CHAPTER-1
INTRODUCATION

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1.1 INTRODUCATION

In this 21st century, the term "technology" is an important issue in many fields including education. This is because technology has become the knowledge transfer highway in most countries. Technology integration nowadays has gone through innovations and transformed our societies that have totally changed the way people think, work and live. As part of this, schools and other educational institutions which are supposed to prepare students to live in "a knowledge society" need to consider ICT integration in their curriculum.

Integration of Information, Communication, and Technology (ICT) in education refers to the use of computer-based communication that incorporates into daily classroom instructional process. In conjunction with preparing students for the current digital era, teachers are seen as the key players in using ICT in their daily classrooms. This is due to the capability of ICT in providing dynamic and proactive teaching-learning environment. While, the aim of ICT integration is to improve and increase the quality, accessibility and cost-efficiency of the delivery of instruction to students, it also refers to benefits from networking the learning communities to face the challenges of current globalization. Process of adoption of ICT is not a single step, but it is ongoing and continuous steps that fully support teaching and learning and information resources.

Information and Communication Technology (ICT)

ICT comprises a diverse set of technological tools and resources to create, disseminate, store and manage data and information. In education ICT is used as a combination of various technologies ranging from simple technology like print based communication to online communication. There is not a universally accepted definition of ICT as it is a constantly evolving concept, method and application.

1.2 UTILITY OF ICT

It encompasses most aspects of educational operations though the major emphasis has been put forth to initiate the use of computer based technologies into existing teaching learning process.

The new digital ICT is not single technology but a combination of various hardware, software, media and delivery systems. ICT provides 'anytime, anywhere' access to reliable information; it paves way for construction of knowledge by any individual. ICT and its importance as defined by social divides , ICT should be used in such a way that it becomes an important opportunity by providing information, communication and computing resources in remote areas. Education across all sectors has moved from a focus on teaching to that of learning, Teacher education can't be thus spared from the trends. The learning process when integrated with technology is the dire need of today. Conventional classroom teaching in itself is not sufficient to achieve the goals of teaching-learning. Effective teaching activates and motivates the learners to effective learning , here ICT proves to be a powerful tool in providing learning environments which comprises of improved access to education , flexible modes of content presentation & delivery ,interactive learning skills, collaborative communicative and co-operative process of teaching – learning. The teacher today should know when, how and why should ICT be used in teaching learning process.

Today's prospective teacher are expected to teach with technology in classrooms of tomorrow where not merely developing ICT skills and competencies would be desired but the ability to ascertain a pedagogy or approach integrated with ICT in teaching learning would be needed.

1.3 FORMS OF ICT IN CLASSROOM

ICT in classroom performs multiple roles. Its major approaches are:

1. Integrated Approach

2. Enhancement Approach

3. Complimentary Approach

ICT is integrated in the curriculum; it enhances teaching –learning and serves as a compliment to the teaching-learning process. Efficient teaching-learning process at all levels of education, integrated with resources and technologies and processes, which are flexible enough to bring about changes is the need of the hour. The major responsibility for bringing about this lies in the hands of teachers as ICT is not kept aloof. It is integrated in every subject and it is evident in every classroom. The various forms of ICT in the classroom can be seen in the following ways:

In the 21st century no one excludes or ignores the importance of Information and communication technology.ICT has been a passive affair in India for long but things are changing. The NCF 2005 also emphasizes that the effective use of technology can enrich educational programme, facilitate management and address need of young learners, teachers and teacher-educators as well. The government is taking number of initiative to inculcate and integrate ICT in education e.g. the 'ICT @ school' scheme was launched in December 2004 to provide opportunities to secondary stage students to develop ICT skills and also for ICT aided learning projects. The scheme has four dimensions: to partner with state governments or

union territories, to establish smart schools, capacity building of teachers in ICT and development of e-content through CIET, RIEs, SIETs. The scheme has been revised in the year 2010-11 and has also introduced an award at National level for innovative teacher in ICT thereon.

Also the point here is that what are the tools of ICT that are needed to be a part of teacher education curriculum? They are
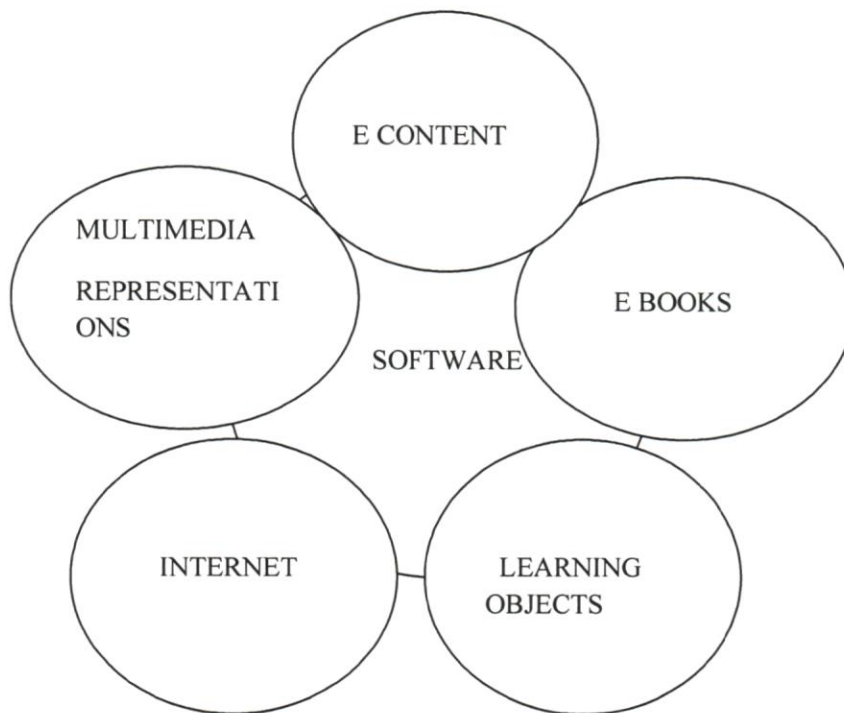
1.4 STATEMENT OF THE PROBLEM

TO STUDY THE EFFECTIVENESS OF ICT INTEGRATED PEDAGOGY ON THE ACADEMIC ACHIEVEMENT OF STUDENTS OF UPPER SECONDARY LEVEL IN PHYSICS.

1.5 NEED OF THE STUDY

Physics at upper secondary stages becomes increasingly inconceivable in the present form because of its abstract nature. Students face difficulty in relating the concepts to their surrounding experiences.

Traditional strategies may not be effective in facilitating the construction of learning experiences. The use of ICT integration approach seems to facilitate in the construction of learning experiences. The use of video based lesson plan use of internet simulation these salient features are tempting enough to use these strategies in classroom to facilitate learning experience of the students. I find these salient features of ICT tempting enough to use these as classroom strategies. Still rote learning is the widely preferred method for physics learning, shortcomings of traditional approach may be compensated through the strength of ICT integration approach. The Learning Outcomes seems to be better achievable through the use of ICT integrated strategies in classroom.

This study would be beneficial and significant for many people because 21st century skills are imperative for students to exhibit innovation and creativity, problem solving and critical thinking, collaboration and communication. ICT integration pedagogy can help teachers for developing 21st century skills in the student that would empower students for lifelong learning by making them ready for solving complex life issues and improve the working environment in the 21st century. This study would not only help teachers to understand the basic concepts related to ICT integrated pedagogy but they will also able to use it effectively and efficiently in their class room situation.

1.6 OPERATIONAL DEFINITIONS

1. Information and Communication Technology (ICT)

ICT (information and communications technology – or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICTs are often spoken of in a particular context, such as ICTs in education, health care, or libraries. The term is somewhat more common outside of the United States (*Margaret Rouse, 2005*).

Academic Achievement

Academic achievement or (academic) performance is the outcome of education — the extent to which a student, teacher or institution has achieved their educational goals. Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important — procedural knowledge such as skills or declarative knowledge such as facts.

Ict Integration Pedagogy

Rosnaini Mahmud and Mohd Arif (2008) define ICT integration as the process of determining where and how technology fits in the teaching and learning scenario. It is able for everyone can enter the websites from everywhere at any time to use the free information by the internet.

1.7 OBJECTIVES OF THE STUDY

1. To study the effect of ICT integration pedagogy on the academic achievement of student of upper secondary level in physics.
2. To study the effect of ICT integration pedagogy on the academic achievement among boys and girls of upper secondary level in physics.

1.8 HYPOTHESIS OF THE STUDY

H0.1 There is no significant difference between the pretest achievement scores and posttest achievement scores of the students.

H0.2 There is no significant difference between the posttest achievement scores of boys and girls.

1.9 RESEARCH QUESTIONS

1. Is there is no significant difference between the pretest achievement scores and posttest achievement scores of the students.

2. Is there is no significant difference between the posttest achievement scores of boys and girls.

1.10 DELIMITATION OF THE STUDY

1. The study was conducted on class 9 of Lexicon Public School in Pune.

2. The study was conducted in a urban school in Pune.

3. The study was conducted in a short time.

4. The study was conducted on small sample.

5. The study was limited to secondary level only.

6. The study was restricted to physics subject of class 9.

1.11 CHAPTERISATION

1. Introduction
2. Review Of Related Literature
3. Research Methodology
4. Data Analysis and interpretation of data
5. Conclusion and major finding and suggestions.