

# **CHAPTER-I**

## **INTRODUCTION**

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#### 1.0.0 INTRODUCTION

Globalization and technological change processes have created a new global economy “powered by technology, fuelled by information and driven by knowledge.” Information and of teaching, journal of education and science, vol. 34, No. 151

communication technology (ICT) occupies a complex position in relation to globalization. The emergence of new global economy has serious implication for the nature and purpose of educational institutions. The half-life of the information continues to shrink and access to information continues to grow exponentially, educational institutions cannot remain mere venues for the transmission of a prescribed set of information from teacher to student over a fixed period of time. ICT is increasingly utilized by education institutions worldwide and it is emerging as a part of on-campus delivery as well as open and distance modalities of higher education delivery. ICT in higher education are being used for developing course material; delivering content and sharing content; communication between learners; teachers and the outside world; creation and delivery of presentations and lectures; academic research; administrative support, student enrolment.

ICT have great potential for knowledge dissemination, influence learning, and the development of more efficient educational services. Moreover, the adoption of ICT by education has been seen as a powerful way to contribute to educational change, better prepare students for the information age, improve learning outcomes and competencies of learners, and equip students with survival skills for the information society. Therefore, teachers are expected to integrate ICT into their teaching and learning process.

#### 1.1.0 ICT

Information and communication technologies are information handling tools that are used to exchange information. These different tools are now able to work together, and combined to form networked world which reaches to the

every corner of the globe (UNDP evaluation office,2001).It is an increasingly powerful tool for participating in global market, promoting political accountability; improving the delivery of the basic services; and enhancing local development opportunities(UNDP,2006).

Ogunsolo (2005) opined that ICT is an electronic based system of information transmission, reception, processing and retrieval, which has drastically changed the way we think, the way we live and the environment in which we live.”

### **1.2.0 ICT IN EDUCATION AND FOR EDUCATION**

Thomas and Ranga in UNESCO (2004) in their classification divided the application of computers and other communication technologies in education into three broad categories: these are: Pedagogy, Training and continuing education.

The Pedagogical applicability of the ICT is concerned, essentially, with the more influential learning and with the support of the various components of ICT. Almost, all subjects ranging from mathematics to music can be learnt with the help of the computers emphasized that pedagogic application of ICT, involves influential learning with the help of computers and other information technologies, serving the purpose of learning aids, which plays complementary learning roles in teaching learning situation, rather than supplements to the teachers. The pedagogic uses of technology necessitate the development, among teachers as well as students; of skills and attitude related to influence use of ICT. Aside of literacy ICT also facilitates learning to programme; learning in subject areas and learning at home, and these necessitates the use of new methods like modelling, simulation, use of data bases, guided discovery, closed-word exploration, etc. The implication in terms of changes in the teaching strategy, instructional content, role of the teachers and context of curricula are obvious as inevitable. Pedagogy through the application of information and communication technology has advantage of heightening the motivation; helping recall previous learning; providing new instructional stimuli; activating the learners' response; providing systematic and steady feedback; facilitating appropriate practice; sequencing learning

appropriately; and providing a visible source of information for enhanced learning.

### **1.3.0 TEACHING PROFESSION**

A teacher is a person who provides education. The role of teacher is often formal and on-going, carried out at school or other place of formal education. In many countries, a person who wishes to become a teacher must first obtain specified professional qualification or credential. These professional qualifications may include the study of pedagogy i.e., the science of teaching. Teachers, like other professionals, may have to continue their education after they qualify, a process known as continuing professional development. Teachers may use a lesson plan to facilitate student learning, providing a course of study which is called the curriculum. A teacher's role may vary among cultures. Teachers may provide instruction in literacy and numeracy, craftsmanship or vocational training, the arts, religion, civics, community roles.

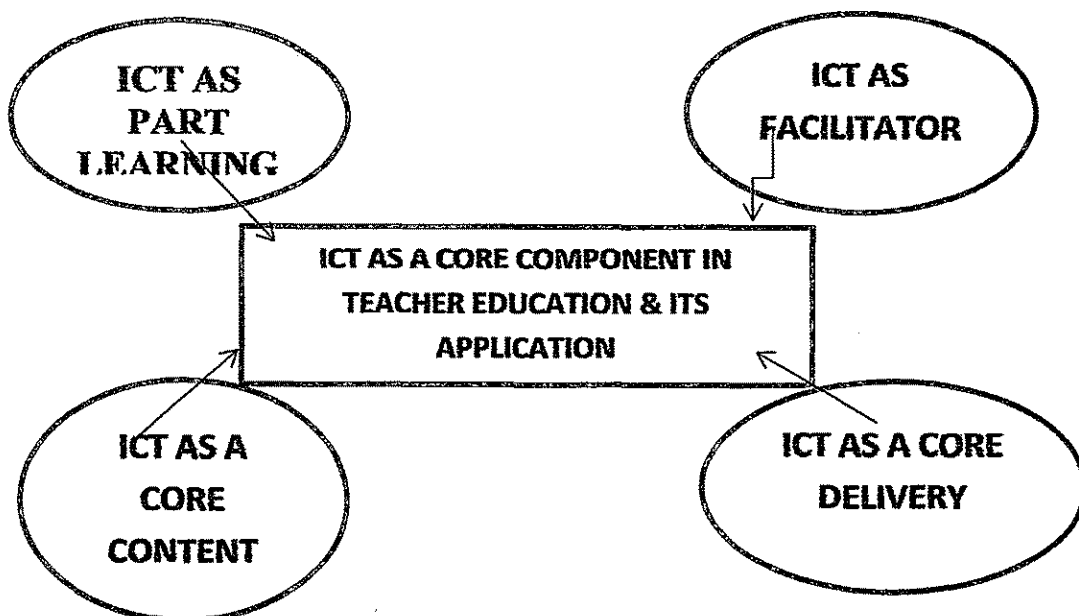
### **1.4.0 ICT IN EDUCATION**

Information and communication technology (ICT) is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. The National curriculum framework, 2005 (NCF 2005) has highlighted the importance of ICT in school education.

Students have ideas of their own and knowledge that they gathered from daily life; this knowledge and ideas are not accepted or utilized by teachers. Using ICT this can be achieved in a big way.

Teachers have to be trained to facilitate the learning process, make the process real, achievable, challenging, yet exciting and not intimidating. Reducing teachers' talk and encouraging students' discussion is extremely important. Everything need not be written on the blackboard to be considered as taught. Many teachers think the computer is used only to make the content look attractive! They need to know that in 21<sup>st</sup> century, information is not difficult access, instead organizing, sharing, and collaborating become essential skills. Hence, ICT is not merely to portray information but to interact, share, and thus

learn. ICT provides meaningful, absorbing media that makes teaching-learning more productive.



**Fig. 1.1: ICT as a Core Component in Teacher Education & its Application**

#### **1.5.0 NEED OF KNOWLEDGE OF ICT FOR TEACHERS**

In order to use technology influence, educators need to be trained in using technology and they need to develop a good understanding of it. Technology is used to enhance learning; therefore it is important for educators to be comfortable using it to ensure that students get the full advantages of educational technology. Teaching with technology is different than teaching within a typical classroom. Teachers must be trained in how to plan, create, and deliver instruction within a technological setting. It requires a different pedagogical approach. Teachers must find a way to assess students on what they take away from a class and meaningful, known knowledge, especially within an e-Learning setting.

The Internet is full of information, textbooks are bursting with information but this information can become true knowledge only when the teacher makes it meaningful. The teacher can use multimedia to make topics more comprehensible.

### 1.6.0 TEACHER'S ROLE IN 21<sup>ST</sup> CENTURY

There is a debate as to whether teachers are becoming redundant as a consequence of the use of ICT in Education or whether a teacher less classroom is just a myth. New educational technologies do not curb the need for teachers but they call for a redefinition of their profession. The roles of teachers have changed and continue to change from that of instructors to that of constructors, facilitators, coaches, and creators of learning environments.

Many studies and articles have identified reasons why the role of the teacher must change, such as:

ICT will cause certain existing resources to become obsolete. Resources such as overhead projectors and chalkboards may no longer be necessary if all learners have access to the same networked resource on which the teacher is presenting information, especially if students are not physically in the same location. ICT may make some assessment methods redundant. Online tests, for example, can provide the teacher with considerably more information than traditional multiple choice tests. It is no longer sufficient for teachers to impart content knowledge. They must encourage higher levels of cognitive skills, promote information literacy, and nurture collaborative working practices. These new responsibilities are greatly facilitated by the use of ICTs in teaching. However, a genuine and sophisticated integration is necessary, so teacher training in this regard becomes crucial.

### 1.7.0 NEED AND JUSTIFICATION

This study intends to determine the knowledge of ICT among the prospective teachers with respect to other variables (gender, attitude towards ICT, teaching aptitude, learning style and type of institution).

The use of ICT is very important topic in education. ICT can enhance teaching and learning outcomes. For, example; in science and mathematics education; scholars have documented that the use of ICT can improve students' conceptual understanding, problem solving, and team working skills. As a



result,

curriculum



**Fig: 1.2 New Requirements for the Teachers**

documents state the importance of ICT and encourage school teachers to use it. However, teachers need to be specifically trained in order to integrate the ICT in their teaching. Since, the curriculum documents provide arguments for introducing ICT in the school setting, schools expects that graduates from teacher education programs have a reasonable knowledge of How to use ICT in their teaching learning process.

Attitude towards an object are stimulus to allow us to estimate the potential behaviour towards the relevant stimulus. In many studies a significant difference was observed between the attitude of prospective teachers towards ICT with respect to gender. This study intends to determine the attitudes of prospective teachers towards ICT and its impact on knowledge of ICT among them.

Teaching aptitude is another important factor to become a successful teacher. But many institutions, by the virtue of lack of physical infrastructure or some unnamed reasons have been sadly unsuccessful in harnessing the aptitudes of

prospective teachers hence bringing out not a very good breed of teachers passing out from their institutions.

### **Significance of the study**

ICT is the medium that centres at the heart of the communication revolution. Computers are being used in the education to prepare the students of today for an information future. The modern psychology emphasized that individual's level of attitude towards a device influence their performance while working with that device. The influential use of ICT requires knowledge of ICT. Today technology is being used in the field of education. Therefore teacher should also know the basic use of ICT into their classroom and for that teacher must possess teaching aptitude along with ICT knowledge. Therefore it is important to investigate that how the attitude towards ICT and teaching aptitude are related to the each other and how these are affected by some other factors like gender, type of institution, teaching aptitude and learning style of the prospective teachers.

Teachers need to recognise their own learning style as a basis for the development of influential learning and learning strategies.

### **1.8.0 STATEMENT OF THE PROBLEM**

The problem of the proposed study may be worded as follows:

*“Study of knowledge of ICT among prospective teachers of Madhya Pradesh”.*

### **1.9.0 DIFINING THE KEY TERMS**

**Prospective Teachers:** Pupil-teachers or teacher trainees enrolled in B.Ed. course during the session 2013-2014.

**ICT:** Information technology includes computers, the interest & electronic delivery system such as radio T.V. & projectors.

**Knowledge of ICT:** knowing about the various fundamental aspects of ICT and the basic skills involved in the operation of ICT and the function of ICT applications for enhancing and/or facilitating learning.

**Learning style:** It is a more or less consistent way, in which a person perceives, conceptualizes, organizes and recalls information.



**Aptitude:** An aptitude is a combination of characteristics indicative of an individual capacity to acquire some specific knowledge, skills, or set of organized responses, such as the ability to speak a language, to become a musician, to do mechanical work and teaching.

**Attitude:** An attitude is an expression of favour or disfavour towards a person, place, thing, or event (the attitude object) or an attitude is "a relatively enduring organization of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbols".

### 1.10.0 OBJECTIVES

Following objectives are formulated for the proposed study:

1. To study the knowledge of ICT among prospective teachers.
2. To study the influence of gender, types of institution and their interaction on knowledge of ICT of prospective teachers by taking their scores of intelligence as covariate.
3. To study the influence of gender, attitude towards ICT and their interaction on knowledge of ICT of prospective teachers by taking their scores of intelligence as covariate.
4. To study the influence of gender, learning style and their interaction on knowledge of ICT of prospective teachers by taking their scores of intelligence as covariate.
5. To study the influence of teaching aptitude, attitude towards ICT and their interaction on knowledge of ICT of prospective teachers by taking their scores of intelligence as covariate.
6. To study the influence of teaching aptitude, learning style and their interaction on knowledge of ICT of prospective teachers by taking their scores of intelligence as covariate.
7. To study the influence of teaching aptitude, types of institution and their interaction on knowledge of ICT of prospective teachers by taking their scores of intelligence as covariate.

### 1.11.0 HYPOTHESES

Following hypotheses may be formulated for the proposed study:

1. There is no significant influence of gender on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.

2. There is no significant influence of types of institution on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.
3. There is no significant interaction of gender and types of institution on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.
4. There is no significant influence of gender on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
5. There is no significant influence of attitude towards ICT on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.
6. There is no significant interaction of gender and attitude towards ICT on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.
7. There is no significant influence of gender on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
8. There is no significant influence of learning style on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.
9. There is no significant interaction of gender and learning style on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
10. There is no significant influence of attitude towards ICT on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
11. There is no significant influence of teaching aptitude on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.
12. There is no significant interaction of teaching aptitude and attitude towards ICT on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate

13. There is no significant influence of learning style on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
14. There is no significant influence of teaching aptitude on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate.
15. There is no significant interaction of teaching aptitude and learning style on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
16. There is no significant influence of teaching aptitude on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
17. There is no significant influence of type of institution on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate
18. There is no significant interaction of teaching aptitude and types of institution on knowledge of ICT of prospective teachers when their scores of intelligence are taken as covariate

#### 1.12.0 DELIMITATIONS OF THE STUDY

The study was conducted under the following constraints:

This study is delimited to the colleges of Bhopal city.

1. This study is limited to RIE, BHOPAL and PGBT of Bhopal.
2. This study is limited to the institutions offering teaching courses at B.Ed. level.
3. This study is delimited to the final year students in case of 4-year integrated courses run by RIE, Bhopal

