

Chapter II

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

A review of related literature facilitates a researcher with an overview about the documents that transcribed in context to present study. It includes review of abstracts, articles, quotations, acts, policies, programmes, previous researches, etc. It sets out proven theories and their methodologies. There are various forms of literature review available along with availability of several types of literature to be review. It is categorized in various form like books, peer-reviewed articles, journals are covered under academic literature whereas government reporting for social workers, professional associations, policy makers, teachers etc., are covered under professional literature. Increasingly important too are web-based documents, including blogs and conference papers, though, in principle, they can be categorised according to whether they are addressing to professional or academic audiences. There are different categories of review, even if most literature reviews generally share a concern for providing an overview of a field.

In the earlier chapter, the researcher discussed in detail the need of the study, its objectives etc. This chapter is set apart for reviewing the related literature. It suggests a researcher reading, locating, analyzing, interpreting, and evaluating reports of various researches. It also provides useful reports on opinions and observations that are not accessible by a researcher on his/her planned research study.

2.1.1 MEANING OF REVIEW OF LITERATURE

The phrase “review of literature” comprises of two words: review and literature. The word literature expresses different meaning from the conventional meaning. This is used with reference to the language. The term literature is used to express the theoretical, practical and its research studies knowledge of a specific field of investigation of any discipline in research methodology. Precisely the term “review” signifies to organize the knowledge of the specific field of research to improve the existing formation of knowledge to show that present study would be an addition to existing concerned field.

According to Good, Bar Scates “The competent physician must keep abreast of the latest discoveries in the field of medicine. Obviously the careful student of education, the research

worker, and investigator should become familiar with location and use of services of educational information.”

According to John W. Best “Practically all human knowledge can be found in books and libraries, unlike other animals that must start a new with each generation, man builds upon the accumulated and recorded knowledge of the past, his constant adding to the vast store of knowledge makes possible progress in all areas of human endeavor.”

According to C. V. Good, “The keys to the vast store house of published literature may open doors to sources of significant problems and explanatory hypothesis and provide helpful orientation for definition of the problem, background for selection of procedure, and comparative data for interpretation of results. In order to be creative and original, one must read extensively and critically as a stimulus for thinking.”

2.2 OBJECTIVES OF LITERATURE REVIEW

Review of the related literature allows the researcher to familiarize himself/herself with present knowledge in the field or concerned area in which his or her research is going to conduct besides serving the following specific purposes:

- It facilitates the researcher to formulate new problem on basis of literature reviewed, which includes theories, thoughts, ideas, views, explanations, or hypotheses.
- It is carried out as it provides evidences to the researcher about already problems discussed and provides suggestions available to solve present problem adequately without requiring additional investigation which further avoids duplication of work.
- The research hypothesis can be formulated by the researcher based on existing literature reviewed comprises of various studies and sources.
- The review of literature needed as it helps the researcher in choosing the appropriate tools, techniques, sources of data collection, and methods to the present study.
- The comparison among the data and their findings can be easily done with the help of reviewing literature. It is useful in the interpretation and its discussion for results. The conclusions drawn in present study may be significantly compared with the existing available studies. It may be used as the subject for findings of the present study.

2.3 NEED OF REVIEW OF LITERATURE

The review of literature is essential due to the following reasons:

- ❖ Primarily step in planning a research work is thoroughly review existing researches that executed in the particular area of concern and its related areas.
- ❖ The analysis and interpretation of present research usually gives the researcher an indication of the direction in which present study is taking place.
- ❖ It is an important step to follow by every researcher to be update himself/herself regarding the information related to literature of the problem taken up. It considered as one of the most significant steps or course of actions to design the present study and conducting it.
- ❖ It provides basis for formulating problem of study, which facilitated by comparing the existing problems. The researcher benefitted with the grounds on which researcher can construct objectives, formulates hypothesis by reviewing the related literature. It also provides the need, the research gap, and rationale for the study.
- ❖ With reference to existing literature concerned to present area of study, the researcher can also discuss outcomes and conclusions in detail.
- ❖ It is essential as it provides the grounds, the basis and sources which helps researcher in formulating a blue print for his/her present study.

2.4 REVIEWS OF RELATED LITERATURE

Before analyzing and discussing in detail about the dissertation topic “Effectiveness of ICT Integrated Teaching in Achieving Learning Outcomes in Physics of Grade 9th Students”, it is noteworthy to make review of the existing literatures on the topic related to ICT integrated teaching and learning, teaching and learning of Physics at secondary level education, ICT related topics and so on. Any literature available on the ICT integrated teaching and learning of Physics may vary from individual researcher to committee report, empirical studies to descriptive studies and general nature of studies. Through review of related research, the researcher can find out the gap existing in that research and can identify the problems related to that variable. After identification of problems, the researcher can finally select the problem for research. Followings are some literatures, articles, journals which the researcher reviewed for his dissertation work.

1. **In 2020, Kesh Rana and Karna Rana** in their article paper “ICT Integration in Teaching and Learning Activities in Higher Education: A case study of Nepal's Teacher Education” attempted to analyzed 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 ICT policies and the reality of the ICT use in higher education. The findings were the currently available ICT facilities are insufficient 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.
2. **Debarun Chakraborty, Soumya Kanti Dhara & Adrinil Santra (2018)** in their research article “Effectiveness of ICT in Strengthening the Process of Higher Education System in India” 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. For this research, the researchers took 386 examples and used 5 point Likert scale for data collection and analysis and utilized convenience sampling technique and to find out the result Exploratory Factor Analysis and Multiple Regression Analysis have been used. The findings of this study claimed that cost of ICT is one of the most influencing factors on effectiveness of ICT.
3. Despite lots of budgeting and accommodation of funds; there are several barriers regarding appropriate use of Information and Communication Technologies. **Payal and Vinod Kumar Kanvaria (2017)** attempted to analyze 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.

4. **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.
5. **In 2015**, a journal article named “ICT Integration in Education: Incorporation for Teaching & Learning Improvement” was published by **Simini Ghavifekr, Ahmad Zabidi, 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, knowledge and ICT integration in teaching and learning process in classroom, the researchers took 61 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.
6. **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 which 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 favors 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 than that have integrated ICT as an innovative factor.

7. 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.
8. **Kannan and Husain (2008)** conducted “A Study on Effectiveness of Use of Computer Technology in Teaching the Concepts of Physics at Senior Secondary Level”. The analysis of data demonstrated the fact that computer assisted teaching was the best method to teach the concepts of Physics at senior secondary level. There was not much profitable learning by the students of Physics who learnt without the aid of the teacher or by the traditional method of teaching Physics.
9. **Dange and Wahab (2006)** studied the “Effectiveness of Computer Assisted Instruction on the Academic Achievement of IX Standard Students in Physical Science.” Their findings showed that there was no significant difference between mean gains scores of experimental and control groups of pre-test. There was no significant difference between mean gain scores of pre-test and post-test of control group and experimental group. There was no significant difference between mean gain scores of post-test of control and experimental groups.
10. **Rajaguru (1999)** reported that multi-media instruction facilitated the learning-disabled children to learn science concepts better than their counter parts in the conventional teaching group.
11. **Ramesh (1998)** studied individualized instruction as an alternative strategy in development of cognitive skills in atomic physics among the students of class X. The results showed that the groups instructed through programmed instruction and Computer Assisted Instruction showed significant improvement in cognitive skills than the group that was instructed through conventional teaching.

12. **Vasanthamani (1996)** studied the “Effectiveness of Multi-Media Approach in Teaching Physics at the Secondary Level.” The pre-test achievement score was not significant for the pupils of urban and rural locale but there was significant difference in the post-test scores of boys and girls.
13. **Nishino and Koki (1994)** undertook an exploratory investigation to determine the effects of a multimedia computer-based science learning environment and gender differences, on achievement and attitudes and interests of students in an eighth-grade science classroom. The students in the experimental classroom had a significantly higher post-test mean score in 'self-concept' than the students in the traditional science classroom.

2.5 CONCLUSION

Technology-based teaching and learning is more effective in compare to traditional classroom. This is because, using ICT tools and equipment prepare an active learning environment that is more interesting and effective for both teachers and students. To the researcher's knowledge there are limited number of studies focused on effectiveness of ICT integrated teaching in achieving learning outcomes in Physics of Grade 9th students. So, the researcher decided to undertake the study. The review of related literature helped the researcher in strengthening the background of the study and forwarding in the study.