

**TO STUDY THE ATTITUDE OF SECONDARY SCHOOL
TEACHERS TOWARDS ICT AND THE USE OF COMPUTERS
IN EDUCATION**



DISSERTATION

**SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF**

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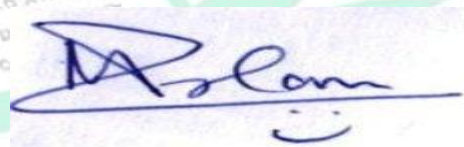
DECLARATION

This is to certify that the dissertation entitled “**To study the attitude of secondary school teachers towards ICT and the use of computers in education**” has completed myself in the Department of Education, Integral University, Lucknow under the supervision of **Dr. E. Ahmad**. I am fully responsible for all the quotations, citations, calculation and interpretation. The data given in this study are genuine and not given earlier.

DATE: 25/07/2020

PLACE: LUCKNOW

MOHAMMAD ZAINUL ISLAM

A handwritten signature in blue ink, appearing to read 'M. Islam', is placed over a faint watermark of an open book. The book watermark is part of a larger background watermark for Integral University, Lucknow, which includes a gear and a palm tree.

Dr. E. Ahmad
Associate Professor



Faculty of Education
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CERTIFICATE

This is to certify that the M. Ed. dissertation entitled “**To study the attitude of secondary school teachers towards ICT and the use of computers in education**” submitted by **Mohammad Zainul Islam (Enrollment no.-1600102339)** in partial fulfilment of the requirement for the award of degree of **Master of Education (M. Ed)** has completed under my guidance supervision.

In my humble judgment, the work as far as known to me is original and can be considered in a contribution to our knowledge of the subject.

Date: 25/07/2020

Place: Lucknow

A handwritten signature in blue ink, appearing to read 'E. Ahmad', is written on a light blue rectangular background.

Dr. E. Ahmad
Associate Professor
Integral university
Lucknow


ACKNOWLEDGEMENT

First and foremost, I am thankful to Almighty Allah for his blessings that always help me to achieve the objectives including the completing of present Dissertation Report.

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I owe a debt of gratitude to the Principals, Head Masters and Teachers who extended their full co-operation and support during the process of data collection. In addition the students upon which tests were administered need special thanks for their co-operation.

Last but not the least I want to thanks my family and friends who supported me throughout the dissertation work.



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MOHAMMAD ZAINUL ISLAM

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DECLARATION

CERTIFICATE

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LIST OF ABBREVIATIONS

ICT: INFORMATION AND COMMUNICATION TECHNOLOGY

SIET: STATE INSTITUTE OF EDUCATIONAL TECHNOLOGY

TV: TELEVISION

VCR: VIDEO CASSETTE RECORDER

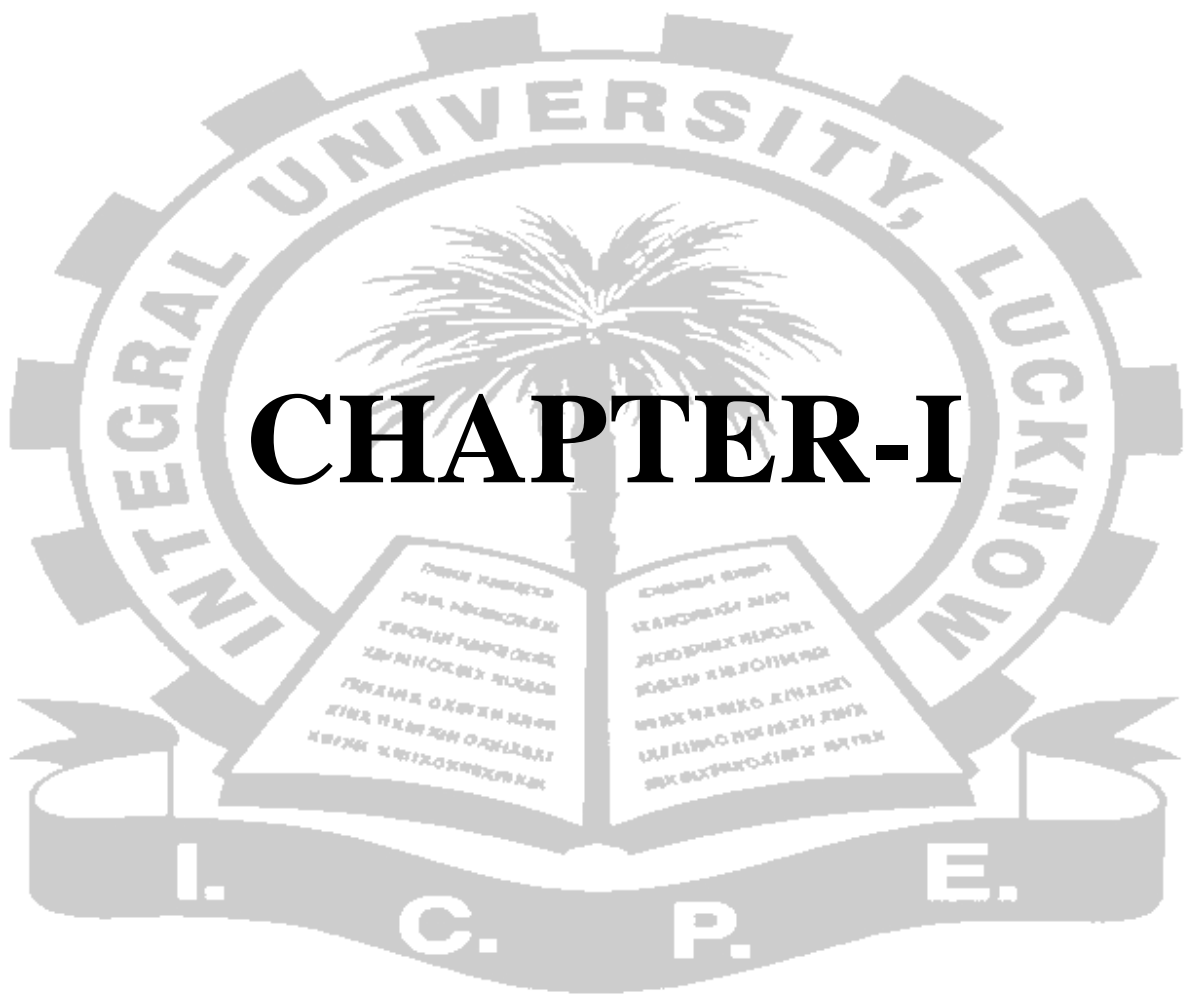
LCD: LIQUID CRYSTAL DISPLAY

CD: COMPACT DISK

DVD: DIGITAL VERSATILE DISK

EDUSAT: EDUCATIONAL SATELLITE

SD: STANDARD DEVIATION



CHAPTER-I

CHAPTER –I

Introduction, Problem and its Significance

1.1 Education

Education is very important for an individual's success in life. Education provides pupils teaching skills that prepare them physically, mentally, and socially for the world of work in later life. Education is generally seen as the foundation of society which brings economic wealth, social prosperity and political stability. Education is the means through which the aims and habits of a group of people lives on from one generation to the next. Education is the process of learning and knowing, which is not restricted to our school text books. It's a holistic process and continues through our life. Even the regular things and events around us educate us, in one or the other way. It would not be an exaggeration to say that the existence of human beings are fruitless without education. "Education is supposed to develop an integrated human being and to prepare young people to perform useful functions for society and to take part in collective life. But when the society is changing from day to day it is difficult to know to prepare and what to aim for it"

According to Aristotle, "Education is the process of training man to fulfil his aim by exercising all the facilities to the fullest as a member of society."

1.1.1 Educational Technology

Educational technology, in terms of terminology and structural composition may carry out two basic components, namely education and technology. Both of

them have been in a continuous process of evolution. Technology refers to the techniques a systematic way of applying the techniques to achieve an objective is an important as the use of technical equipment for the same. As a matter of fact, techniques are referred as the software and the equipments as the hardware of technology. Technology results in new designs and devices as also new ideas and processes. Each new physical device is accompanied by a new set of procedures and techniques.

Education, the act or process of acquiring and imparting knowledge, is essential in the overall development of learner with a view to his participation in the transformation of the world for a better tomorrow. According to Educational Communications and Technology, USA:- “ Educational technology is a complex, integrated process involving people, procedures, ideas, devices and organizations for analyzing problems, devising, implementing, evaluating and managing solutions to these problems involved in all aspects of learning.”

Education technology refer to the application of techniques, devices and methods based on psychology and science, teaching aids and teaching learning materials in teaching learning process to create conducive environment to make the teaching and learning interesting, effective and purposeful. It controls the teaching learning process and makes it easy. In short, we can say that application of science in any aspect of teaching-learning process is called educational technology.

1.1.2 Information and Communication Technology

The use of information and communication technology (ICT) has become widespread our society is increasingly connected with rapid advance of ICT in homes, school and business. It uses mullions of blogs, social networking sites, web pages

and interactive online games. Consequently the number of teachers use teaching aids, like charts models etc. it is a known fact that majority of schools do not have any appropriate teaching aids related to schools content. So teachers have no facility to use Audio-Visual Aids during teaching.

The use of audio-Visual Aids get further restricted due to unmotivated persons becoming teachers. The central government realized the need of improving quality of education through the use of television where in most competent teacher teaches the topic with the help of most appropriate teaching aids. This helped in improving the quality of teaching in schools having no teacher to teach the subject, less competent teachers.

Along with Audio-Visual aids, the print media has to go long way in improving the quality of teaching and learning. Format in which the textbooks were written was not beneficial for teachers and students. Researchers started thinking and using different theories of learning for developing instructional material. ICT is made up of information technology and commotions technology and a communication reaches thru recipient through communications technology.

1.1.3 Functions of Information and Communication Technology

Now a day the role of information and Communication Technology (ICT), in the education sector plays important role, especially in the process of empowering the technology into the educational activity. Educational sector can be the most effective sector to anticipate and eliminate the negative impact of ICT. Technology in another side can be the most effective way to increase the student's knowledge. The use of ICT in education adds value to teaching and learning. After the inception of ICT in schools, students found learning in a technology enhanced

environment more stimulating and engaging than in a traditional classroom environment.

One of the main aims of ICT is to help students to become competent and confident users who can use the basic knowledge and skills acquired to assist them in their daily lives. Social objective of ICT is to facilitate good communication between the students, thus promoting better social understanding. ICT aims to assist students to appreciate the beauty and diversity of culture. It also aims to help students become well-cultured citizens of modern world. It achieves this as it facilitates the discovery and appreciation of various cultural heritages of different countries around the world. ICT aims to assist students to grow personally by facilitating different methods of learning. Distance-learning programs are now provided by most colleges and universities. Many people are using these programs to get degrees that would not have been able to receive without ICT. It also aims to allow the public to easily access the necessary information over the Internet.

1.1.4 Application of ICT in Different Areas

Education

There is a big scope of using ICT in schools. Educational software and computer assisted instruction material are used in many schools to teach the students or to make them do self-study. Internet is a very useful way of enhancing knowledge of the teachers and the students. The teacher can prepare his own multimedia presentation program through the computer to teach the students. ICT made the use of EDUSAT possible.

Industries

ICT is used in the industries to accomplish various tasks. Designing the product is one of the most important tasks to be carried out in the industries. ICT makes it very easy. One can get various designs of the same product with the help of ICT. Planning of different activities of different departments of an industrial firm is done through computer and it is also used in the implementation of planning.

Training

Computer Based Training (CBT) program is used in the industries to create virtual reality to train the workers in the large and medium scale industries. Simulated training can also be given to the workers of other employees, with the help of ICT in industries and in other training institutions.

Science and Engineering

ICT is very much useful in science and scientific researches. All the artificial satellites run through the computer only. It is also used to transfer data from the satellites. Supercomputers have numerous applications in astronomy, chemistry and physics. Chemical reaction occurred among different chemicals can be recorded and studied precisely through the computer. ICT is used in engineering to prepare the blue print of the buildings or bridges and to prepare the maps of different sites.

Research

ICT is used at large scale in research. During research process, ICT is used gather information about related previous researches through e-libraries and websites

dedicated to the field of research. Researcher can use the means of ICT to collect, record, classify and analyze data. ICT, especially computer is used to prepare research report and to spread the results of the research.

Computers as aid in Teaching

Computer has an impact on students learning. A positive attitude of teacher helps to enhance students' creativity, to set goals and help them to achieve the success they desire (good grades, their college degree, etc). Maintaining a positive attitude is an essential ingredient that enables one to keep on and achieving success. Technological progress and advancement compel us to be in touch with the application and operation of computers to cope with the existing requirements. So, students must be provided with the need of the society and they must know the application of information technology especially using computers in their lives. In nutshell, use of the computer in education, imparts the way for an easy, faster and convenient learning and teaching.

Computers have changed the face of society. They are no longer specialized tools to be used. As computers are a daily utility, they have gained immense importance in day to day life. Their increasing utility has made computer education the need of the day. Computers are not only storage devices and processing units but also are excellent communication media. They are the means to access the Internet and get connected to the people all around the world. They are also an effective audio-visual media.

Computers can be used to access a vast knowledge base and search for information over the internet. Only computer education can facilitate the use

of computer for purpose of communication and entertainment. Computer is one of the unique invention's of human beings. It is an electronic device or flexible machine, which can manipulate data. These manipulations may or may not be mathematical or a computer may be defined as a device that operates or function upon data. In general, computer is used to process word or numbers to generate documents, solve problems, graphics and way more. It works faster than human brain. It is a very important tool of IT. Computer technology has had a deep impact on the education sector. Thanks to computers, imparting education has become easier and much more interesting than before. Owing to memory capacities of computers, large chunks of data can be stored in them. They enable quick processing of data with very less or no chances of errors in processing. Networked computers aid quick communication and enable web access. Storing documents on computers in the form of soft copies instead of hard ones, helps save paper.

The advantages of computers in education primarily include:

1. Storage of information
2. Quick data processing
3. Audio-visual aids in teaching
4. Better presentation of information
5. Access to the Internet
6. Quick communication between teachers students and parents

Computer teaching plays a key role in the modern education system. Students find it easier to refer to the Internet than searching for information

in fat books. The process of learning has gone beyond learning from prescribed textbooks. Internet is a much larger and easier-to-access storehouse of information. When it comes to storing retrieved information, it is easier done on computers than maintaining hand-written notes.

Online education has revolutionized the education industry. Computer technology has made the dream of distance learning, a reality. Education is no longer limited to classrooms. It has reached far and wide, thanks to computers. Physically distant locations have come closer due to Internet accessibility. So, even if students and teachers are not in the same premises, they can very well communicate with one another. There are many online educational courses, whereby students are not required to attend classes or be physically present for lectures. They can learn from the comfort of their homes and adjust timings as per their convenience.

Presently the Information Technology is touching its peak. The total world is globalised through computerization. Each and every phase of life is categorized through the development of this technology. Today, with the advent of E-mail & Internet, information retrieval has come down within the snap of fingertips. Computers have changed information processing in a dramatic way. To give acceleration to make India 100% Computer Literate, it is highly essential to take computer education to the grass root level. Until & unless the end users are educated the right way to handle the technological aids, our goal cannot be achieved. So we must know the levels of awareness of computer in the secondary school students of urban and rural both. In order to achieve that goal it's essential to acknowledge the attitude and interest of teacher towards the use of computer in education.

ICT Components

Information and communication technology (ICT) is a science of extracting, processing, storing, manipulating and finally communicating the desired information from one corner to another by making integrated use of computer and telecommunication. It includes:

1. Radio and Television
2. Landline Telephones and Mobile Phones
3. Digital cameras and Video recorder.
4. Computer and Laptops
5. LCD projector and CD/DVD's
6. Internet and Intranet
7. Educational Satellite and Channels.
8. Computer Hardware and Software
9. Voice and Sound or images-Microphone, Camera, Loudspeaker.
10. Educational Satellite and Channels.

1.2 Need and Significance of the Study

The outcome of this study aims at determining whether or not the use of computers has any significant influence on the attitude and interest of teachers in secondary schools. More over education is the bedrock of any society. INDIA as a developing nation needs standard secondary schools that has available learning resources, that teacher can improvise learning resources easily and more often. Teachers utilize computer learning resources on a regular basis. This research will be a contribution

to the body of literature in the area of the effect of personality trait on teacher's interest and attitude, thereby constituting the empirical literature for future research in the subject area.

1.3 Statement of the Problem

To study the attitude of secondary school teachers towards ICT and the use of computers in education

1.4 Definitions of the Key Terms

Attitude

Attitude is a psychological construct, a mental and emotional entity that inherence in, or characterizes a person.

Computer

A computer is a device that can be instructed to carry out arbitrary sequences of arithmetic or logical operations automatically.

Secondary School

A secondary school is both an organization that provides secondary education and the building where this takes place.

ICT

Information and communication technology (ICT) is a science of extracting, processing, storing, manipulating and finally communicating the desired

information from one corner to another by making integrated use of computer and telecommunication.

1.5 Objectives of the Study

The purpose of the study is to examine the attitude towards ICT and use of computers of secondary school teachers.

1. To study the attitude towards ICT and use of computer of male and female secondary schools teachers.
2. To study the attitude towards ICT and use of computer of Govt. and private secondary schools teachers.
3. To study the attitude towards ICT and use of computer of English and Hindi medium secondary schools teachers

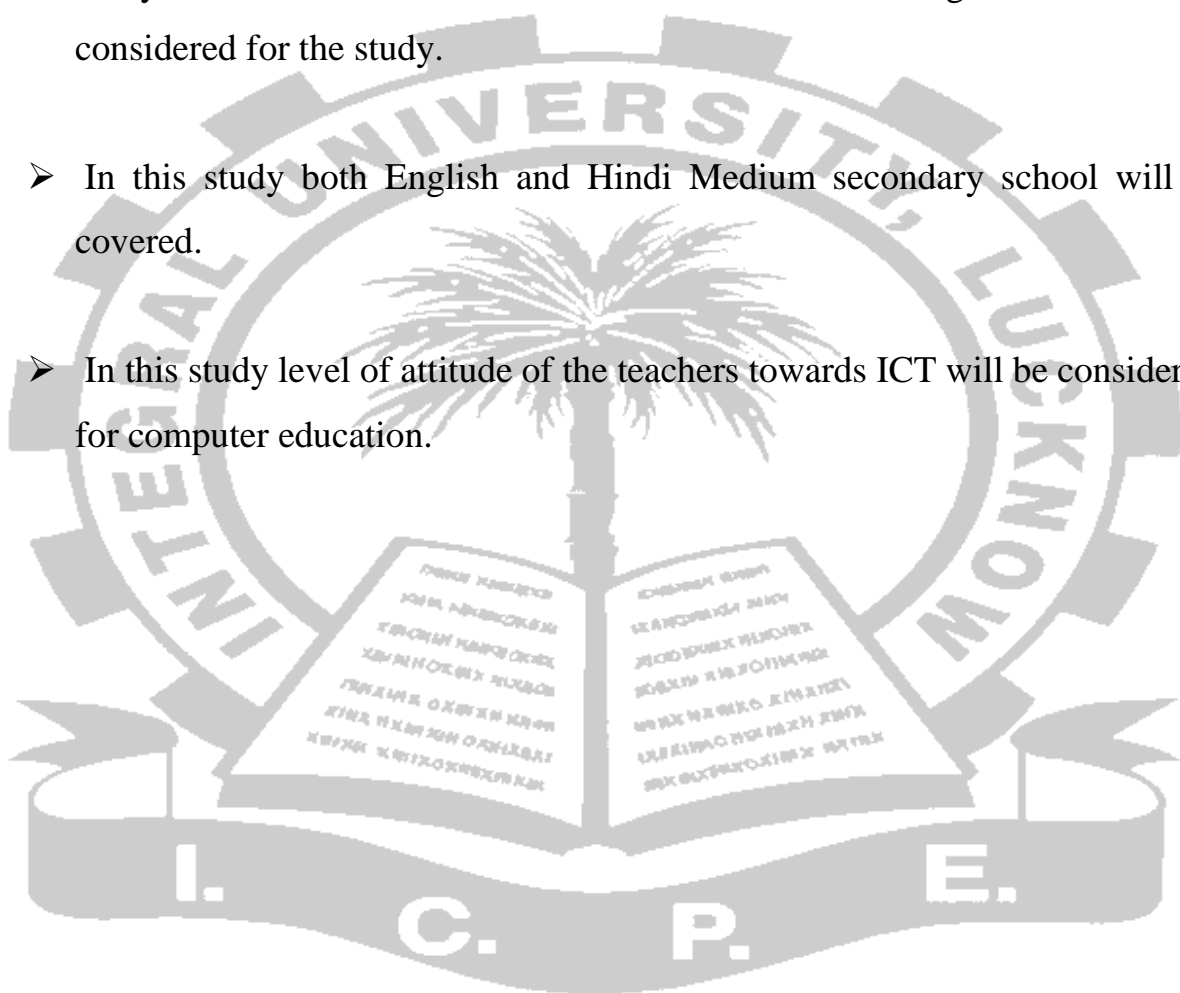
1.6 Hypotheses of the Study

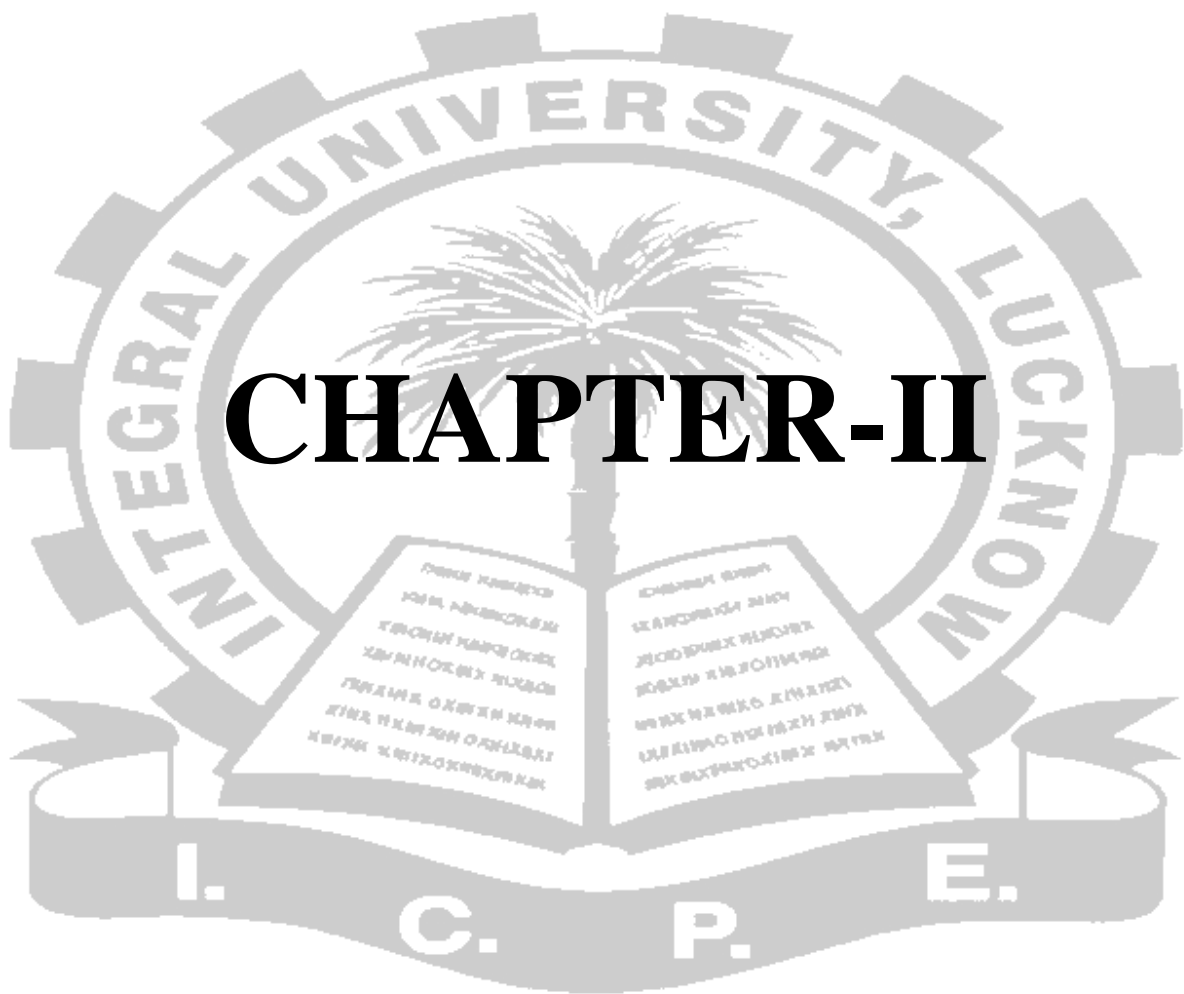
To achieve the above objectives the following hypotheses have been formulated.

1. There is no significant difference between attitude towards ICT and use of computer of male and female secondary schools teachers.
2. There is no significant difference between attitude towards ICT and use of computer of Government and private secondary school teachers.
3. There is no significant difference between attitude towards ICT and use of computer of English and Hindi medium secondary school teachers.

1.7 Delimitation of the Study

- In these study total 5 secondary schools both Government and private secondary schools of district Lucknow will be covered.
- Only class VI-X teachers of below and above the age of 40 will be considered for the study.
- In this study both English and Hindi Medium secondary school will be covered.
- In this study level of attitude of the teachers towards ICT will be considered for computer education.





CHAPTER-II

CHAPTER II

Review of the Related Literature

2.1 Introduction

A literature review is a comprehensive summary of previous research topic. The literature review surveys scholarly articles, books and other sources relevant to a particular area of research. The review should enumerate, summaries, describes, objectively evaluate and clarify this previous research. It should give a theoretical base for the research and help to determine the nature of the research. The literature review acknowledges the work of previous researches and in doing so assure the reader that your work has been well conceived. It is assumed that by mentioning a previous work in the field of study, that the author has read, evaluated and assimilated that work into the work at hand.

The review of related literature is a crucial stage at the beginning of any research activity- whether undertaking to do one's own doctoral work, master dissertation, action research, educational research, or even any sponsored survey – is examining what kind of studies have already been conducted in both one's country and overseas, and what are their findings. The review of related literature embodies the work done on computer technology and its use in the field of education with respect to teachers' attitude and interest.

In other words, when reviewing the literature, “not only do you need to engage with the body of literature , you also need to be able to compare, contrast, synthesize, and make arguments with that literature in ways that indicate a readiness to contribute to the literature itself” (O’Leary, 2010,p 81).

The notable names of the researchers who had conducted research studies are as follows:

Harrison and Rainer (1992) conducted their research using data compiled from a 1990 survey of 776 knowledge and information workers from large university in the Southern United States. They found that participants with negative computer attitude were less skilled in computer use and were therefore less likely to accept computers use and adapt to technology those with positive attitude.

Charp(2000) noted that educational researchers find a positive connection between the integration of ICT and a successful curricular outcome when ICT is properly deployed.

Kenezek et al. (2000) reported that educators with higher level of skills, knowledge and tools will exhibits higher level of technology integrations in the classroom.

Hasselbring et al. (2000) in his study ‘technology to support teacher development’ had shown that improving the quality of education system depends upon teachers training and development. He argues that teacher should be trained to view ICT as a resource and to use technology in classroom activities, whilst added that educational authorities are responsible for teaching training.

Kong et al.(2000) investigated study on ‘Possibilities of creative and lifelong learning.’ They found out that integration of IT and curriculum is the main force in promoting the full acceptance of IT by teachers and students.

Law(2000) in his study ‘Changing classroom changing schools’ found that teachers and students have variously gained in their mastery of ICT skills. When the focus was on technology supported teaching, the teachers were all generally more competent and many of them have mastered the skills of multimedia production and programming.

Mumtaz(2000) worked on ‘Factors effecting teachers ‘adoption of technology in secondary schools’. She pointed out lack of administrative, technical and financial support as problems that prevent teachers from using computers in their teaching.

Grabe(2001) stated that technology should facilitate meaningful learning in the classroom. Also, it should engage the thinking, decision making, problem solving and reasoning behavior of the students.

Pelgrum(2001, cited in Afshari et al, 2009) conducted study on ‘The educational potential of new information technology’. He claimed that the success of educational innovations depend largely on the skills and knowledge of teachers. The study reported that teacher’s lack of knowledge and skills is among the most inhibiting obstacles to the use of computers in schools.

Hountz and Gupta (2001) found that male and female had rated themselves on their ability to use the computer is significantly in different ways.

Green et al.(2002) in a study of the ‘Impact of the internet on teacher practice and classroom culture’ found that students were engaged when accessing the Internet.

Girls were comfortable searching for information on the Internet and reading multiple pages of text and were likely to take time to read what they found.

Haider(2002) in his study ‘ Emirates secondary school science teachers’ perspective on the nexus between modern science and Arab culture’ found that secondary school science teachers did not view modern science as a part of European culture and perceived no differences between modern science and Arab culture. It appeared that Arab teachers lacked an understanding of the social component of science and training was required in this aspect of science. The author argues that when they are discussing culturally critical scientific issues in class. Arab science teacher should assume the role of culturally broker to facilitate students’ understanding the science. Teachers may therefore find difficulty in delivering the content of science within their community’s ethics cultural and ethical knowledge.

Levin et al.(2002) point out those students think of the interest as an important way to collaborate on project work with classmates more effective. They referred that the Internet provides ways of presenting material that differs from how it is presented in class and it is also a resource that is always available, patient and non-judgmental.

Agaba(2003) conducted the study on the challenges and way forward’. He found that lack of skills as one of the problems explaining underutilization of Miserere University Library electronic information resources by academic staff.

Munyantware(2003) in his study ‘problems affecting adoption of technology by mathematics and science teachers in secondary schools’ found out that teachers

with lower ICT proficiency are not willing and have less confined to use ICT for teaching. These suggest that teacher's information communication technological skills are critical for successful ICT implementations in the classroom.

Sarangi (2003) found that the teacher educators have low positive attitude of ICT. Teacher educators had limited access and idea about how the computers can be used in teaching-learning situations.

Nachmis et al.(2004) stated that staff training should be continuous process for regular updates with development of ICT. Faculty staff requires ICT training not just in the choice and use of appropriate technologies, but on how people and in instructional design.

Albirni (2004) conducted a study to investigate the attitude of EFL teachers in education. He found that teachers have positive attitude towards technology use in education.

Kozma(2005) have demonstrated that ICT help deepen students' content knowledge, engage them in constructing their own knowledge, and support the development of 43 complex thinking skills. He reported that ICT alone cannot create this kind of teaching and learning environment. Teachers must know how to structure lessons, select resources; guide activates and supports this learning process many traditionally trained teachers are not prepared to take on these tasks.

UNESCO (2005) reported that teachers, professors, technical and administrative staff must be given training that enables them to integrate new information and communication technologies into their teaching programs. The lack of technical

skills of maintaining the functionality of computers confused teachers to integrate ICT in the classroom.

Akankwasa(2006) conducted study on ‘Problems affecting the levels of computer use for instructional purpose by technology teachers in government schools’. He found out that although many teachers share beliefs that educational technology could promote learning and that the use of ICT is desirable, they are reluctant to use educational ICT because of insufficient support and resources.

Hew & Brush (2007) in their study they found that negative attitudes of teachers and their limited sources of knowledge about technology integrations are the main barriers of technology integrations of technology in education.

Farrell(1999, cited in Sife et al, (2007) reported that ICT training and workshops are needed not only to improve the skills of the teachers but also as a means of getting them involved in the process of integrating ICT in teaching and learning.

Mehra and Nawa(2009) conducted a study on “School teachers attitude towards Information and Communication Technology (ICT)”. The school teachers on the whole exhibits positive attitude towards ICT, so ICT must be given higher priority in the teacher education curriculum so that the future teachers can cope up with the various challenges in education system, more, more specifically the new roles of teachers in ICT based teaching-learning system.

Husain (2010) found that, teachers have a positive attitude towards ICT and teachers thinks that using ICT skills in developing and presenting information’s is an essential technical competency that teachers need to require.

Vijaykumar R (2011) has reviewed the role of technology as catalyst of teaching and learning process in India. Information and communication Technology (ICT) has become an integral part of today's teaching and learning process. Effective use of technology can motivate students, make our classes more dynamic and interesting and renew teacher enthusiasm as they learn new skills and techniques. However technology cannot replace a teacher but it can be used only as a supplement tool in teaching learning process, thereby enhancing learning environment. Updating the technical, professional knowledge and skills of teacher is the need of the hour. Even though teachers may have mastered the traditional pedagogies in teaching their students, the rapid changing world dictates that these are no longer sufficient. The teachers must acquire new knowledge and skills themselves before they can prepare their students to meet the demands and challenges of the 21st century. In order to make education meaningful, exciting interesting and accessible to all, technology must be linked with the process of learning. The effective handling of ICT in classroom by teachers will change the very nature of instruction processes.

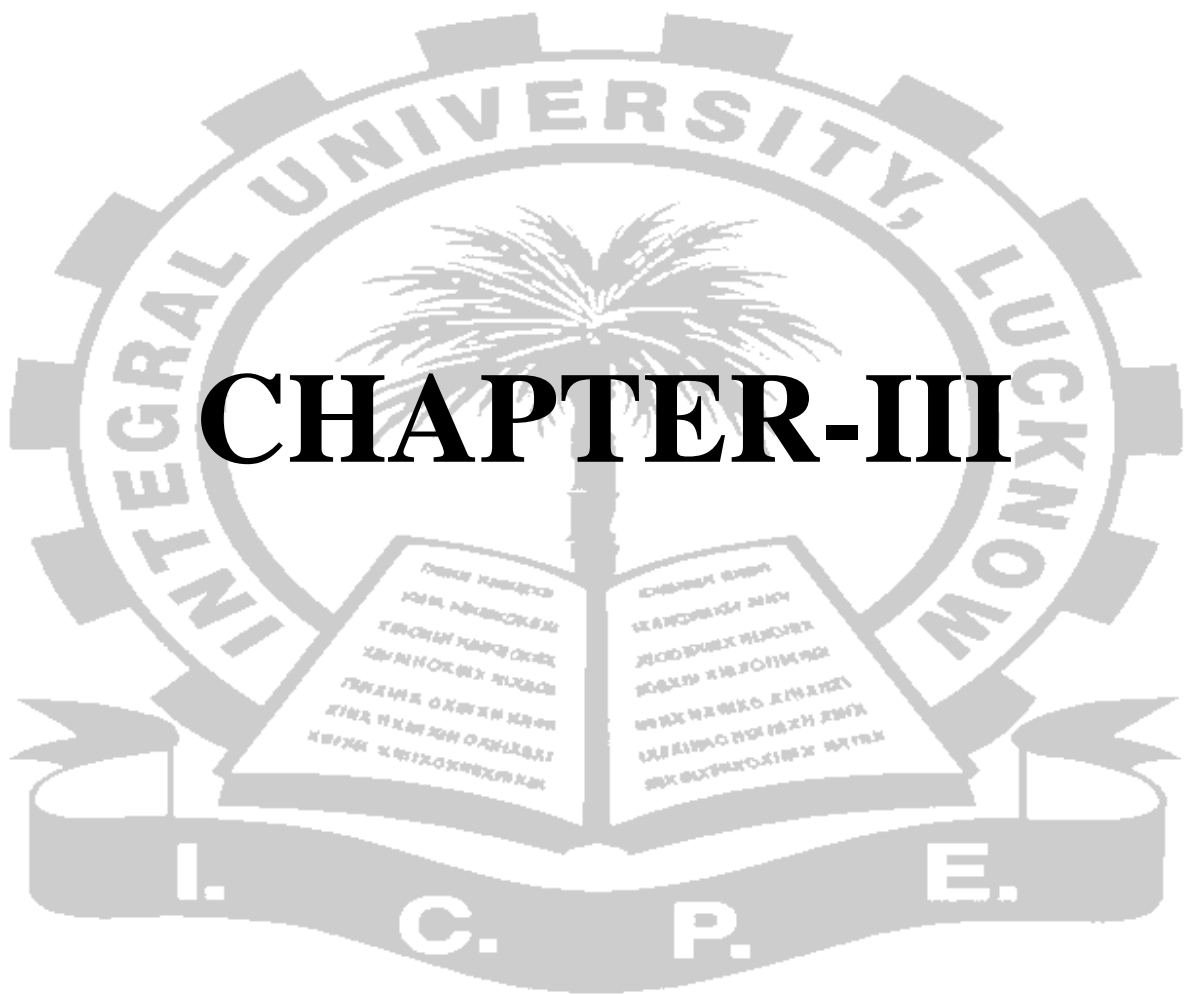
Young et al (2012) studied on 'Preparing instructors for quality online instructions'. They found that warned an instructor's online role can be more difficult than one experienced in traditional classroom. Online instructions were thought to have the extra burden of preparing courses well in advance constantly facilitating the course, modeling good communication skills and adjusting courses for the varied needs of students.

Ndibalema, P. (2014) on his study entitled “ Teachers attitude towards use of ICT” result indicate that the teachers have a favorable attitude towards the use of ICT.

Other studies have suggested that the masculine image of the computer has deterred females from benefiting from the technology and this has made them less confident or more anxious (Culley 1988) resulting in females holding more negative attitudes to computers than males (Campbell 1990). (On squinty, female students tends to use computers less even when given equal access (Muir-1987). The research on gender and composting has after reported, though not conclusively, that males have more experience and make more use of computers. (Brosnath & Lee, 1998, Balka and Smith 2000).

Conclusion

The related literature from various scholars and past researcher collected from secondary sources i.e. textbooks, magazines, internet and journals, it shows that to a large extent ICT implementations in developing countries is still less. Majority of the students and teachers had positive reaction towards ICT programs. Teachers and principals believed that teaching through ICT is better than traditional way of teaching. Information Communication Technology (ICT) can motivate children to perform better and change their attitude toward school and learning.



CHAPTER-III

CHAPTER-III

Design of the Study

3.1 Introduction of Methodology

This section of the research study include detailed explanation of analysis of the research design, data collection, techniques and data analysis, population and sample data used in the study.

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods or techniques but also the methodology. Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode, the median or the standard deviation or chi-square, how to apply particulars research techniques, but they also need to know which of these methods or techniques, are relevant and which are not, and what would they mean and indicate and why.

Researchers also need to understand the assumptions underlying various techniques and they need to know the criteria talk of research methodology concerning a research problem or study by which they can decide that certain techniques and procedures will be applicable to certain problem and others will not. All this mean that it is necessary for the researchers to design his methodology for his problem as the same may differ from

problem to problem. The scope of research methodology is wider than that of research methods. Thus, when we talk of research methodology we not only talk of the research methods but also consider the logic behind the methods we use in the context of our research study and explain why we are using a particular methods or techniques and why we are not using others so that research result are capable of being evaluated either by the researchers himself or by others.

The investigator has followed the descriptive method of research it is because the investigator is seeking to find out the attitude of secondary school teachers towards ICT and the use of computers in education.

Descriptive Method

Descriptive research does not fit neatly into the definition of either quantitative and qualitative research methodologies, but instead it can utilize elements of both, often within the same study. The term descriptive research refers to the type of research question, design, and data analysis that will be applied to a given topic. Descriptive statistics tell what is, while inferential statistics try to determine cause and effect.

The type of question asked by the researcher will ultimately determine the type of approach necessary to complete an accurate assessment of the topic at hand. Descriptive studies, primarily concerned with finding out **“what is, “might be** . Descriptive research can be either quantitative or qualitative. It can involve collections of quantitative information that can be tabulated along a continuum in numerical form, such as scores on a test or the number of times a person choose to use a-certain feature of a multimedia program, or it can describe categories of

information such as gender or patterns of interaction when using technology in a group situation. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes data collection (Glass & Hopkins, 1984). It often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution. Because the human mind cannot extract the full import of a large mass of raw data, descriptive statistics are very important in reducing the data to manageable form.

Descriptive studies report summary data such as measures of central tendency including the mean, median, mode, deviation from the mean, variation, %, and correlation between variables. Survey research commonly includes that type of measurement, but often goes beyond the descriptive statistics in order to draw inferences. Descriptive research is unique in the number of variables employed. Like other types of research, descriptive research can include multiple variables for analysis, yet unlike other methods, it requires only one variable (Borg & Gall, 1989). For example, a descriptive study might employ methods of analyzing correlations between multiple variables by using tests such as Pearson's Product Moment correlation, regression, or multiple regression analysis. Good examples of this are the Kunpfer and Hayes (1994) study about the effects of the channel One broadcast on knowledge of current events, Manaev's (1991) study about mass media effectiveness, McKenn's (1993) study of the relationship between attributes of a radio program and its appeal to listeners, Orey and Nelson's (1994) examination of learner interactions with hypermedia environments, and Shapiro's (1991) study of memory and decision processes.

Three main purposes of research are to describe, explain, and validate findings. Description emerges following creative exploration, and serves to organize the findings in order to fit them explanations, and then test or validate those explanations (Krathwohl, 1993). Many research studies call for the description of natural or man-made phenomena, and so on. The description often illuminates knowledge that we might not otherwise notice or even encounter. Several important scientific discoveries as well as anthropological information about events outside of our common experiences have resulted from making such descriptions. For example, astronomers use their telescopes to develop descriptions of different parts of the universe, anthropologists describe life events of socially a typical situations or cultures uniquely different from our own, and educational researchers describe activities within classrooms concerning the implementations of technology. This process sometimes results in the discovery of stars and stellar events, new knowledge about value systems or practices of other cultures, or even the reality of classroom life as new technologies are implemented within schools. Educational researchers might use observational, survey, and interview techniques to collect about group dynamics during computer-based-activities. Descriptive studies have an important role in education research. They have greatly increased our knowledge about what happen in school.

3.2 Design of the Study

Research design is considered as a “Blueprint” for research, dealing with at least four problem: which questions to study, which data are relevant, what data to collect, and how to analyze the result. The best design depends on the research question as well as the orientation of the researcher. Every design has its +ve and -ve sides. Research design can be divided into fixed

and flexible research designs. Others have referred to his distinction as ‘quantitative research design, and ‘qualitative research design, respectively. However, fixed design need not be qualitative, and flexible design need not be qualitative. In fixed design, the design of the is fixed before the main stage of the data collection takes place. Fixed design are normally theory driven, otherwise it’s impossible to know in advance which variables are measured quantitatively. Flexible design allow for most freedom during the data collection process. One reason for using a flexible research design can be the variable of interest is not quantitatively measurable, such as culture. In other cases, theory might not be available before one starts the research. The purpose of the present study was to study the attitude of secondary school teachers towards ICT and the use of computers in education, *Therefore, researcher used Dr. (Mrs.) Nasrin and Dr.(Mrs.) Fatima Islahi Attitude Scale towards information technology.*

Independent Variables

- (a) Gender
- (b) Medium
- (c) Type of School

Dependent Variables

- (a) Attitude

3.3 Population

A population is any group of individuals that has one or more characteristics in common and that are of interest to the researcher. A population is defined in a

group of individuals with at least one common characteristics which distinguishes that group from other individuals. The term population, in statistical point of view, it means the whole of total quantity of something. Population generally means the aggregate or totality or whole of something or total number of things, beings, matters etc. In research, generally the whole or universe or the totality never can be studied within a very short period of time. Therefore for systematic and scientific study, samples are collected according to the demand and necessity of research problems undertaken for the study.

The population consisted of 100 teachers in 5 schools of Lucknow.

Sample

Investigator has used the purposive and sample random techniques to draw the sample of the study.

A sample is a portion of population which is selected for the purpose of study or investigation. Since in educational research or other disciplines of behavioural sciences is neither practically expedient nor scientifically desirable to approach the total population, the technique of population being tapped only a part of population is drawn and studied. Thus, a sample is subset of population units consisting of three elements the members or unit selected the information or data collected and inference or generalizations made.

Description of the Sample

A sample thus is a miniature part of the whole or universe i.e. **the population**. In research, specifically in quantitative research, a sample is representation of the population. In a sense, it is smaller representation of whole. By the observation or systematic of small amount, number or quantity, the investigator can make certain

inferences or can definitely make general conclusion about the characteristics, quality or attribute of the population or the universe or the totality from which the specific small amount or number is taken out or selected. Therefore, the investigator has taken due care in selecting the appropriate sample technique. The random sample techniques were used for selecting the sample of the present study. The representative of the study includes 100 secondary school teachers of Lucknow.

Table presenting schools selected from Lucknow district:

S. No.	Name of schools	Male	Female	Total
1.	Lucknow Public College, Lucknow	10	28	38
2.	35 PAC Police Modern School, Lucknow	00	08	08
3.	Red Rose Senior Secondary School Lucknow	08	20	28
4.	Rameshwar Vidyalaya Inter College Lucknow	10	06	16
5.	Techno Academic Senior Secondary School, Lucknow	02	08	10
	TOTAL	30	70	100

3.4 Description of Tools Used

Tool **ASTITT scale** developed by **Dr. (Mrs.) Nasrin and Dr. (Mrs.) Fatima Islahi**. Attitude scale consists of 30 items in which there are 18 positive and 12 negative items. Each item is provided with five alternatives. Responses are obtained on the booklet itself. There is still no time limit but generally 15 minutes have been found sufficient for responding all items.

Tool

The ASTITT scale appears to be an adequate scale and a dependable tool for measuring teachers' attitude towards information technology as the scale has a reasonably high reliability and validity.

It may prove to be useful for all types of teachers irrespective of their background, research scholars and guidance workers. It can also be used by policy makers, administrators and teacher educators for comparing the performance and effectiveness of different training institution in the area of attitude development. In training colleges programs and radical redesign of curricula in preparation programs in colleges and universities.

Reliability

“Reliability is a degree to which a test consistently measures whatever it’s measuring” (**Gay and Airasian, 2000**). It is consistency or repeatability of the measures. Reliability in this study utilized Cronbach’s alpha, which estimates internal consistency reliability by finding out how items of an instrument relate to each other and to the total instrument. This was calculated using SPSS 12.0 statistical package.

Using the scores of subjects on 30 items of the final form, reliability of ASTITT Scale was calculated. The polarity of the negative items in the Linkert-type scale was reserved. This revised polarity was used for subsequent analyses.

Validity

Content validity is “the degree to which a test measures an intended content area” (Gay and Airasian, 2000). Content validity was also established by the panel. The instrument was evaluated during and after development. Feedback from the panel of experts was used to make modification and clarification prior to and after conducting the pilot study. The content validity is claimed on the basis of the fact that items were accumulated as a result through investigation of the literature on ASTITT in specific areas. These items were further reviewed and evaluated by a number of judges who are in close acquaintance with the teacher or his job. Items for which there has been 100% agreement amongst judges regarding their relevance to ASTITT are included in the scale. In addition, differences in mean attitude scores were among the different groups with different attitude towards information technology which further validate the scale.

Scoring

The respondents were asked to indicate the responses of the items by marking any one of the five response options.

Table for the scoring of items.

POSITIVE ITEMS	RESPONSE	NEGATIVE ITEMS
5	STRONGLY AGREE	1
4	AGREE	2
3	UNDECIDED	3
2	DISAGREE	4
1	STRONGLY DISAGREE	5

3.5 Statistical Technique

The analysis of the data was done by using quantitative techniques. The analysis has been carried out by using statistical techniques. The analysis has been carried out by using statistical techniques which were chosen only after the investigator found it to be most appropriate and compatible to the data. Each statistical technique is based upon its own specific assumptions regarding the nature of the sample, its universe and research condition like computation of means and standard deviation.

Arithmetic Mean

$$x = \frac{\sum fx}{N}$$

f = frequency

x = mid-point

N= number of samples

Standard Deviation

$$\sigma = \frac{N\sum x^2 - (\sum x)^2}{N}$$

σ :- Standard Deviation

N :- Total Number of Data

f - Frequency

$\sum x$:- Sum of x scores

$\sum x^2$ – Sum of squares of x

t-test

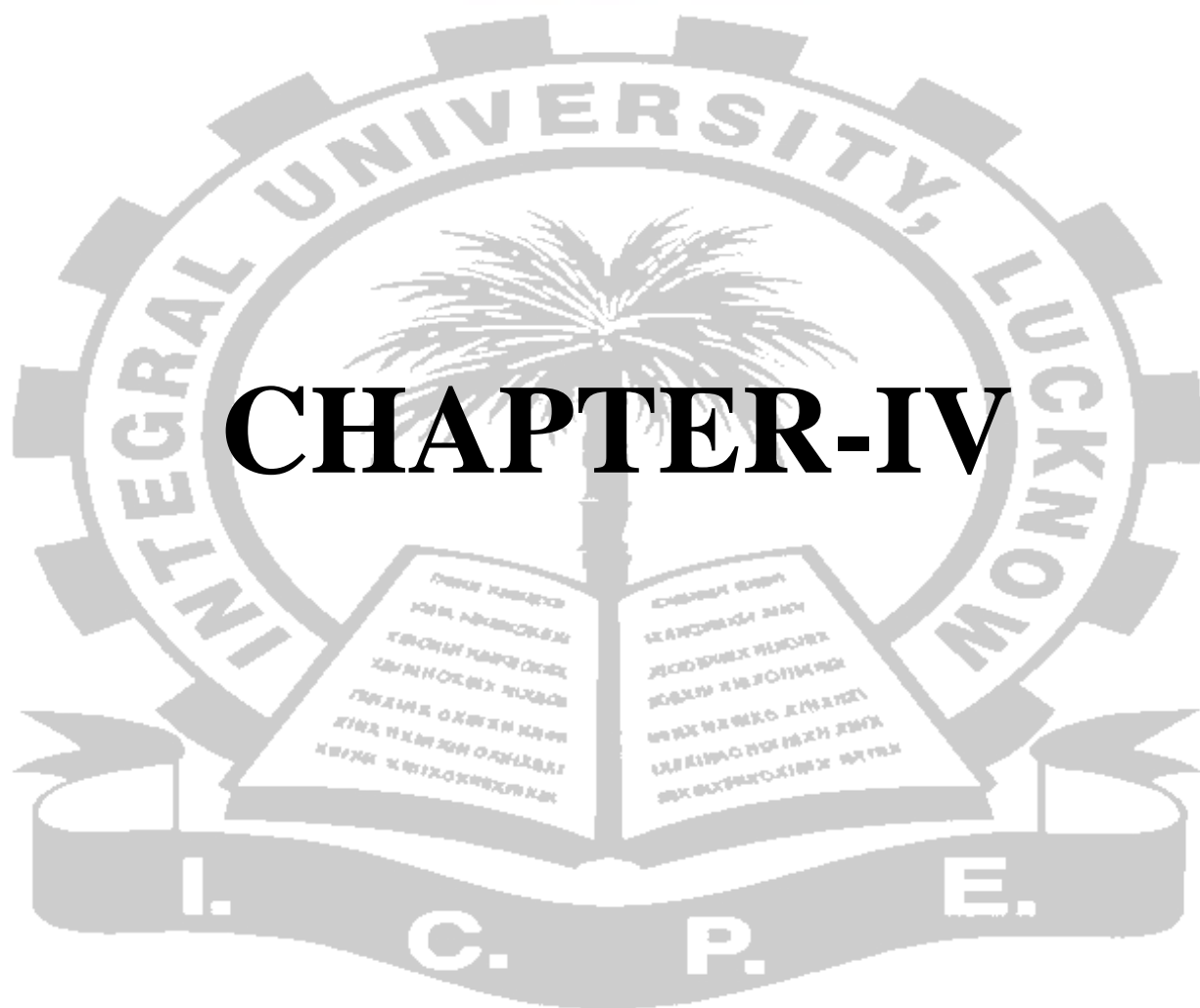
$$t = \frac{M1 - M2}{\sigma_D}$$

Where,

$M1$ = Mean of first group

$M2$ = Mean of second group

σ_D = Difference between standard error of means



CHAPTER-IV

CHAPTER-IV

Data Analysis and Interpretation

The most important factor in educational investigation is brought about by critical analysis and the discussion of the observations. After analyzing the data the next step is to interpret it. Interpretation refers to the task of drawing inferences from the collected facts after an analytical study. In one sense, interpretation is concerned with relationships within the collected data's. Interpretation is the device through which the factors that seem to explain what have been observed by researcher in the course of the study. It can be understood and it provides a theoretical conception which can serve as a guide for further research. Interpretation is essential for the simple reason that the usefulness and utility of research findings lies in proper interpretations.

The investigator in accordance with the objectives has analyzed the attitude of the secondary school teachers towards ICT and use of Computers in education with different variables like male and female government and private, English and Hindi medium.

Analysis

Hypothesis-1 There is no significant difference between attitude towards ICT and use of computer of male and female secondary schools teachers.

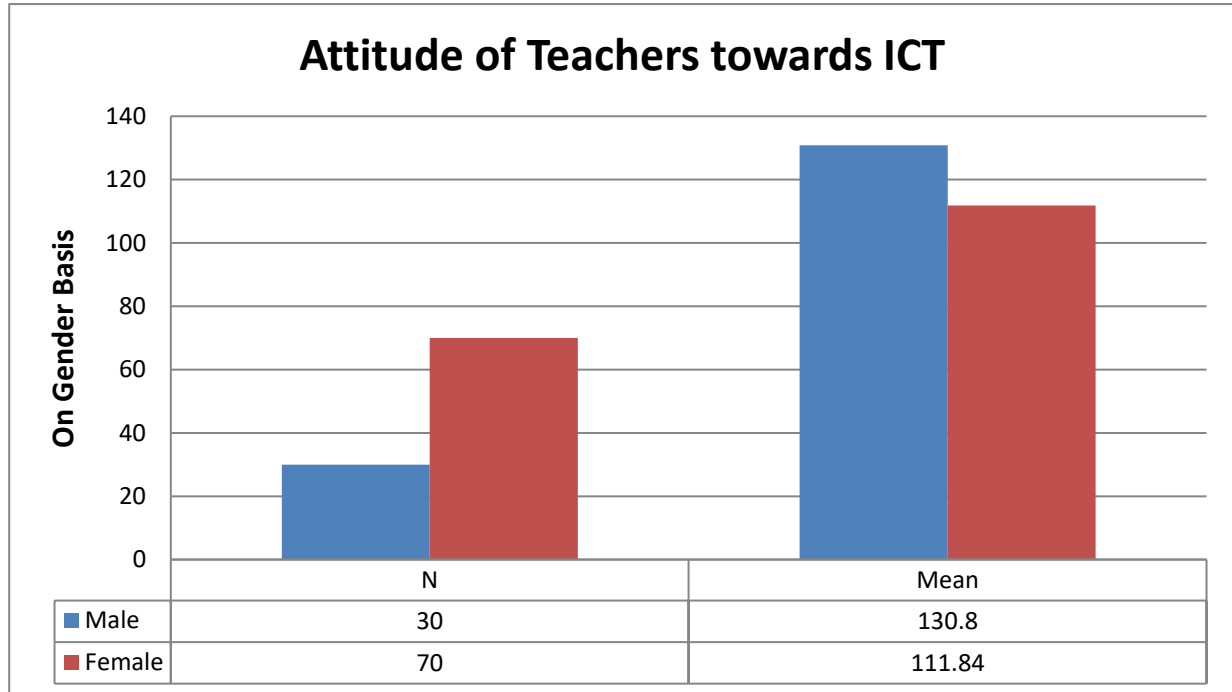
Table-1

Gender	N	Mean	Std. Deviation	Obtained t-value
Male	30	130.80	14.656	6.683
Female	70	111.84	12.236	

The above table shows the Mean and SD of male and female of secondary school which is 130.80 and 14.656 respectively and 111.84 and 12.236 respectively the calculated T value is 6.683 at df 98 which is greater than the tabulated value i.e.1.96 at 0.05 level of significance. This reveals that there is significance difference in attitude of male and female teachers towards ICT. The hypothesis “There is no significant difference between attitude towards ICT and use of computer of male and female secondary schools teachers.” is rejected.

As male teachers been lesser in number shows higher attitude towards use of computers and are keen in gaining knowledge through technology, while female teachers shows lesser attitude towards use of computer and starts to panic and become anxious and are lesser inclined towards gaining knowledge through ICT. As also stated by the research of **Hountz and Gupta** in 2001 found that male and female had rated themselves on their ability to use the computer is significantly in different ways.

Graph 1



Hypothesis 2-There is no significant difference between attitude towards ICT and use of computer of Private and Government secondary school teachers

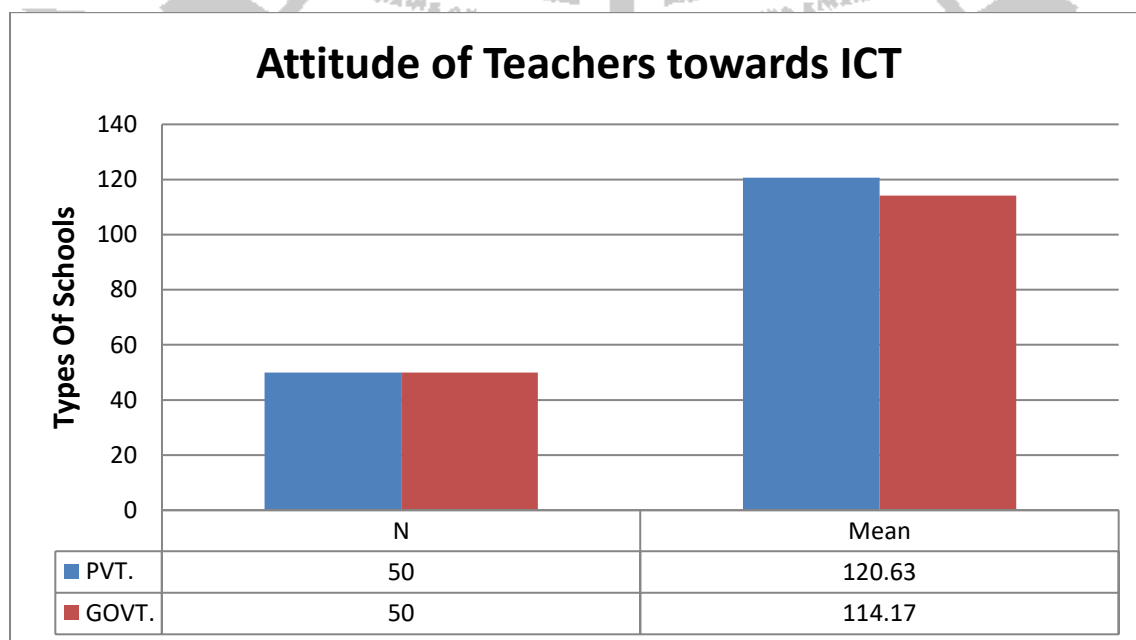
Table2. Attitude of Teachers on the basis of Types of School

Types of School	N	Mean	Std. Deviation	Obtained t-value
PVT.	50	120.63	11.827	2.106
GOVT.	50	114.17	18.409	

The above table shows the Mean and SD of private and government secondary school which is 120.63 and 11.827 respectively and 114.17 and 18.409 respectively the calculated T value is 2.106 at df 98 which is greater than the tabulated value i.e.1.96 at 0.05 level of significance. This reveals that there is significance different in attitude of private and government teachers towards ICT. The hypothesis “There is no significant difference between attitude towards ICT and use of computer of Private and Government secondary schools teachers.” is rejected.

As private schools provide better environment and have made technological advancements by using smart classrooms to help teachers to enhance their knowledge as well for better understanding while in Government schools no such facilities are provided some schools didn't have proper computer rooms. As stated by **Hew & Brush** in 2007, their study found that negative attitudes of teachers and their limited sources of knowledge about technology integrations are the main barriers of technology integrations of technology in education.

Graph 2



Hypothesis 3: There is no significant difference between attitude towards ICT and use of computer of English and Hindi medium secondary school teachers.

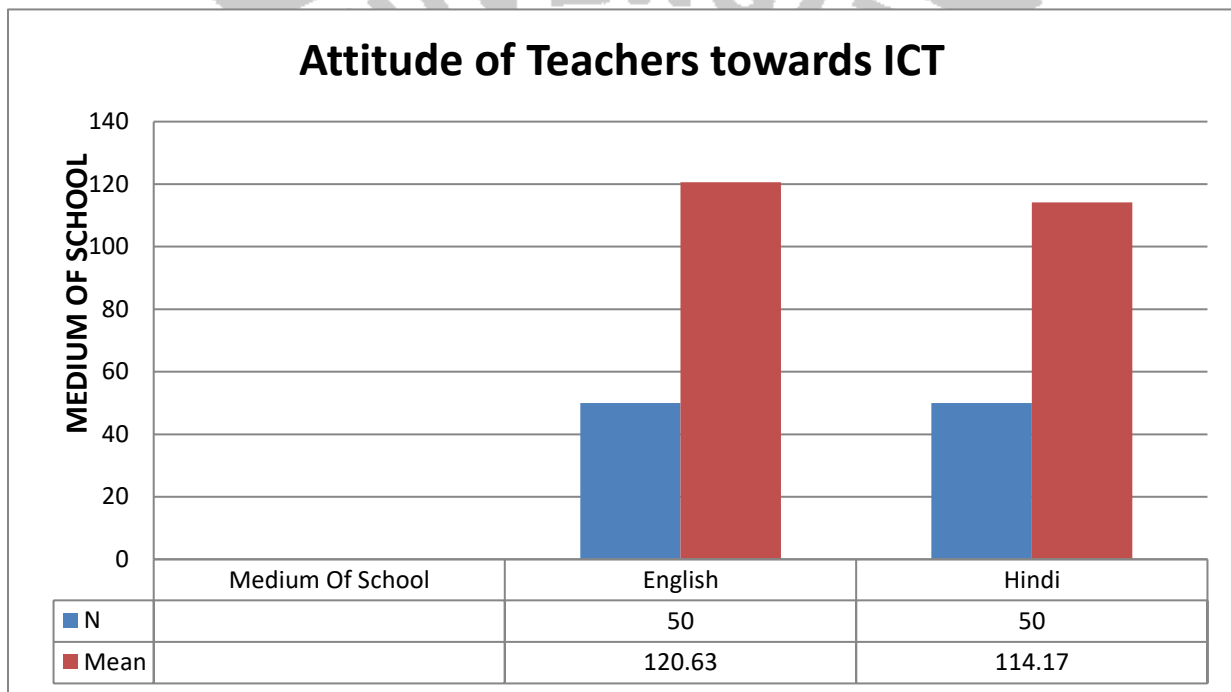
Table3. Attitude of Teachers on the basis of Medium of School.

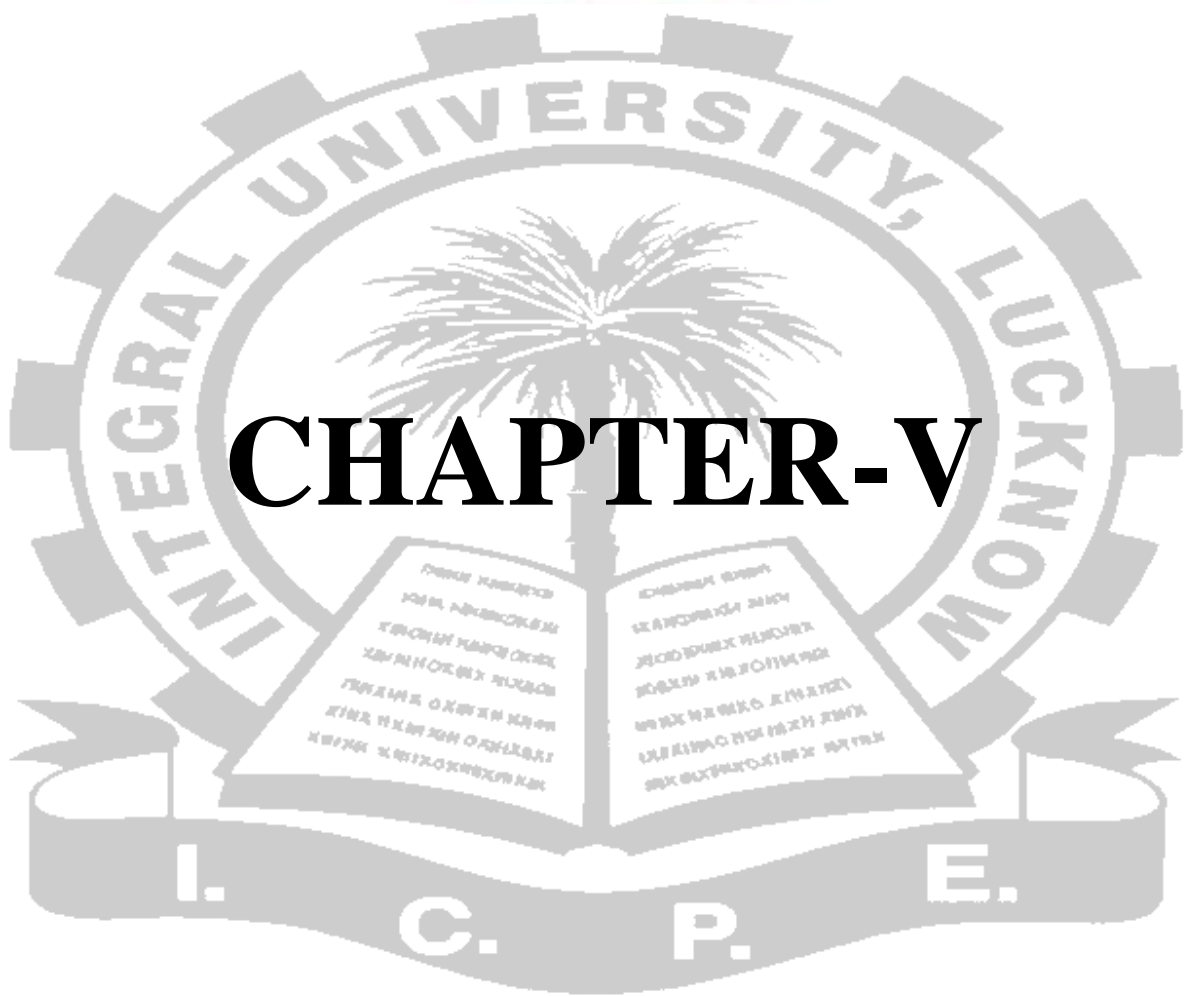
Medium Of School	N	Mean	Std. Deviation	t-value (calculated) df is 98.
English	50	120.63	11.827	2.106
Hindi	50	114.17	18.409	

Interpretation: The above table shows the Mean and SD of English and Hindi medium secondary school .which is 120.63 and 11.827 respectively and 114.17 and 18.409 respectively the calculated T value is 2.106 at df 98 which is greater than the tabulated value i.e.1.96 at 0.05 level of significance. This reveals that there is significance different in attitude of English and Hindi medium teachers towards ICT. The hypothesis “There is no significant difference between attitude towards ICT and use of computer of English and Hindi medium secondary schools teachers.” is rejected. Maximum of English medium schools have a basic guideline that enables every teacher to be well equipped in computer working and proficiency while on the other hand Hindi medium schools are lesser focused on the use of computers as well as technology. Second most important factor that plays role is of language barrier. As stated by **UNESCO** in the report of 2005 that teachers, professors, technical and administrative staff must be given training that

enables them to integrate new information and communication technologies into their teaching programs. The lack of technical skills of maintaining the functionality and language of computers confused teachers to integrate ICT in the classroom.

Graph 3





CHAPTER-V

CHAPTER V

Findings, Educational Implications and Suggestions

5.1 Findings-

For the present study the major findings of the study are:

- 1. As per the first objective:** To study the attitude towards ICT and use of computer of male and female secondary schools teacher the result drawn are as:-
 - There is a significant difference found between the mean of attitude score towards ICT and use of computer in education of male and female secondary school teachers.
 - The mean of attitude score shows that male have higher attitude towards ICT and use of computers in education in respect to females.
- 2. As per the second objective:** To study the attitude towards ICT and use of computer of Government and private secondary schools teachers the result drawn are as:
 - There is a significant difference found between the mean of attitude score towards ICT and use of computer of Government and private secondary school teachers.
 - Majority of government female teachers found that the use of computer in teaching and learning stresses them out in respect to private school female teachers.

- There were few teachers in private school who knows how to fix something in computer if anything goes wrong while government teachers were not well equipped and may panic.
- Private schools teachers were fully equipped as to perform task using computers as they teach by the help of smart classroom while in government teachers it lacks as the school doesn't have a proper computer lab.

3. **As per the third objective:** To study the attitude towards ICT and use of computer of English and Hindi medium secondary schools teachers the result drawn are:-

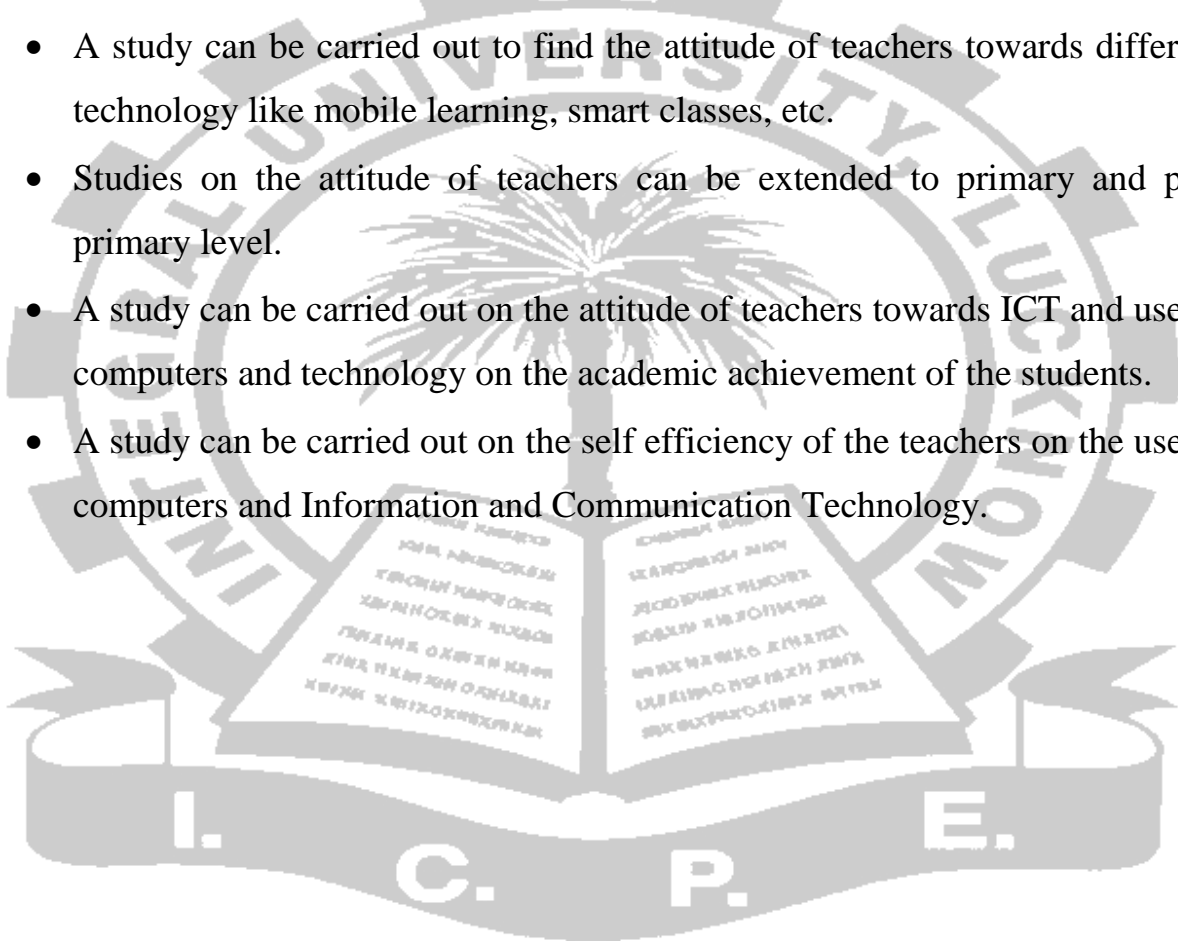
- There is a significant difference found between the mean of attitude score towards ICT and use of computer of Hindi and English medium secondary school teacher.
- Majority of Hindi medium teachers found that the use of computer in teaching and learning stresses them out in respect to English medium school teachers due to language barrier.
- Teachers of English medium school knows how to fix something in computer if anything goes wrong while Hindi medium school teachers were not well equipped and starts to panic.

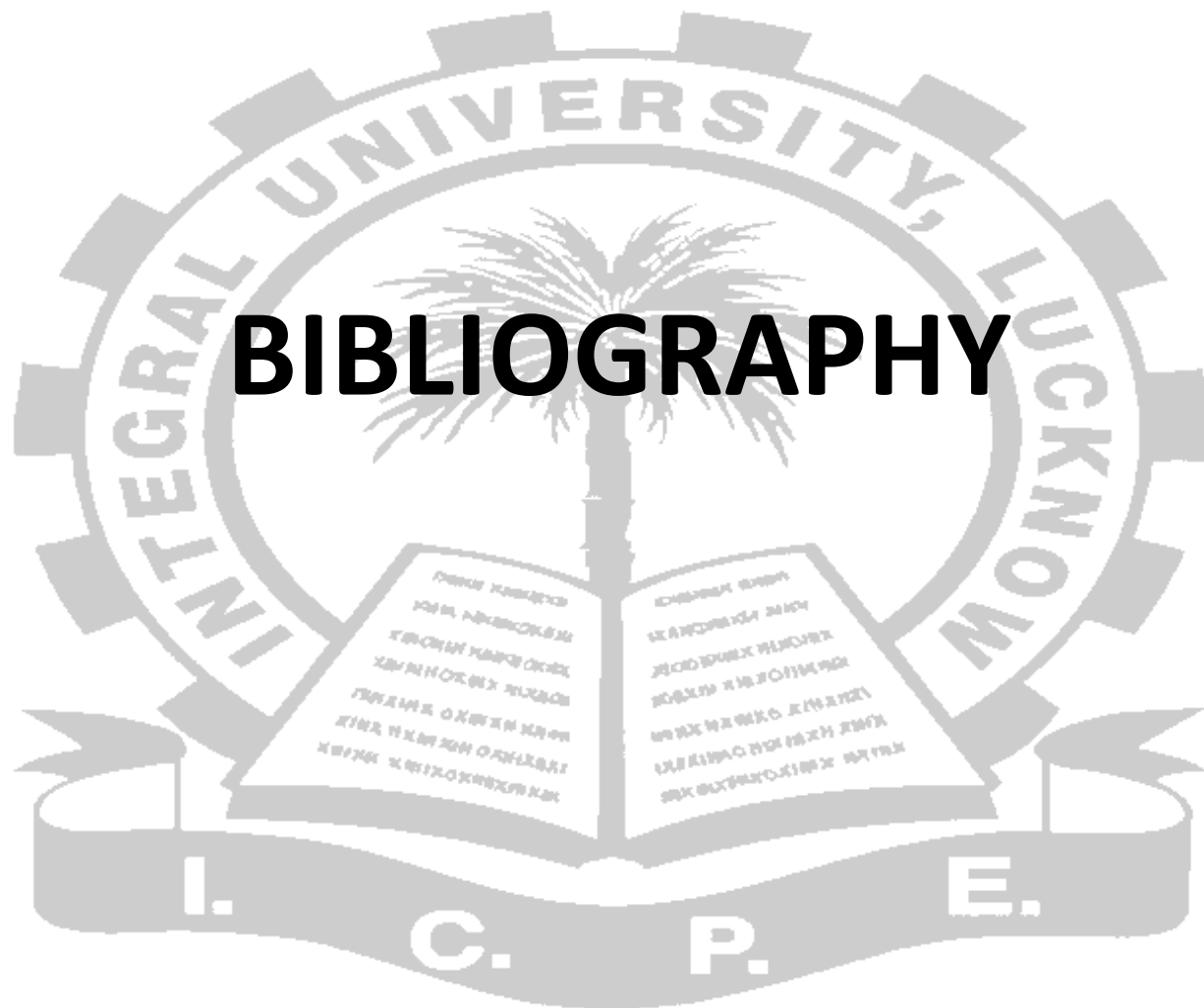
5.2 Educational Implications

- The use of the computers in teaching and learning stress out some teachers which can be reduced by giving them proper training about the use of computers.
- The idea of using computer in teaching and learning makes few teachers doubtful can be reduced by updating the new knowledge.
- Some teachers find that the computer is not conducive to students learning as they think it is not easy to use and can reduce their access of proper knowledge.
- By using and acquiring the knowledge of ICT, student teacher will become effective teacher.
- Some teachers find that it was very complicated to find the relevant information for searching through internet this can be reduced by providing them foundational skills in ICT that teachers need to learn before they can participate in an ICT rich classroom.
- There were teachers who find out that learners might get distracted by the use of technology in the class and consider trial and error method much better in context of proper learning of the learners.
- Some teachers find difficulty in using IT devices computer, email services, internet etc, for teaching purpose. This can be reduced by adding training programs, revised training programs.

5.3 Suggestions for Further Researches

- Studies on the attitude of teachers can be extended to particular subject teachers.
- Studies on the attitude of teachers can be extended to other educational levels like graduation and post-graduation.
- A study can be carried out to find the attitude of students towards ICT.
- A study can be carried out to find the attitude of teachers towards different technology like mobile learning, smart classes, etc.
- Studies on the attitude of teachers can be extended to primary and pre-primary level.
- A study can be carried out on the attitude of teachers towards ICT and use of computers and technology on the academic achievement of the students.
- A study can be carried out on the self efficiency of the teachers on the use of computers and Information and Communication Technology.





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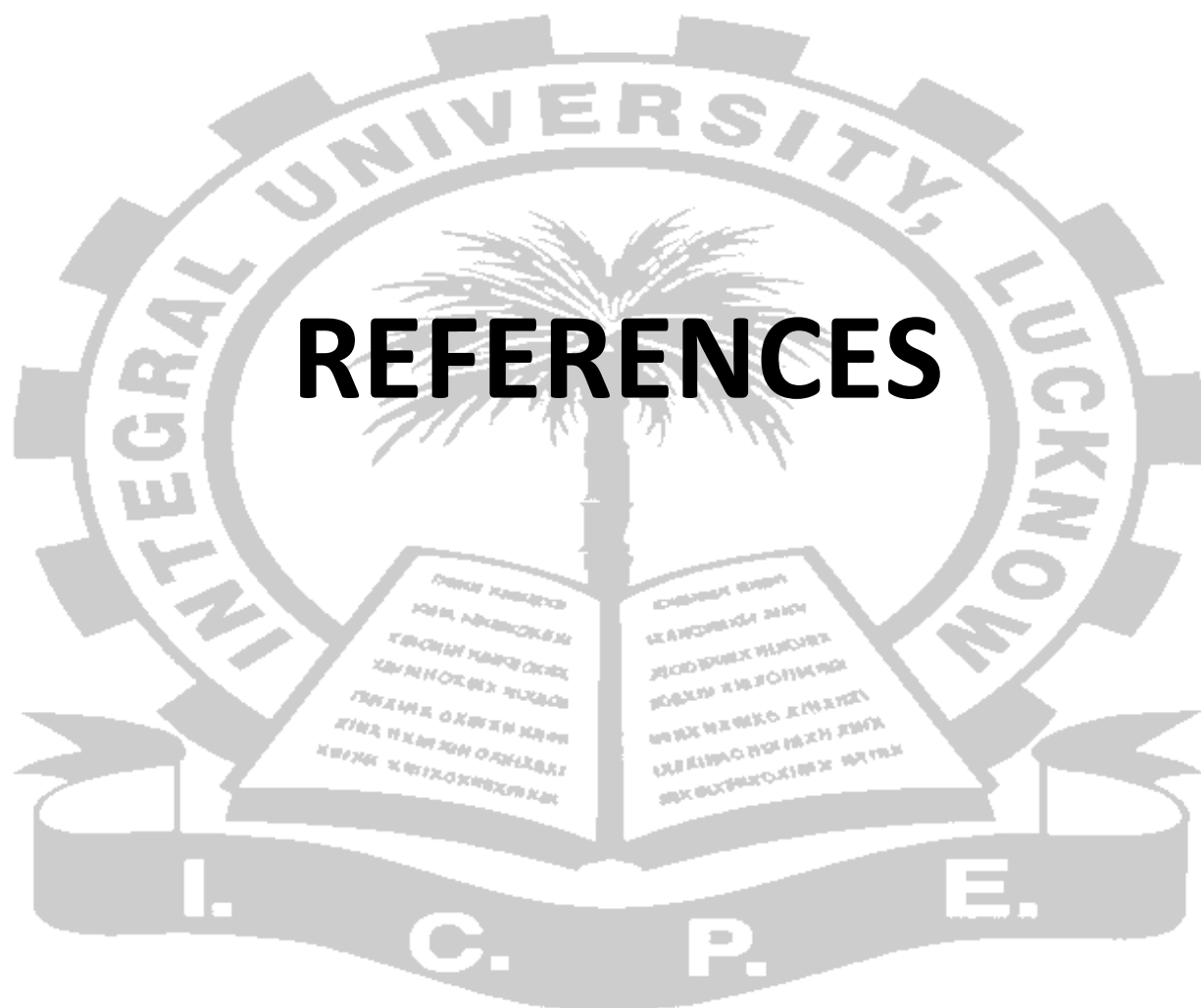
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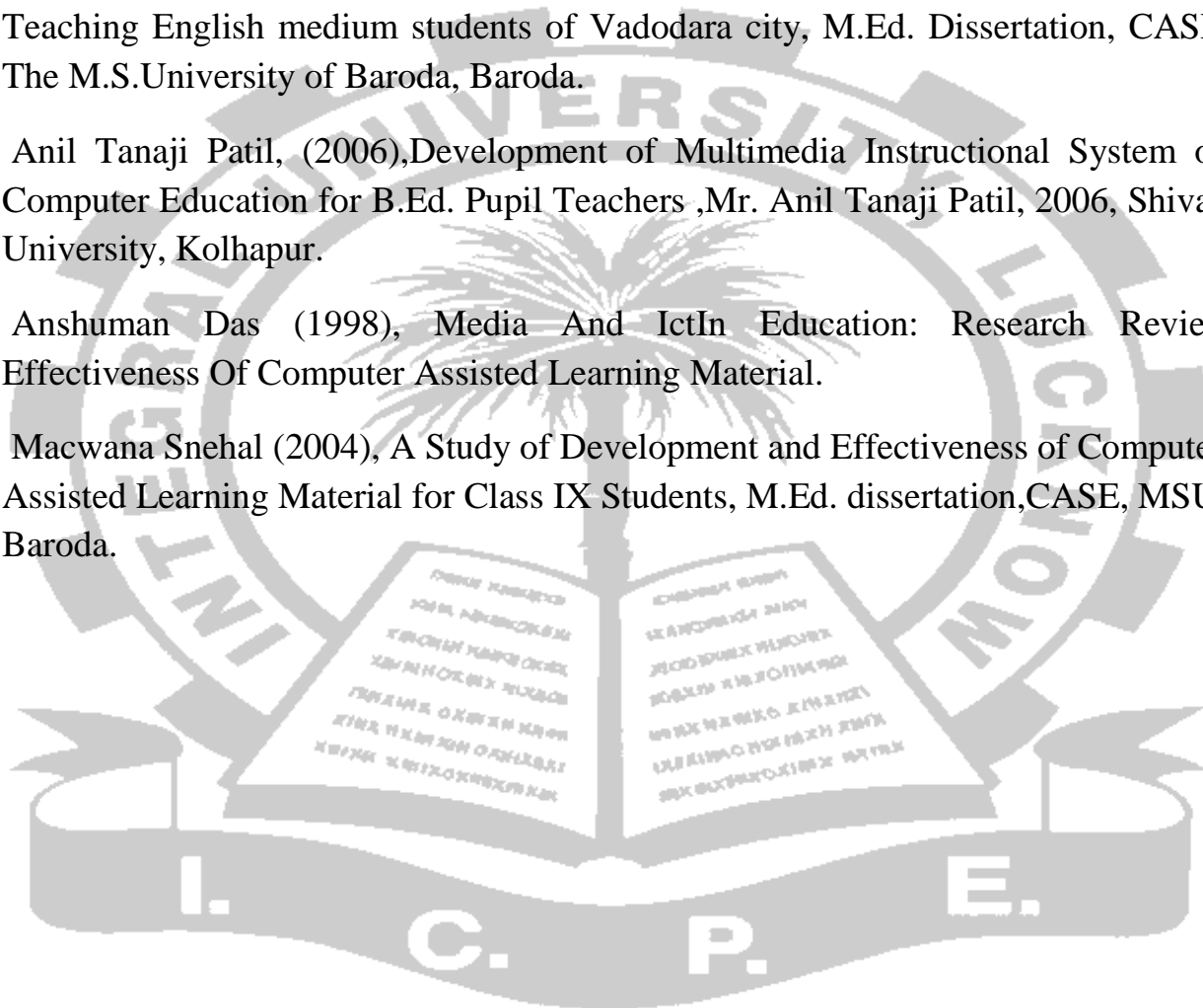
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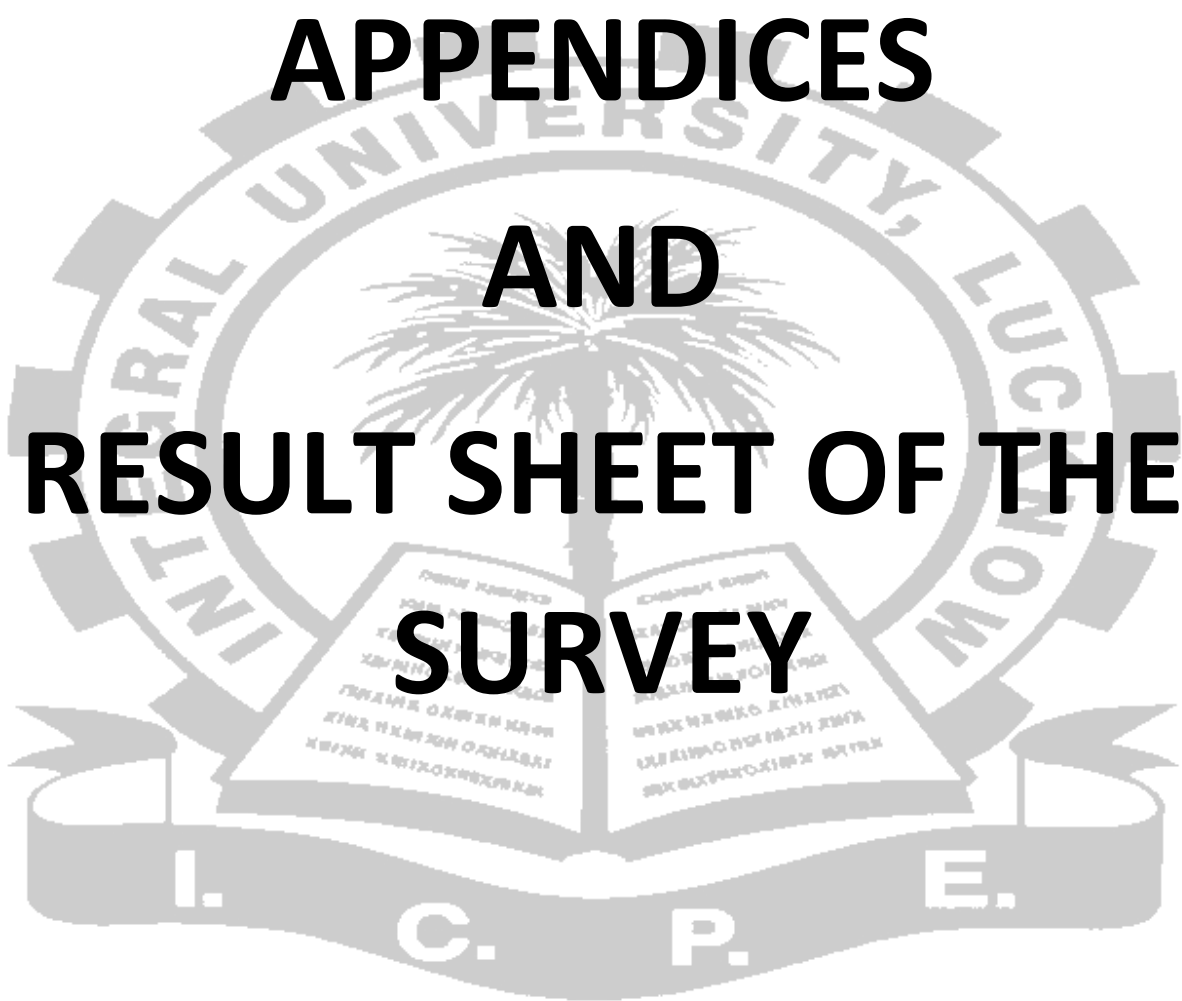
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**APPENDICES
AND
RESULT SHEET OF THE
SURVEY**





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Dr. (Mrs.) Nasrin (Aligarh)
Fatima Islahi (Aligarh)

Consumable Booklet
of
ASTITT-NI
(English Version)

Please fill up the following Informations : Date

Name _____ Father's Name _____

Date of Birth _____ Sex : Male Female

Qualification : Academic _____ Professional _____

Teaching Experience (in years) _____

Level : Primary Middle Secondary

Sr. Secondary College/University

INSTRUCTIONS

On the next pages, 30 statements regarding your Attitude Towards Information Technology. The purpose is to know what and how you think about IT. You are to record your response for each statement on a Five point alternatives, viz., **Strongly Agree (SA)**, **Agree (A)**, **Undecided (U)**, **Disagree (D)** and **Strongly Disagree (SD)**. Put a mark in the appropriate which you think is closest to your thinking about I.T.

No answers is right or wrong. Though there is no time limit, yet you can easily complete it in 20 to 25 minutes. So waste no time. Your responses will be kept confidential.

SCORING TABLE

Page	Raw Score			z- Score	Grade	Interpretation
	2	3	4			
Score						
Total Score						

Scorer

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Sr. No.	STATEMENTS	RESPONSE					Score
		Strongly Agree (SA)	Agree (A)	Undecided (UD)	Disagree (D)	Strongly Disagree (SD)	

1. Various devices of information technology provide better access to information for teaching.
2. I would like to learn more about the use of IT in making my teaching effective.
3. I prefer communication through e-mails than ordinary posts.
4. Internet provides students with a large number of entertaining and mind stimulating activities.
5. It is difficult for me to use IT devices-computer, email services, internet etc. for teaching purposes.
6. It is very complicated to find relevant information for teaching through internet.
7. Information technology for my teaching is worthless.
8. Information technology can be used successfully with courses which demand creative activities.
9. Anything that a computer can be used for, I can do just as well some other way.
10. The challenge of learning about IT devices is exciting.

Total Score

Sr. No.	STATEMENTS	RESPONSE					Score
		Strongly Agree (SA)	Agree (A)	Undecided (UD)	Disagree (D)	Strongly Disagree (SD)	

- | | | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|----------------------|
| 11. Use of computer in my classroom would help me to be a better teacher. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| 12. I feel comfortable working with a computer. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| 13. Pupils may get distracted by use of technology in the class. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| 14. Role of information technology as a medium to improve teaching is insignificant. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| 15. Information technology has negative effect on human relationships. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| 16. Information technology training is not a priority for me. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| 17. I can never find anything relevant through information technology for my pupils. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| 18. I see the use of information technology rarely in my daily life. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="text"/> |
| 19. Information technology has improved the overall quality of life. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |
| 20. Quality of education can be enhanced through information technology | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> |

Total Score

Sr. No.	STATEMENTS	RESPONSE					Score
		Strongly Agree (SA)	Agree (A)	Undecided (UD)	Disagree (D)	Strongly Disagree (SD)	
21.	Use of information technology increases the quality of interaction with students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
22.	Use of information technology is helpful to develop confidence in students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
23.	Information technology has contributed to the gradual degradation of values in society.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="text"/>
24.	Information technology provides necessary instructional aids in almost all subject areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
25.	Use of information technology is time and energy consuming.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="text"/>
26.	Information technology helps pupils acquire new knowledge effectively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
27.	Use of information technology motivates the pupils to learn.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
28.	I need to develop my skills and knowledge in information technology for the pupils' benefit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
29.	Information acquired through various technological devices is more accurate and reliable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
30.	Learning through technological devices helps to link school education to real life situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Total Score						<input type="text"/>	

Serial No.	Gender	Tool Score	Nature of School	Medium of School	Attitude of Teacher
1	1	144	1	1	HFA
2	1	122	1	1	PFA
3	1	125	1	1	HFA
4	1	145	1	1	EFA
5	1	119	1	1	PFA
6	1	135	1	1	HFA
7	1	128	1	1	HFA
8	1	110	1	1	MFA
9	1	145	1	1	EFA
10	1	140	1	1	HFA
11	1	146	1	1	EFA
12	1	149	1	1	EFA
13	1	119	1	1	PFA
14	1	135	1	1	HFA
15	1	123	1	1	PFA
16	1	116	1	1	PFA
17	1	125	2	2	HFA
18	1	126	2	2	HFA
19	1	135	2	2	HFA
20	1	138	2	2	HFA
21	1	143	2	2	EFA
22	1	144	2	2	EFA
23	1	132	2	2	HFA
24	1	148	2	2	EFA
25	1	150	2	2	EFA
26	1	150	2	2	EFA
27	1	110	2	2	MFA
28	1	120	2	2	PFA
29	1	106	2	2	MFA
30	1	96	2	2	MFA
31	2	121	1	1	PFA
32	2	111	1	1	PFA
33	2	110	1	1	PFA
34	2	108	1	1	MFA
35	2	118	1	1	PFA
36	2	111	1	1	PFA
37	2	102	1	1	MFA
38	2	110	1	1	PFA
39	2	104	1	1	MFA
40	2	109	1	1	PFA
41	2	119	1	1	PFA
42	2	109	1	1	PFA
43	2	121	1	1	PFA

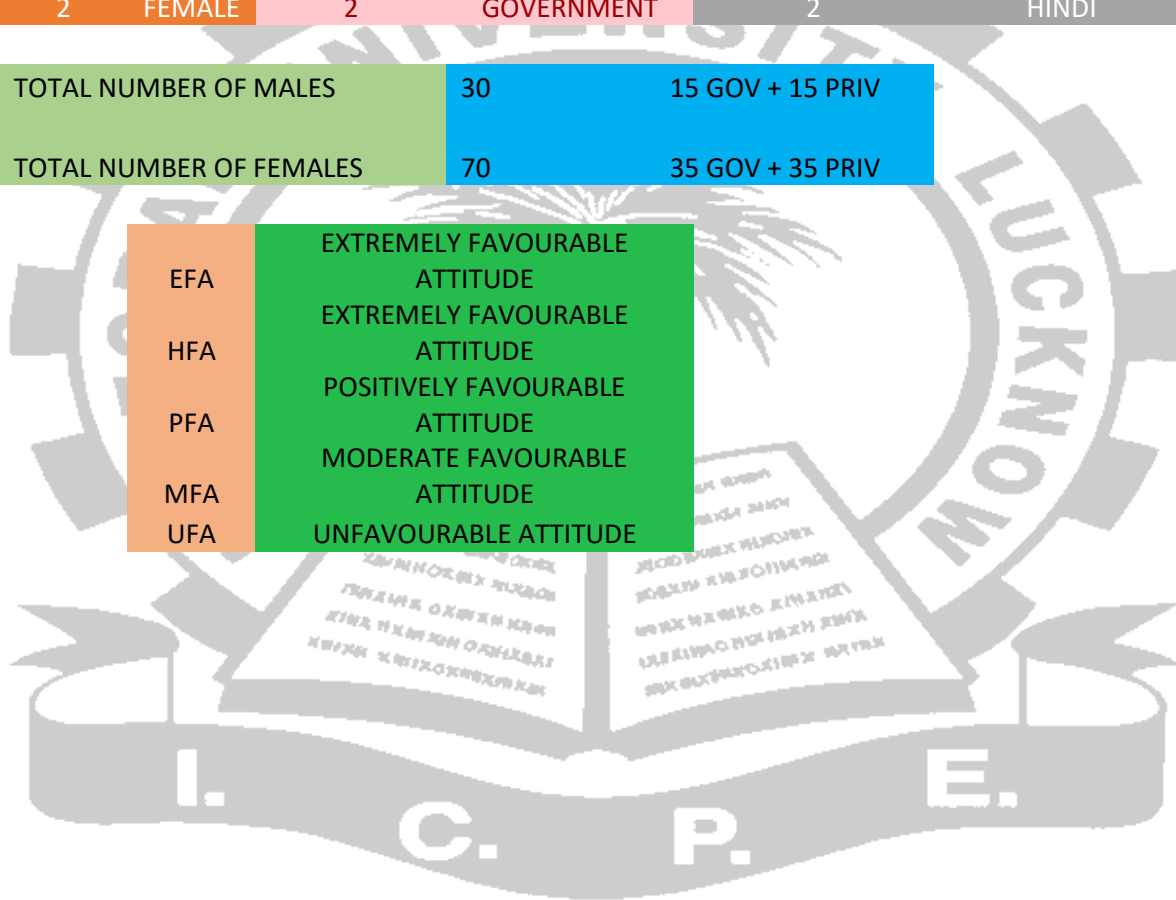
44	2	121	1	1	PFA
45	2	119	1	1	PFA
46	2	122	1	1	PFA
47	2	135	1	1	HFA
48	2	121	1	1	PFA
49	2	120	1	1	PFA
50	2	122	1	1	PFA
51	2	119	1	1	PFA
52	2	114	1	1	PFA
53	2	115	1	1	PFA
54	2	108	1	1	MFA
55	2	112	1	1	PFA
56	2	119	1	1	PFA
57	2	124	1	1	PFA
58	2	121	1	1	PFA
59	2	108	1	1	MFA
60	2	116	1	1	PFA
61	2	106	1	1	MFA
62	2	130	1	1	HFA
63	2	112	1	1	PFA
64	2	103	1	1	MFA
65	2	127	2	2	HFA
66	2	108	2	2	MFA
67	2	104	2	2	MFA
68	2	109	2	2	PFA
69	2	121	2	2	PFA
70	2	135	2	2	HFA
71	2	130	2	2	HFA
72	2	126	2	2	HFA
73	2	113	2	2	PFA
74	2	106	2	2	MFA
75	2	115	2	2	PFA
76	2	118	2	2	PFA
77	2	121	2	2	PFA
78	2	108	2	2	MFA
79	2	115	2	2	PFA
80	2	106	2	2	MFA
81	2	108	2	2	MFA
82	2	119	2	2	PFA
83	2	95	2	2	MFA
84	2	100	2	2	MFA
85	2	106	2	2	MFA
86	2	98	2	2	MFA
87	2	89	2	2	MFA
88	2	125	2	2	MFA
89	2	105	2	2	MFA
90	2	73	2	2	UFA

91	2	125	2	2	PFA
92	2	120	2	2	PFA
93	2	116	2	2	PFA
94	2	110	2	2	PFA
95	2	104	2	2	MFA
96	2	106	2	2	MFA
97	2	101	2	2	MFA
98	2	93	2	2	MFA
99	2	84	2	2	UFA
100	2	70	2	2	UFA

GENDER		NATURE OF SCHOOL		MEDIUM OF SCHOOL	
1	MALE	1	PRIVATE	1	ENGLISH
2	FEMALE	2	GOVERNMENT	2	HINDI

TOTAL NUMBER OF MALES	30	15 GOV + 15 PRIV
TOTAL NUMBER OF FEMALES	70	35 GOV + 35 PRIV

EFA	EXTREMELY FAVOURABLE ATTITUDE
HFA	EXTREMELY FAVOURABLE ATTITUDE
PFA	POSITIVELY FAVOURABLE ATTITUDE
MFA	MODERATE FAVOURABLE ATTITUDE
UFA	UNFAVOURABLE ATTITUDE



**TO STUDY THE ATTITUDE OF SECONDARY SCHOOL
TEACHERS TOWARDS ICT AND THE USE OF COMPUTERS
IN EDUCATION**



SUMMARY

DISSERTATION

**SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF**

MASTER OF EDUCATION

SUPERVISOR

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Introduction, Problem and its Significance

Education is very important for an individual's success in life. Education provides pupils teaching skills that prepare them physically, mentally, and socially for the world of work in later life. Education is generally seen as the foundation of society which brings economic wealth, social prosperity and political stability. Education is the means through which the aims and habits of a group of people lives on from one generation to the next. Education is the process of learning and knowing, which is not restricted to our school text books. It's a holistic process and continues through our life. Even the regular things and events around us educate us, in one or the other way. It would not be an exaggeration to say that the existence of human beings are fruitless without education. "Education is supposed to develop an integrated human being and to prepare young people to perform useful functions for society and to take part in collective life. But when the society is changing from day to day it is difficult to know to prepare and what to aim for it"

Information and Communication Technology

The use of information and communication technology (ICT) has become widespread our society is increasingly connected with rapid advance of ICT in homes, school and business. It uses millions of blogs, social networking sites, web pages and interactive online games. Consequently the number of teachers use teaching aids, like charts models etc. it is a known fact that majority of schools do not have any appropriate teaching aids related to schools content. So teachers have no facility to use Audio-Visual Aids during teaching.

The use of audio-Visual Aids get further restricted due to unmotivated persons becoming teachers. The central government realized the need of improving

quality of education through the use of television where in most competent teacher teaches the topic with the help of most appropriate teaching aids. This helped in improving the quality of teaching in schools having no teacher to teach the subject, less competent teachers.

Along with Audio-Visual aids, the print media has to go long way in improving the quality of teaching and learning. Format in which the textbooks were written was not beneficial for teachers and students. Researchers started thinking and using different theories of learning for developing instructional material. ICT is made up of information technology and communications technology and a communication reaches thru recipient through communications technology.

Need and Significance of the Study

The outcome of this study aims at determining whether or not the use of computers has any significant influence on the attitude and interest of teachers in secondary schools. More over education is the bedrock of any society. INDIA as a developing nation needs standard secondary schools that has available learning resources, that teacher can improvise learning resources easily and more often. Teachers utilize computer learning resources on a regular basis. This research will be a contribution to the body of literature in the area of the effect of personality trait on teacher's interest and attitude, thereby constituting the empirical literature for future research in the subject area.

Statement of the Problem

To study the attitude of secondary school teachers towards ICT and the use of computers in education

Definitions of the Key Terms

Attitude

Attitude is a psychological construct, a mental and emotional entity that inherence in, or characterizes a person.

Computer

A computer is a device that can be instructed to carry out arbitrary sequences of arithmetic or logical operations automatically.

Secondary School

A secondary school is both an organization that provides secondary education and the building where this takes place.

ICT

Information and communication technology (ICT) is a science of extracting, processing, storing, manipulating and finally communicating the desired information from one corner to another by making integrated use of computer and telecommunication.

Objectives of the Study

The purpose of the study is to examine the attitude towards ICT and use of computers of secondary school teachers.

1. To study the attitude towards ICT and use of computer of male and female secondary schools teachers.
2. To study the attitude towards ICT and use of computer of Govt. and private secondary schools teachers.

3. To study the attitude towards ICT and use of computer of English and Hindi medium secondary schools teachers

Hypotheses of the Study

To achieve the above objectives the following hypotheses have been formulated.

1. There is no significant difference between attitude towards ICT and use of computer of male and female secondary schools teachers.
2. There is no significant difference between attitude towards ICT and use of computer of Government and private secondary school teachers.
3. There is no significant difference between attitude towards ICT and use of computer of English and Hindi medium secondary school teachers.

Delimitation of the Study

- In these study total 5 secondary schools both Government and private secondary schools of district Lucknow will be covered.
- Only class VI-X teachers of below and above the age of 40 will be considered for the study.
- In this study both English and Hindi Medium secondary school will be covered.
- In this study level of attitude of the teachers towards ICT will be considered for computer education.

Design of the Study

Research design is considered as a “Blueprint” for research, dealing with at least four problem: which questions to study, which data are relevant, what data to collect, and how to analyze the result. The best design depends on the research question as well as the orientation of the researcher. Every design has its +ve and -ve sides. Research design can be divided into fixed and flexible research designs. Others have referred to his distinction as ‘quantitative research design, and ‘qualitative research design, respectively. However, fixed design need not be qualitative, and flexible design need not be qualitative. In fixed design, the design of the is fixed before the main stage of the data collection takes place. Fixed design are normally theory driven, otherwise it’s impossible to know in advance which variables are measured quantitatively. Flexible design allow for most freedom during the data collection process. One reason for using a flexible research design can be the variable of interest is not quantitatively measurable, such as culture. In other cases, theory might not be available before one starts the research. The purpose of the present study was to study the attitude of secondary school teachers towards ICT and the use of computers in education, *Therefore, researcher used Dr. (Mrs.) Nasrin and Dr.(Mrs.) Fatima Islahi Attitude Scale towards information technology.*

Independent Variables

- (a) Gender
- (b) Medium
- (c) Type of School

Dependent Variables

(a) Attitude

Population

A population is any group of individuals that has one or more characteristics in common and that are of interest to the researcher. A population is defined in a group of individuals with at least one common characteristics which distinguishes that group from other individuals. The term population, in statistical point of view, it means the whole of total quantity of something. Population generally means the aggregate or totality or whole of something or total number of things, beings, matters etc. In research, generally the whole or universe or the totality never can be studied within a very short period of time. Therefore for systematic and scientific study, samples are collected according to the demand and necessity of research problems undertaken for the study.

The population consisted of 100 teachers in 5 schools of Lucknow.

Sample

Investigator has used the purposive and sample random techniques to draw the sample of the study.

A sample is a portion of population which is selected for the purpose of study or investigation. Since in educational research or other disciplines of behavioural sciences is neither practically expedient nor scientifically desirable to approach the total population, the technique of population being tapped only a part of population is drawn and studied. Thus, a sample is subset of population units consisting of three elements the members or unit selected the information or data collected and inference or generalizations made.

Description of the Sample

A sample thus is a miniature part of the whole or universe i.e. **the population**. In research, specifically in quantitative research, a sample is representation of the population. In a sense, it is smaller representation of whole. By the observation or systematic of small amount, number or quantity, the investigator can make certain inferences or can definitely make general conclusion about the characteristics, quality or attribute of the population or the universe or the totality from which the specific small amount or number is taken out or selected. Therefore, the investigator has taken due care in selecting the appropriate sample technique. The random sample techniques were used for selecting the sample of the present study. The representative of the study includes 100 secondary school teachers of Lucknow.

Table presenting schools selected from Lucknow district:

S. No.	Name of schools	Male	Female	Total
1.	Lucknow Public College, Lucknow	10	28	38
2.	35 PAC Police Modern School, Lucknow	00	08	08
3.	Red Rose Senior Secondary School Lucknow	08	20	28
4.	Rameshwar Vidyalaya Inter College Lucknow	10	06	16
5.	Techno Academic Senior Secondary School, Lucknow	02	08	10
	TOTAL	30	70	100

Description of Tools Used

Tool **ASTITT scale** developed by **Dr. (Mrs.) Nasrin and Dr. (Mrs.) Fatima Islahi**. Attitude scale consists of 30 items in which there are 18 positive and 12 negative items. Each item is provided with five alternatives. Responses are obtained on the booklet itself. There is still no time limit but generally 15 minutes have been found sufficient for responding all items.

Tool

The ASTITT scale appears to be an adequate scale and a dependable tool for measuring teachers' attitude towards information technology as the scale has a reasonably high reliability and validity.

It may prove to be useful for all types of teachers irrespective of their background, research scholars and guidance workers. It can also be used by policy makers, administrators and teacher educators for comparing the performance and effectiveness of different training institution in the area of attitude development. In training colleges programs and radical redesign of curricula in preparation programs in colleges and universities.

Reliability

“Reliability is a degree to which a test consistently measures whatever it’s measuring” (**Gay and Airasian, 2000**). It is consistency or repeatability of the measures. Reliability in this study utilized Cronbach’s alpha, which estimates internal consistency reliability by finding out how items of an instrument relate to each other and to the total instrument. This was calculated using SPSS 12.0 statistical package.

Using the scores of subjects on 30 items of the final form, reliability of ASTITT Scale was calculated. The polarity of the negative items in the Linkert-type scale was reserved. This revised polarity was used for subsequent analyses.

Validity

Content validity is “the degree to which a test measures an intended content area” (Gay and Airasian, 2000). Content validity was also established by the panel. The instrument was evaluated during and after development. Feedback from the panel of experts was used to make modification and clarification prior to and after conducting the pilot study. The content validity is claimed on the basis of the fact that items were accumulated as a result through investigation of the literature on ASTITT in specific areas. These items were further reviewed and evaluated by a number of judges who are in close acquaintance with the teacher or his job. Items for which there has been 100% agreement amongst judges regarding their relevance to ASTITT are included in the scale. In addition, differences in mean attitude scores were among the different groups with different attitude towards information technology which further validate the scale.

Scoring

The respondents were asked to indicate the responses of the items by marking any one of the five response options.

Table for the scoring of items.

POSITIVE ITEMS	RESPONSE	NEGATIVE ITEMS
5	STRONGLY AGREE	1
4	AGREE	2
3	UNDECIDED	3
2	DISAGREE	4
1	STRONGLY DISAGREE	5

Statistical Technique

The analysis of the data was done by using quantitative techniques. The analysis has been carried out by using statistical techniques. The analysis has been carried out by using statistical techniques which were chosen only after the investigator found it to be most appropriate and compatible to the data. Each statistical technique is based upon its own specific assumptions regarding the nature of the sample, its universe and research condition like computation of means and standard deviation.

Arithmetic Mean

$$\bar{x} = \frac{\sum fx}{N}$$

f = frequency

x = mid-point

N = number of samples

Standard Deviation

$$\sigma = \frac{\sqrt{N\sum x^2 - (\sum x)^2}}{N}$$

σ :- Standard Deviation

N :- Total Number of Data

f - Frequency

S - Score

$\sum x$:- Sum of x scores

$\sum x^2$ - Sum of squares of x

t-test

$$t = \frac{M1 - M2}{\sigma_D}$$

Where,

M1 = Mean of first group

M2 = Mean of second group

σ_D = Difference between standard error of means

Findings, Educational Implications and Suggestions

For the present study the major findings of the study are:

1. **As per the first objective:** To study the attitude towards ICT and use of computer of male and female secondary schools teacher the result drawn are as:-
 - There is a significant difference found between the mean of attitude score towards ICT and use of computer in education of male and female secondary school teachers.
 - The mean of attitude score shows that male have higher attitude towards ICT and use of computers in education in respect to females.

2. **As per the second objective:** To study the attitude towards ICT and use of computer of Government and private secondary schools teachers the result drawn are as:

- There is a significant difference found between the mean of attitude score towards ICT and use of computer of Government and private secondary school teachers.
- Majority of government female teachers found that the use of computer in teaching and learning stresses them out in respect to private school female teachers.
- There were few teachers in private school who knows how to fix something in computer if anything goes wrong while government teachers were not well equipped and may panic.
- Private schools teachers were fully equipped as to perform task using computers as they teach by the help of smart classroom while in government teachers it lacks as the school doesn't have a proper computer lab.

3. **As per the third objective:** To study the attitude towards ICT and use of computer of English and Hindi medium secondary schools teachers the result drawn are:-

- There is a significant difference found between the mean of attitude score towards ICT and use of computer of Hindi and English medium secondary school teacher.
- Majority of Hindi medium teachers found that the use of computer in teaching and learning stresses them out in respect to English medium school teachers due to language barrier.

- Teachers of English medium school knows how to fix something in computer if anything goes wrong while Hindi medium school teachers were not well equipped and starts to panic.

Educational Implications

- The use of the computers in teaching and learning stress out some teachers which can be reduced by giving them proper training about the use of computers.
- The idea of using computer in teaching and learning makes few teachers doubtful can be reduced by updating the new knowledge.
- Some teachers find that the computer is not conducive to students learning as they think it is not easy to use and can reduce their access of proper knowledge.
- By using and acquiring the knowledge of ICT, student teacher will become effective teacher.
- Some teachers find that it was very complicated to find the relevant information for searching through internet this can be reduced by providing them foundational skills in ICT that teachers need to learn before they can participate in an ICT rich classroom.
- There were teachers who find out that learners might get distracted by the use of technology in the class and consider trial and error method much better in context of proper learning of the learners.
- Some teachers find difficulty in using IT devices computer, email services, internet etc, for teaching purpose. This can be reduced by adding training programs, revised training programs.

Suggestions for Further Researches

- Studies on the attitude of teachers can be extended to particular subject teachers.
- Studies on the attitude of teachers can be extended to other educational levels like graduation and post-graduation.
- A study can be carried out to find the attitude of students towards ICT.
- A study can be carried out to find the attitude of teachers towards different technology like mobile learning, smart classes, etc.
- Studies on the attitude of teachers can be extended to primary and pre-primary level.
- A study can be carried out on the attitude of teachers towards ICT and use of computers and technology on the academic achievement of the students.
- A study can be carried out on the self efficiency of the teachers on the use of computers and Information and Communication Technology.

