

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

The phrase review of literature consists of two words, review and literature. The term review means view carefully repeatedly and literature means the knowledge, information related to that field.

The review of literature in educational research provides us with the means of getting the information in our particular field of knowledge. Until researcher learnt what are the studies already undertaken and what remains still to be studied, he /she cannot develop a research project that will contribute to further knowledge in our field. Thus, the literature in any field forms the foundation upon which all the future work must be built.

The review of related literature is a key step in the research process. According to Wood and Haber (1995) literature review is an extensive, systematic and critical method reviewing the most important published scholarly literature on a particular topic. The major purpose of reviewing the literature is to determine what has already been done that relates to one's problem. Another important function of review is that, it points out research strategies, specific procedures and necessary instruments.

2.2 STUDIES RELATED TO ICT AND ACHIEVEMENT IN SCIENCE

In 2020, **Kesh Rana and Karan Rana** in their article paper "ICT Integrated in Teaching and Learning Activities in Higher Education: A case study of Nepal's Teacher Education" attempted to analyze how ICT training is very important for teacher education as for teaching at school level ICT integration teaching class is necessary. As on today's era ICT integration teaching is very important for fulfilment of teaching objectives. Their study reported the lack of clear strategies to implement the ICT education policy and fund for ICT infrastructure and professional development of university staff to integrate ICT in teacher education. so the authors suggested policy in practice, more sustainable mechanism need to be developed to provide ICT facilities for teacher education for which they can make the class more interesting and realistic by using ICT. The study found a gap between policies and the reality of the ICT use in higher education. The findings where the currently available ICT facilities are sufficient to realize the effective practice of ICT in teacher education at the university level. However, the students had an enthusiasm to use a higher level of ICT facilities if made available in their classroom.

Debarun Chakraborty, Soumya Kanti Dhara and Adrinil Santra (2018) in their research article "Effectiveness of ICT in Strengthening the Process of Higher education System in India" (2018) illustrated that how ICT based education effect the education system of India. The objective of this study was to discover the elements impacting the adequacy of ICT in reinforcing the procedure of advanced education framework in India.

In 2016, **Md. Rashedul and Md. Abu Raihan** attempted to identify the effectiveness of using ICTs to promote teaching and learning in technical education. Survey research design was adopted by the researchers for the study where the teachers of government polytechnic institutes of Bangladesh were considered as population. In Bangladesh, ICTs implication in

technical education is very few. Thus, for the convenience of the study, a purposive random sampling was used and the sample size was 120. A structured questionnaire is used for collection of data. The data were tabulated in the form of frequency distribution and quantitative analysis exposed in a tabular and graphical form. The result was found that more than 60% technical education teachers strongly agreed that ICTs are essential for enhancing the process of teaching learning in the poly-technique institutions.

Payal and Vinod Kumar Kanvaria (2017) attempted to analyse teachers' perceptions and barriers faced in using ICT tools in classrooms for learning. For this he used qualitative research design to collect data randomly from Government school teachers of 10 schools of Delhi. He used questionnaire for data collection from sample. He concluded from his study that integrating ICT tool into classroom learning will give effective product as students concentrate more on their study.

In 2015, a journal article named "ICT Integration in Education: Incorporation for Teaching & Learning Improvement" was published by Ahmad Zabidi Simini Ghavifekr., Muhammad Faizal, Ng Van and Yao & Zhang. The objective of this article was to identify the level of ICT integration in teaching and learning process in class room by primary teachers; to identify the relationship between teachers' level of computer skill and knowledge and ICT integration in teaching and learning process in classroom. The researchers took teachers from 10 public primary school in Klang Valley, Malaysia. This was a quantitative survey research and for which researchers took questionnaires for data collection. The result of this study showed that teachers should always be ready and well-equipped in term of ICT competencies and positive attitude to provide ICT-based learning for students to improve and enhance their learning quality.

In 2015, Simin Ghavifekr and Wan Arrthirah Wan Rosdy, in their paper attempted to make a study to analyse teachers' perceptions on effectiveness of ICT integration to support teaching and learning process in classroom. This research was quantitative research. A survey questionnaire was distributed randomly to the total of 101 teachers from 10 public secondary schools in Kuala Lumpur, Malaysia. The data were analysed for both descriptive and inferential statistics by using SPSS. The researchers found that teachers' well-equipped preparation with ICT tools and facilities is the main factor in success of technology-based teaching and learning and students will get benefitted more in comparison to traditional method.

Rathnabai and Angel (2010) studied the infusion of ICT in the teaching-learning process. The findings of her study were: the students who have undergone the CAI approach has scored more in the achievement test than the students who underwent the traditional approach. Though there is significant difference, the 24 mean scores are minimums which say that there is no much acquisition of knowledge happened the intervention.

Estling Vannestal (2009, p. 17) finds out several benefits of using ICT in the language classroom. First of all, ICT helps to create more difference in the classroom, which leads to increase motivation in the students and thus better situation to learn the target language. The Internet provides the opportunity for students from all over the world to interact with each other. This is possible through emails, online calls or in a chat. ICT is likely to help develop the understanding of other cultures in participates. The use of ICT also gives the students an opportunity to write for others rather than only for their teacher or peers. Estling Vannestal (2009, p. 18) in addition states that ICT can help adapt the teaching to the individual level of

the learners. Students who achieve well can receive more advanced. Also, students with learning disabilities can greatly benefit from the use of ICT.

Sonya Khanum in his study, Application of ICT in English class rooms : A study of the secondary schools in Dhaka- From this study we can conclude that there is a majority opinion that using ICT in teaching as favoring a number of processes related to teaching and learning – in particular, those involving attention, perception, responding, motivation and application of learning and understanding. It is noticed that in language classroom teachers' performance and activity related with technology are more interesting to students'. Teachers incorporate ICT development plan to ensure coherence of ICT implementation in the language teaching-learning activities. Teaching and learning are in evolution in the era of modern technologies. Technologies have extended accessible educational opportunities for the students to achieve their goal. There need to experiment appropriate tools of ICT for educational development and to consider the role that technology can play supporting role.

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Ali, Haolader and Muhammad (2013) found that instructors and executive regularly confront issues on the viable coordination of ICT into classroom rehearses. An exact examination was directed in higher establishments of learning in Uganda to discover the elements impacting the utilization of ICT to make educating and learning successful and distinguish the advancement in the instructing learning process realized by ICT. The discoveries of this examinations uncovered those instructors and chairman had firmly supported the joining of ICT into educating learning forms. ICT might be counted in bringing the advancement, for example, e-learning, online understudy enlistment, online investigation material, online conference with scholarly specialists, in the educating learning process. The shot of successful combination of ICT in instructing learning procedure can be expanded through everyone of these components. More preparing ought to be bestowed to the Educators and chairmen in understanding the noteworthiness and use of ICT.

A research article "The role of ICT in General Economics Teaching: an example from Turkey" (2012) was published by **Cemlik and Sumeyra Buran**. This research is an experimental research for which the researcher took 60 samples and divided the participants into two groups i.e. experimental group and control group. The participants studied for the six weeks for the experiments. For this data collection the researcher took pre-test before teaching and post-test after teaching. Finally, a questionnaire was given to experimental group participants after post-test. The objective was to investigate of computer assisted economics classes learning by using e-learning support. The researchers found that there was a significant difference between the pre-test and post-test score of experimental groups and a significant difference again was seen in term of post-test scores between experimental group and control group. The final conclusion found that computer-assisted economics classes learning has more effect on learners' economics learning abilities.

Albert Sangra and Mercedes Gonzalez-Sanmamed (2010) attempted to analyze what is happening at schools regarding the integration and use of ICT and to examine teachers' perceptions about what teaching and learning processes can be improved through the use of ICT. They applied a multiple-case study research methodology. From previous exploratory research, four different types of schools were determined. A multiple-case-study research methodology was applied. From a previous exploratory research, four different type of schools were determined. Data analysis showed that there was a widespread view that ICT in teaching favours several teaching and learning process. And also, in some particular there was a view that the contribution of ICT to the improvement of teaching and learning process is higher in schools that that have integrated ICT as an innovative factor.

An article paper was published by **Dr D. Amutha** about the role of ICT in improving the quality of education. In this paper; he discussed the role and effect of ICT, and how they can promote future growth and development. He used qualitative data for his paper analysis. The findings of the study showed that proper integration of ICT with teaching/ learning environment increases the chance of gaining education along with increased productivity.