whether there is any significant difference between the familiarity of teacher educators towards Information and Communication Technology based on the background variables; namely
   a) Gender
   b) Subject taught
   c) Locality of college
   d) Type of college
   e) Knowledge of Computer
   f) Teaching experience

5. To find out whether there is any correlation between the attitude and aptitude of teacher educators towards Information and Communication Technology

8. To find out whether there is any correlation between the aptitude and familiarity of teacher educators towards Information and Communication Technology

6. To find out whether there is any correlation between the familiarity and attitude of teacher educators towards Information and Communication Technology

7. To identify the background variables which are contributing to the attitude of teacher educators towards Information and Communication Technology

8. To identify the background variables which are contributing to the aptitude of teacher educators towards Information and Communication Technology

9. To identify the background variables which are contributing to the familiarity of teacher educators towards Information and Communication Technology
5.6 HYPOTHESES OF THE STUDY

1. The distribution of the scores of teacher educators attitude, aptitude and familiarity towards Information and Communication Technology are low.

2. There is no significant difference between the attitude of teacher educators towards Information and Communication Technology based on the background variables; namely,
   a) Gender
   b) Subject taught
   c) Locality of college
   d) Type of college
   e) Knowledge of Computer
   f) Teaching experience

3. There is no significant difference between the aptitude of teacher educators towards Information and Communication Technology based on the background variables; namely,
   a) Gender
   b) Subject taught
   c) Locality of college
   d) Type of college
   e) Knowledge of Computer
   f) Teaching experience
4. There is no significant difference between the familiarity of teacher educators towards Information and Communication Technology based on the background variables; namely,

   a) Gender
   b) Subject taught
   c) Locality of college
   d) Type of college
   e) Knowledge of Computer
   f) Teaching experience

5. There is no correlation between the attitude and aptitude of teacher educators towards Information and Communication Technology

6. There is no correlation between the aptitude and familiarity of teacher educators towards Information and Communication Technology

7. There is no correlation between the familiarity and attitude of teacher educators towards Information and Communication Technology

8. The background variables do not contribute to the attitude of teacher educators towards Information and Communication Technology

9. The background variables do not contribute to the aptitude of teacher educators towards Information and Communication Technology

10. The background variables do not contribute to the familiarity of teacher educators towards Information and Communication Technology
5.7 VARIABLES USED IN THE STUDY

- Teacher educators Attitudes towards ICT
- Teacher educators Aptitude towards ICT
- Teacher educators Familiarity towards ICT

5.8 BACKGROUND VARIABLES

The background variables considered for the study with reference to the teacher educators were Gender, Subject taught, Locality of college, Type of college, Knowledge of Computer and Teaching experience.

5.9 DESCRIPTION OF THE BACKGROUND VARIABLES

The Gender was classified as male and female.

The subjects taught were classified based on their optional subject (their basic degree) namely Language (Tamil and English), Arts (History, Commerce and Economics) and Science (Physics, Chemistry, Botany, Zoology and Computer Science).

The Locality of the college was classified into rural and urban.

The type of college was classified into Government, Government Aided and Self Finance.

The teacher educator knowledge of computer was also taken into account and classified into two categories; namely the teacher educator who have basic knowledge of computer and who have do not basic knowledge of computer. Basic
knowledge of computer refers to knowledge in following namely Ms-Office and Internet.

Teaching experience were classified into 0 to 10 years, 11 to 20 years and above 20 years experience.

5.10 METHODOLOGY

Normative survey method is adopted in this study Random sampling method is used for collection of data.

5.11 SAMPLE OF THE PRESENT STUDY

“The term sample refers to a small group of individuals taken from a large population of sample may be defined as finite number of observation or cares, select from all areas in a particular universe, often assumed to be representative of the total group of universe of which it is a part”.

The present study consists of 300 teacher educators from Government, Government Aided and Self finance colleges. 300 teacher educators from 40 colleges of education from six districts namely Chennai, Villupuram, Vellore, Cuddalore, Salem and Coimbatore were selected for the study.

5.12 TOOLS USED IN THE STUDY

In this present Study, Investigator used three tools. Attitude tool was developed by the investigator namely Teacher Educators Attitude towards ICT. The Aptitude and Familiarity tool, which is standardized tools namely Teacher Educators Aptitude and Familiarity towards ICT developed by Samuel Gnanamuthu.J and Krishnakumar.R.(2010).
5.13 STATISTICAL TECHNIQUES USED
For analysis of the data, the following statistical techniques have been used.
Descriptive statistics principles with SPSS software were used for analyse the data.

1. Descriptive analysis (Mean & S.D)
2. Differential analysis (‘t’ test & F test )
3. Correlation analysis
4. Regression analysis

5.14 DELIMITATIONS OF THE STUDY
The delimitations of the study are summarized below.

i. The Investigator confined his study with only 300 Samples from 40 Colleges of Education in Tamil Nadu with limited time.

ii. The investigator conducted the study with only six variables such as Gender, Subject taught, Locality of college, Type of college, Knowledge of Computer and Teaching experience.

5.15 FINDINGS

➢ The attitude of teacher educators towards ICT is high. The co-efficient skewness of the distribution is found to be 0.454 which is positively skewed and consequently the scores are amassed at the left end of the distribution.

➢ The co-efficient kurtosis of the distribution is found to be -0.780 which is a platykurtic distribution.

➢ The aptitude of teacher educators towards ICT is high. The co-efficient skewness of the distribution is found to be 0.168 which is positively skewed and consequently the scores are amassed at the left end of the distribution.
The co-efficient kurtosis of the distribution is found to be -0.694 which is a platykurtic distribution.

- The familiarity of teacher educators towards ICT is high. The co-efficient skewness of the distribution is found to be -0.642 which is negatively skewed and consequently the scores are amassed at the right end of the distribution. The co-efficient kurtosis of the distribution is found to be -0.346 which is a platykurtic distribution.

- There is significant difference in the attitude of teacher educators towards Information and Communication Technology based on gender.

- There is significant difference in the attitude of teacher educators towards Information and Communication Technology between Arts and Science, Science and Language subject taught teacher educators. There is no significant difference in the attitude of teacher educators towards Information and Communication Technology between Language and Arts subject taught teacher educators.

- There is no significant difference in the attitude of teacher educators towards Information and Communication Technology with respect to their locality of college.

- There is no significant difference in the attitude of teacher educators towards Information and Communication Technology with respect to their type of college.
➢ There is significant difference in the attitude of teacher educators towards Information and Communication Technology based on knowledge of computer.

➢ There is significant difference in the attitude of teacher educators towards Information and Communication Technology between 0 to 10 and 11 to 20, 0 to 10 years and above 20 years teaching experience teacher educators. There is no significant difference in the attitude of teacher educators towards Information and Communication Technology between 11 to 20 and above 20 years teaching experience teacher educators.

➢ There is significant difference in the aptitude of teacher educators towards Information and Communication Technology based on gender.

➢ There is significant difference in the aptitude of teacher educators towards Information and Communication Technology between Arts and Science, Science and Language subject taught teacher educators. There is no significant difference in the aptitude of teacher educators towards Information and Communication Technology between Language and Arts subject taught teacher educators.

➢ There is no significant difference in the aptitude of teacher educators towards Information and Communication Technology with respect to their locality of college.

➢ There is no significant difference in the aptitude of teacher educators towards Information and Communication Technology with respect to their type of college.
There is significant difference in the aptitude of teacher educators towards Information and Communication Technology based on knowledge of computer.

There is no significant difference in the aptitude of teacher educators towards Information and Communication Technology with respect to their teaching experience.

There is significant difference in the familiarity of teacher educators towards Information and Communication Technology based on gender.

There is significant difference in the familiarity of teacher educators towards Information and Communication Technology between Arts and Science, Science and Language subject taught teacher educators. There is no significant difference in the familiarity of teacher educators towards Information and Communication Technology between Language and Arts subject taught teacher educators.

There is significant difference in the familiarity of teacher educators towards Information and Communication Technology with respect to their locality of college.

There is significant difference in the familiarity of teacher educators towards Information and Communication Technology between Government Aided and Self Finance, Self Finance and Government college teacher educators. There is no significant difference in the familiarity of teacher educators towards Information and Communication Technology between Government and Government Aided college teacher educators.
➢ There is no significant difference in the familiarity of teacher educators towards Information and Communication Technology based on knowledge of computer.

➢ There is significant difference in the familiarity of teacher educators towards Information and Communication Technology between 0 to 10 and 11 to 20, 11 to 20 and above 20 and 0 to 10 years and above 20 years teaching experience teacher educators.

➢ There is correlation between the attitude and aptitude of teacher educators towards Information and Communication Technology. Hence the null hypothesis is rejected and concluded that there is correlation between the attitude and aptitude of teacher educators towards Information and Communication Technology.

➢ There is correlation between the aptitude and familiarity of teacher educators towards Information and Communication Technology. Hence the null hypothesis is rejected and concluded that there is correlation between the aptitude and familiarity of teacher educators towards Information and Communication Technology.

➢ There is correlation between the familiarity and attitude of teacher educators towards Information and Communication Technology. Hence the null hypothesis is rejected and concluded that there is correlation between the Familiarity and Attitude of teacher educators towards Information and Communication Technology.
The background variables locality of college and type of college do not contribute to the attitude of teacher educators towards Information and Communication Technology.

The background variables locality of college, type of college, knowledge in computer and teaching experience do not contribute to the aptitude of teacher educators towards Information and Communication Technology.

The background variables locality of college, type of college and knowledge in computer do not contribute to the familiarity of teacher educators towards Information and Communication Technology.

5.16 CONCLUSION

It is observed from the above finding of the research that the teacher educators could develop their knowledge of computer education in teacher education institutions. It is found that the teacher educators have good computer skills but the facility to apply and integrate computer education in educational institution is very nominal. It is only the limited sense that the teacher educators are utilizing internet in their day to day academic updates.

The usage of computer by the teacher in the evaluation process is very low, most of the time they are using their computer for tabulating the marks and grades of the students.

Hence, this study concludes that the teacher educators have high level of attitude, aptitude and familiarity towards Information and Communication Technology. The level of ICT knowledge be updated and the integration of computers in teacher education still to be effectively implemented, monitored, encouraged and modified from time to time to be on par with the advanced countries in the field of teacher education.
5.17 RESULTS AND DISCUSSION

The present study is aimed to study the Attitude, aptitude and familiarity of teacher educators towards ICT. The present study gives a clear cut view about teacher educators attitude, aptitude and familiarity towards ICT is high.

The result of this study is that the teacher educators attitude towards ICT with reference to their gender, subject taught, knowledge of computer and teaching experience have significant attitude towards ICT. This result is supported by the studies made by Joy, B.H.H. and Manickam, L.S.S. (2002), Barton, R and Haydn, T (2006), Teo, Timothy (2008), Deniz (2008), Rahman, Mohammad Ataur (2011) and Rengarajan and Senthilnathan (2012).

The result of this study is that the teacher educators aptitude towards ICT with reference to their gender, subject taught and knowledge of computer have significant aptitude towards ICT. The result of this study is that the teacher educators familiarity towards ICT with reference to their gender, subject taught, locality of college, type of college and teaching experience have significant familiarity towards ICT. The result is supported by the studies made by Hammond and Michael (2011), Musarurwa, Charles (2011), Nagamani, Deepa; Muthuswamy and Prema (2013) and Avidov-Ungar, Orit; Iluz and Irit Emma (2014).
5.18 RECOMMENDATIONS

The following recommendations have been made for betterment of the teacher educators.

1. The arts and language teacher educators are to be given better orientation towards ICT.

2. The teacher educator on the whole is to be trained to create social media and separate blogs to give guidance for the student teachers in order to update their knowledge and information.

3. Integration of computer in teaching, learning and evaluation system should be adopted on a large scale among the teacher educators.

4. The ICT rich environments to be established in the education institution particularly in the college of education and University Department of education.

5. There must be sufficient time allotted in the curriculum transaction for providing hands on experience in ICT.

6. The teacher educators should be provided with support, an ICT pedagogy officer, as they planned, implemented and evaluated innovative ICT-rich learning experiences in college of education.

5.19 SUGGESTIONS FOR FURTHER STUDY

1. Similar study may be conducted among the student teachers at college of education.

2. Facilities available in the teacher education institution should be assessed with the norms prescribed by NCTE/ concerned universities.
3. The study may also be conducted in different colleges such as Engineering, Arts and Science College.

4. The similar study may be conducted among the different types of schools such as Govt., Govt. Aided, Private and CBSE.

5. Knowledge of teacher educators towards ICT should be critically evaluated.

6. Need to train the teachers in computer education should be highlighted right from their joining stage.

7. Teacher education institution should be assessed based on the integration of computer education in teacher education.

8. The educational institution should utilize the facilities provided by the central government for the improvement of digital literacy among student and teacher educator.