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CHAPTER-I
INTRODUCTION

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1.1 Introduction

In this modern society Information and Communication Technology (ICT) has become one of the basic building blocks. As a part of the core of education apart from mastery in reading, writing and numeracy, understanding ICT and attaining the basic skills and concepts of ICT are considered. Developments in Information and Communication Technology opened up new and cost-effective approaches for expanding the reach of education to all learners inclusive of those who need continuing education to meet the demands of explosion of information, fast changing nature of occupations and life-long education in the knowledge society. Governments prioritise educational quality, lifelong learning and the provision of educational opportunities for all due to the advent of the knowledge economy and global economic competition. It is accepted that access to information and communication technology in education can help individuals to compete in a global economy by creating a skilled work force and facilitating social mobility. ICT in education has an effect throughout the education system, by enhancing learning and providing students with new sets of skills: by reaching students with poor or no access; by facilitating and improving the training of teachers; and by minimising costs associated with the delivery of traditional instruction. ICT can help to bring abstract concepts to life using images, sounds, movement, animations and simulations. ICTs are delivery mechanism for teaching and learning, while it is the foundational pedagogy that matters (Clark, 1983; 1994).

It is necessary to prepare young people to play full roles in modern society and to contribute to a knowledge nation. To achieve this UNESCO aims that all developed and developing countries should ensure and provide access to the best educational facilities to the learners. UNESCO's strategic objectives in Education (UNESCO, 2002) provide guidelines to improve the quality of education through the diversification of contents and methods and promoting experimentation, innovation, the diffusion and sharing of information and best practices as well as policy dialogue. In the world we live in, Information and Communication Technologies have become key tools and a revolutionary impact. ICT has a revolutionary impact on educational

methodology globally. This revolution needs to be strengthened to reach the world population.

It is generally acknowledged that a highly motivated teacher with the right attitude would always strive for excellence in his teaching process. Globally, teachers are very significant in nation building and they play vital roles in nurturing the characters of the young members of the society for sustainable and all round development of the individuals for functional living in the society. Thus, adequate attention needs to be given to the training of teachers, and their training for professional growth must be of utmost importance to the government, policy makers, school administrators and parents. Professional development of teachers not only motivates but assists teachers to keep up to date with new and effective practices in teaching and learning. Given the need for holistic professional development, it is important to align teaching techniques along the evolving information communication technology (ICT) trends to improve the quality of instructional delivery of content in secondary schools. Despite this need, many schools are not yet proactive in adopting ICT trends in instruction delivery. The conventional teaching technique often conflicts with the new instructional strategy introduced in any education developmental programme that requires teachers to use cooperative learning, deploy solving activities and of late, to use the Information and Communication Technology (ICT) in teaching. Most importantly, the use of ICT in the classroom signals a shift from the conventional position of power held by the teacher to a more collaborative approach to learning. Information and communication technology has become a key tool and had a revolutionary impact on how we see the world and how we live. Information and communication technology is a term that means different things to different people.

Given the utility of ICT in enhancing teaching and learning, its benefits have not been entirely harnessed. The research findings of Stallard (2006); Ikwuka, Obumneke-Okeke, Okeke and Adigwe (2017) suggested that the main problem of teachers in implementing ICT appropriately and effectively is attitudinal although provision of infrastructure in schools are badly affected by public sector corruption in Nigeria (Ezeh & Etodike, 2017). This is because teachers do not even take cognizance of the roles and benefits of ICT facilities in enhancing teaching and learning. The authors opined that teacher with positive attitude towards the use of ICT in education behave differently than colleagues with less positive attitude. They further found that majority

- Media of Communication (Eg. radio, television)
- Information machine (eg. Computers)
- Telecommunications technologies and equipment (satellites, cables, phones).

ICT stands for —diverse set of resources and technological tools that are used to communicate, and to create, disseminate, store, and manage information. These technologies comprise computers, the Internet, broadcasting technologies (radio and television), and telephony.

ICT is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems etc., as well as the different services and applications associated with them like videoconferencing and distance learning.

Asabera and Enguah (2012) define ICTs as the tools, facilities, processes and equipment that offer the required environment with the physical infrastructure and services for the generation, transmission, processing, storing and sharing of information in all forms including texts, voice, data, graphic and videos.

Ntongieh (2016) sees ICT as any product which will store, retrieve, manipulate, transmit or receive information electronically in a digital form and utilization of information by the use of electronic computers. From these definitions, ICT could therefore be defined as processing and sharing of information using all kinds of electronic devices, an umbrella that includes all technologies for the manipulation and communication of information.

The UNESCO defines Information and Communication Technology (ICT) as —scientific, technological and engineering disciplines and the management technique used in information handling and processing, their application, computers and their interaction with men and machines, and associated with social, economical and cultural matters!. ICT is a generic term referring to technologies which are being used for collecting, storing, editing and passing on information in various forms (SER, 1997). Information and Communication Technology (ICT) refers to the integration of computing technology and communication (Mohanty and Vohra (2006)). ICT may be defined as —anything that allows to get information, to communicate with each other, or to have an effect on the environment using electronic or digital equipment!.

1.3 Importance of ICT in education

Expansion of time and place: Using the traditional textbook + classroom approach, the places where learning can occur are limited. A portable wireless computer has access to the teacher's course material and the entire Internet almost anywhere. And this is a vastly larger resource than can be practically carried on paper in a backpack.

Depth of Understanding: Interactive simulations and illustrations can produce a much greater depth of understanding of a particular concept. When virtual manipulative are used in a classroom setting they can go far beyond chalk and talk. Using ICT the teacher can conduct on-line investigations and demonstrate concepts far more easily than with just words and arm-waving.

Learning vs. Teaching: ICT has turned the tables. Students may be given projects that require them to learn (pull) the necessary material themselves without being in the physical presence of a teacher, instead of teaching (Push). Students develop the ability to get the information they need anytime, anywhere. This project-based pull approach makes learning more interesting to the students.

New media for self-expression: In the old days students could write in a notebook, and what they wrote was seen only by the teacher. Using modern technology, they can: make a PowerPoint presentation, record/edit spoken word, do digital photography, make a video, run a class newspaper, run a web based school radio or TV station, compose digital music on a synthesizer, make a website, and/or create a blog.

Collaboration: The ability to work collaboratively on projects with others who may not be physically close is a vital skill to be honed in the modern digital world. This is feasible by using the latest computer tools such as the Web, Email, instant messaging, cell phone and so on. Rather than labouring alone on homework, students can work in small groups wherever they happen to be and at any time. They are doing this already-it can now be formalized and taught as a vital skill. Many university projects are undertaken by teams spread around the world.

Going Global: Due to the zero cost of communicating, the worldview of the students is expanded. The Internet permits free video conferencing which permits interaction in real time with sister schools in other countries. It is more important to understand other cultures through direct dialog and collaboration.

Individual pacing and sequence: Students are different from one another. Information technologies can permit them to break step with the class and go at a pace and order that suits each student better. Without disrupting the class, they can repeat difficult lessons and explore what they find interesting. With time, it will become more like having a private tutor rather than being lost in a large class.

Personal Productivity: Productivity tools are needed to student to write, read, communicate, organize and schedule as a student's life is not much different from that of any knowledge worker. Portable personal computers will make a student's (and teacher's) life more effective as this practice leads schools to go paperless.

1.4 Schemes for implementing ICT in school

The ICT Information and Communication Technology School Scheme was launched in December 2004 to provide opportunities to secondary stage students to mainly build their capacity on ICT skills and make them learn through the computer-aided learning process. The Scheme is a major catalyst to bridge the digital divide amongst students of various socio-economic and other geographical barriers. The Scheme provides support to States/Union Territories to establish enabling ICT infrastructure in Government and Government aided secondary and higher secondary schools. The National Policy on Education 1986, as modified in 1992, stressed upon employing educational technology to improve the quality of education. The policy statement led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology @ Schools in 2004. Educational technology also found a significant place in another scheme on the up-gradation of science education. The significant role of ICT in school education been highlighted in the National Curriculum Framework 2005 (NCF) 2005. Use of ICT for quality improvement also figures in the Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA). Again, ICT figured comprehensively in OKCL has implemented the e-Vidyalaya project under ICT@Schools scheme, which provides easy access of technology designed to help students in 4000 Government and Government aided high schools to learn beyond regular classroom study. In addition, OKCL has implemented the e-Vidyalaya project under ICT@Schools scheme, which provides easy access of technology designed to help students in 4000 Government and Government aided high schools to learn beyond

regular classroom studies. The norm of schooling recommended by the Central Advisory Board of Education (CABE), in its report on Universal Secondary Education, in 2005.

With the convergence of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving school education in the country. The comprehensive choice of ICT for the holistic development of education can be built only on sound policy. In Odisha, 5T action plan for Higher Education Department has been approved by the state government to ensure better service delivery to public in Higher Education sector. The quality of education as well as teachers, both are interconnected. The main source of quality of education is the teachers' attitude towards ICT. From the very beginning, teacher educators have been the promoters in any educational reformation movement. Teachers who contribute in educational improvement were an effective and dominating personality. The teacher's effectiveness depends upon their attitude, characteristics and their classroom environment and its organization and management. In India, Various commissions and committees have recommended various methods for qualitative improvements in education. As a result, the teachers are inspired, motivated, to develop better curriculum, text books and teaching aids. But all teacher's efforts are meaningless, if they do not have the positive attitude towards educational technology. The teaching learning process has been greatly inclined by rapid advancement in Information and Communication Technology (ICT). The greatest challenge of society is related to face with knowledge and technological expertise that is necessary for finding, applying and evaluating information. Appearance of Information and Communication Technology has accompanied in a new era of our civilization in which digitalization has almost become a better alternative, because it has influenced every facade of human life including education. The introduction of Information and Communication Technology (ICT) in school education will encourage and motivate the students as well as teachers to explore new areas of advancement with reference to its latest developments in various stages. In today's era, every aspect of human life is influenced by scientific discoveries and inventions. The field of education also could not remain free from its effects. The development of ICT like radio, tape recorder, television, radio, computer etc. is bringing education closer to technology. Any part of education, whether it is method, objectives or teaching

process, or research work, provisions helpless due to lack of technology. Whether it is a problem related to theoretical knowledge of teachers or a problem in their field of experimental learning, technology help us. The truth is that knowledge of technology has become very essential for teachers. In the absence of this, the teaching – related knowledge of teachers or the knowledge and skills acquired in their testing and training is considered incomplete.

1.5 Need and significance of the study

ICT has great potential for enhancing teaching and learning outcomes. The realization of this potential depends much on how the teacher uses the technology. This would in turn depend, among other things, on the kind of training that the teacher has undergone. Teachers' attitude towards ICT is a very important factor which stakeholders ought to consider in implementing ICT in education. With the introduction of the new ICT initiatives, it becomes crucial particularly for newly qualified teachers to be confident in using ICT effectively in their teaching. The awareness in ICT helps the teacher to appreciate and adopt emerging communication technology and innovative practices. It provides guidance for the development of a high-quality strategies technology plan. It enables the teacher to update the new knowledge and the skill to use the new digital tools and resources. ICT includes electronic networks embodying complex hardware and software linked by a vast array of technical protocols. ICT can be defined as "anything which allows us to get information, to communicate with each other, or to have an effect on the environment using electronic or digital equipment". Some authors use the phrase learning technologies, while others simply describe it as technology. ICT is becoming a ubiquitous component of the physical and social world occupied by young children. It is an important part of the private and work lives of most people, including those who support young children's learning and development, whether as parents, family members, caretakers or early childhood educators. The teacher can interact with students of different ages from infants to adults, students with different abilities and with learning disabilities. If a student is to be prepared for the future, then it is essential that the teacher is aware of the realities of the world in psychology and technology. Then only the teacher can mould the future generation. The teacher is a vital player in any initiative aimed at improving teaching and learning process. Moreover ICT's at schools will have little impact if teacher is not actively involved in all phases of their integration to

curriculum. Teachers are required to decide how to make appropriate educational use of ICT in the classroom. In other words, teachers need to upgrade their skills and knowledge in the field of ICT as well as in another subject field. Teacher must to teach them with ICT so that they can teach in a better way. In the new technological era, the role of classroom teaching is directed towards ICT. In this way, it is desirable that the teachers should have learning skills and positive attitude towards ICT. In this study the researcher is intended to find out attitude towards ICT among secondary school teachers. On the basis of this research the following research question arises such as:

- What is the attitude of secondary school teachers towards ICT?
- What is the difference in attitude of male and female secondary school teacher towards ICT?
- What is the difference in attitude of secondary school teacher having age group 20-40 and 40-60 towards ICT?

1.6 Statement of research problem

Based on the above arguments following statement of problem is proposed:

“THE ATTITUDE OF SECONDARY SCHOOL TEACHERS TOWARDS INFORMATION AND COMMUNICATION TECHNOLOGY”

1.7 Objectives of the study

- To study the attitude of secondary school teachers towards ICT.
- To study the attitude of male and female secondary school teacher towards ICT.
- To study the attitude of secondary school teacher of various age groups towards ICT.

1.8 Hypotheses of the study

Hypothesis1 There is a high attitude of all the secondary school teacher towards ICT.

Hypothesis2 There is no significant difference in the attitude of male and female secondary school teachers towards the ICT.

Hypothesis3 There is no significant difference in the attitude of teachers of various age group towards ICT.

1.9 Operational definition of key terms

Information and communication technology (ICT):

Information and communication Technology “Information and communication technology” is the technology in which any subject or information is available anywhere in the universe, by any person at any time. Information and communication Technology is an old concept in which information process and all involved. Computer hardware, software, Internet is the basis of information systems. “Information and communication is a process in which individuals try to exchange” through mutual understanding.

Attitude:

Thurston and chew: - It is the sum of a person’s circles, prejudices and fixed views toward a specific subject. That is the amount of negative or positive influence related to a psychological eloquence or substance is an expression. Attitude is a feeling or opinion about something or someone. or a way of behaving that is caused by this. It's often very difficult to change people's attitudes. In this investigation Attitude towards ICT includes seven dimensions namely attitude towards ICT, Perception of ICT, Web2.0 tools, e-learning, internet usage. mobile learning and social media.

Secondary school teacher:

A secondary school teacher is a person working in an official capacity for the purpose of guiding and directing the learning experience of students in a secondary school, whether public or private.

1.10 Delimitations of the study

The present study is limited to following steps

- Some of the teachers may not be responsive.
- This research is limited to 60 teachers of secondary school only.
- Self-made tool was used in this study.
- Since the data was collected during COVID-19 pandemic time it was collected through online mode in google forms.
- Since the study covers Nuapada district this study is limited to Nuapada District only.
- The Likert scale used to measure attitude which is subject to response bias, subjective interpretation and restricted choice.

1.11 Conclusion

This chapter discussed the attitude of secondary school teacher towards ICT in Nuapada district, Odisha. The research problem statement and the research objectives were discussed. In addition, the chapter explored the assumption underlying the study and the limitation of he studies as considerations that were taken in to account during the study. The next chapter(chapter2) contains a detailed review if literature on the attitude of secondary school teachers towards ICT.