

CHAPTER – II

REVIEW OF RELATED

LITERATURE AND

RESEARCH

CHAPTER – II

REVIEW OF RELATED LITERATURE AND RESEARCHES

A summary of the writings of recognised authorities and of previous research provides evidence that the researcher is familiar with what is already known and what is still unknown and untested. Because effective research is based on past knowledge this helps to eliminate the duplication of what has been done. Review is a valuable guide to defining the problem, recognising its significance, suggesting promising data gathering tools, appropriate study design and sources of data.

In research report review of related literature and research is very important because it gives an idea of various dimensions of our research. Though a lengthy one it is a very fruitful phase of whole research process.

2.1) Purposes of Survey of Related Literature and Researches

Besides forming one of the early chapters in research report for orienting the readers, survey of related literature and researches serves some other purposes. Good, Barr and Scates have summed up these as follows:

1. To show whether the evidence already available solves the problem adequately without further investigation, and thus to avoid the risk of duplication.
2. To provide ideas, theories, explanations or hypotheses valuable in formulating the problem.
3. To suggest methods of research appropriate to the problem.
4. To locate comparative data useful in the interpretation of results.
5. To contribute to the general scholarship of the investigator.

2.2 Review of related literature:

Singh R.P. (Nov. 26 – Dec. 02, 2007) University News : Association of Indian Universities, New Delhi.

In this special issue one article by R.P. Singh is 'teaching teachers for an knowledge society' points out to a teacher training program. It should focus on dialogues, discussions, question answer sessions where students are free to be inquisitive and creative. The key lies in the 'freedom' which enables a dialogue to become meaningful.

Sharma S. (Eds.) (2006) Constructivist Approaches to teaching and learning; Handbook for teachers of secondary stage ; NCERT, New Delhi.

In this handbook, 8 articles by well known authors are given. These articles are completely devoted to the total theme of constructivism. Two articles give theory of construction and other six articles explain learner centered approaches in detail.

Mohanti, S.K. & Pani, A. (Nov., 2009) University News : Association of Indian Universities, New Delhi.

In this issue one paper by S.K. Mohanty and Amarendra Pani is 'Constructivist paradigm : implications for teacher evaluation programme' highlights the role of constructivist approach in constructing knowledge by the learner. Further a discussion is made how to employ this theory of learning in teacher education programme in the direction of National Curriculum Framework of NCERT, 2005.

Dwivedi, R.D. (Feb., 2010) University News : Association of Indian Universities, New Delhi.

In this issue one paper by R.D. Dwivedi is 'From behaviourism to constructivism'. A Paradigm Shift in teaching learning process' points out history of constructivism, constructivist curriculum, teaching and assessment, technology and constructivism and benefits of constructivism.

Sankpal, S.P. (March 2010) Beyond Friendship ,Knowledge Construction

And Evaluation

In this article author gives the historical background of constructivism, constructivism and learning, how the constructivist class should be? , assumptions of constructivism, assessment of student in constructivism in detail.

Panase, R. (July, 2010) Beyond Friendship (Neurolinguistics)

In this article, author points out to the neurolinguistics, Language is a highly complex but creative fact. Further the discussion is on researches done to point out the exact place of language in brain. It gives further details of Broca's aphasia and Wernick's aphasia.

Panase, R. (Oct., 2010) Constructivist Education

In this book author points out the difference between behaviourist and constructivist, base of constructivism, constructivist educational process, principles and objectives of constructivism with beautiful and exact pictures in between.

Parasnis, H. (March, 2010) Shikshan Sankraman :

Collection of various articles related to knowledge construction, Pune.

In this issue knowledge construction – challenge, knowledge construction teaching and curriculum, teaching for knowledge construction, Assessment and evaluation, teaching for knowledge construction - Concept Attainment Model, Inductive Thinking Model, Enquiry Training Model, Cooperative Learning, Advanced Organizer Model, these 11 articles researcher found.

In this issue author wrote that knowledge construction is the soul of NCF 2005. It has its characteristics and assumptions. To expand the quality of education knowledge construction is important. Author has also talked of difference between traditional class and knowledge construction classroom.

Further author discussed that interactions are important in knowledge construction, how the concept Mapping is important strategy in knowledge construction. Author discussed five models further used for knowledge construction.

Framework for thinking : A handbook for teaching and learning by Moseley D. Baumfield V., Elliott J., Gregson M., Higgins S., Miller J., Newton D. (2005) : Cambridge University Press, UK.

This handbook focuses on the thinking processes necessary for learning. It provides descriptions and evaluations of 42 major frameworks including Bloom's taxonomy, de Bono's lateral and parallel thinking tools, Gardner's theory of multiple intelligences and Paul's model of critical thinking. The handbook offers practical advice in the form of choices and recommendations for the use of frameworks in teaching, learning and assessment.

2.3 Review of related researches:

2.3.1 Review of related researches done in India:

Shaida, A.K. (1976) in her research, “Teaching patterns – questioning and feedback – and pupil attainment.”

The main objective was

i) To study the effects of four patterns of teaching namely narrow questions with feedback (P₁), narrow questions with no feedback (P₂) broad questions with feedback (P₃), broad questions with no feedback (P₄) upon the attainment of class 8th boys in social studies in terms of knowledge, comprehension, application and total scores.

For this study researcher had been selected all the 8th class pupils of government higher secondary school at Kaithal.

Major Findings :

- i) The teaching pattern of narrow questions with feedback produced significantly higher mean for the development of knowledge.
- ii) The teaching patterns of broad questions with feedback produced significantly higher mean for application.

Roy, S. (1972) in his research : “Classroom questioning and pupil achievement : An inquiry into teaching style.”

The major objective was :

i) To find out the relative effectiveness of the three styles of teaching upon pupil achievement for the instructional objectives of knowledge, comprehension, application and total achievement. 3 styles were lecturing, questioning and response without feedback, questioning – response feedback.

The sample chosen was the 98 students of Baroda High school studying in VIII standard.

- i) Three teaching styles had equal effects on the development of knowledge and application abilities and total achievements of pupils.
- ii) For comprehension abilities lecturing significantly differed from question – response feedback sequence.

Jangira, N.K. and Dhoundiyal, N.C. (1981) "Structural characteristics of classroom questions, pupils responses and pupil response management behaviour of social studies teachers."

The specific objectives of the investigation were :

- i) To study the incidence of classroom questions in social studies lessons of Grade VIII.
- ii) To study the different levels of classroom questions used in social studies lessons.
- iii) To study the structural characteristics and quality of classroom questions in social studies.
- iv) To study the types of pupils response solicited by the classroom questions.

The major findings were –

- i) The incidence of classroom questions in social studies lessons under study was quite high on an average twenty nine questions were asked in a lesson of thirty five minutes duration.
- ii) Most of the questions asked in the social studies classroom were at memory level. The incidence of questions of levels higher than memory did not come to even one per lesson.

Kumar S. (1982) An investigation into the questioning patterns of social studies and science teachers in the English medium.

Major objectives of the study were;

- i) To analyse the classroom questioning behavior in the context of total teaching behavior.
- ii) To study the associates of different kinds of questions with students response and initiation.

The major findings were:

- i) In the classroom interaction about 71.37% of the total time was used by teacher. Of this teacher's talk questioning formed only 6.9%.
- ii) The possibility of a question to be followed by response got decreased with an increase of the level of complexity of questions.
- iii) Increase in the use of questioning increased student's response and initiation.

Arockiam, A. J. (1990) his study revealed that primary school teachers improved their questioning skill through the self-learning package and training on questioning strategy.

Ghugare, S.V. (1993) in her research **“A study of an effect of training in questioning for feedback upon interactive decision making of teacher trainees.”**

Major objectives were –

- i) To study the effect of training in questioning for feedback on decision making of teacher in the classroom instruction.
- ii) To study the effect of training in questioning for feedback upon general teaching competency and the related component of teaching skills.

The sample was 12 student teacher from Vasantrao Naik B. Ed. Of Kolhapur.

Major findings were -

- i) Student teachers thought more of learners than preactive behaviour, than internal factor and lastly the material.
- ii) Questioning the feedback is ineffective in bringing about the significant changes in decision making behaviour with respect to antecedent.
- iii) Training in questioning for feedback is effective in bringing about significant changes in general teaching competency.
- iv) Training in questioning for feedback is effective in bringing about significant changes related to teaching skill i.e. formative evaluation teaching skill.

Patil, M.S. (2004) in her study **“Developing a pedagogy based on questioning among student – teachers for creating communities of thinking in primary school students”**. Major objectives of the study were:

- i) To prepare a classification of different types of fertile questions based on questioning pedagogy and to establish characteristics and scope of each.
- ii) To analyse the text book of science subject of standard VI, VII, VIII and to identify and classify the type of fertile questions based on above classification.

- iii) To prepare Training Package on Questioning (TPQ) for student teachers of science methodology based on analysis of assessed lesson plans in science subject.
- iv) To provide student teachers of science methodology orientation on Questioning pedagogy for developing communities of Thinking in primary school students.
- v) To make appropriate suggestions for developing student – teachers questioning pedagogy which will increase among school students communities of Thinking. The sample for the study was 222. Student teachers of 8 colleges of education in Kolhapur city and 888 lesson plans of science subject.

Major findings of the study were:

- i) The scope and characteristics of the six fertile questions have been elaborated in which the objective no. 1 of the study has been fulfilled.
- ii) The percentage of undermining and charged questions is least in all the three standard science textbook.
- iii) In lower classes i.e. Std. VI where thinking process through question should be maximum, it found to be the least.
- iv) The TPQ was found to have increased considerably the student teachers awareness and use of rich, charged and undermining questions in their science lesson plans prepared for teaching standards VI, VII and VIII.
- v) The TPQ was found useful as student teachers were able to frame and incorporate higher order fertile questions in their science lesson plan.

2.3.2 Review of related researches done in abroad

Rosenshine (1971) in his study found that large amount of student-teacher interaction promotes student achievement.

Gall (1984) in his study found that emphasis on fact questions is more effective for promoting young disadvantaged children's achievement, which primarily involves mastery of basic skills; and emphasis on higher cognitive questions is more effective for students of average and high ability.

Willen and Clegg (1986) in his study suggested following major questioning techniques for teachers to foster higher student achievement.

- i) phrase questions clearly.
- ii) ask questions of primarily and academic nature.
- iii) encourage students to respond in some way to each question asked.
- iv) balance responses from volunteering and non volunteering students.
- v) Probe students' responses to have them clarify ideas, support a point of view, or extend their thinking.

Morgan and Saxton (1991) found in their study following reasons to ask questions.

- i) The act of asking questions helps teachers keep students actively involved in lessons.
- ii) While answering questions, students have the opportunity to openly express their ideas and thoughts.
- iii) Asking questions helps teachers to pace their lessons and moderate student behaviour.
- iv) Questioning students helps teachers to evaluate student learning and revise their lessons as necessary.

Wilén, (1991) and Arends, (1994) both the study found that there is no difference in achievement between students whose teachers use mostly high level questions and those whose teachers ask mainly low level questions.

Chuska, (1995) found in his study that vague questions, trick questions and questions that may be too abstract for children of their age if asked, students will usually not know how to respond and may answer the question incorrectly. That evoke some negative attitudes towards learning, and hinder the creation of a supportive classroom environment.

Guthrie et al. (2004) in his study compared three instructional methods for third-grade reading: a traditional approach, a strategies instruction only approach and an approach with strategies instruction and constructivist motivation techniques including student choices, collaboration and hands-on activities. The constructivist approach, called CORI (Concept

Oriented Reading Instruction) resulted in better student reading comprehension, cognitive strategies, and motivation.

Jong Suk Kim (2005) found in his study that using constructivist teaching methods for 6th graders resulted in better student achievement than traditional teaching methods but no difference in student self concept and learning strategies.

Hmelo-Silver, Duncan, Chinn (2007) found in their study success of the constructivist problem based and inquiry learning methods over traditional one. They describe a project called Genscope - an inquiry learning based science software application.

Dogm, Kalender (2007) compared science classrooms using traditional teacher-centered approaches to those using student-centered, constructivist methods. In their initial test of student performance immediately following the lessons, they found no significant difference between two methods. However in the follow-up assessment 15 day later, students who learned through constructivist methods showed better retention of knowledge than those who learned through traditional methods.

2.4)Direction for the present study from review:

From the above reviews of related researches and literature researcher got the following important details for the elaboration of present study.

2.4.1) Classroom questioning and pupil achievement :

There is very close relationship among classroom questioning and pupil achievement. Questioning style is more fruitful than any other teaching style. Questions help to increase student's response and initiation. Emphasis on higher cognitive questions is more effective for students of average and high ability. The act of asking questions helps teachers keep students actively involved in lessons.

2.4.2)Training of questioning skill :

Primary school teachers improved their questioning skill through the self

learning package and training on questioning strategy. Training in questioning for feedback is effective in bringing about significant changes in general teaching competency. Training Package on Questioning (TPQ) was

found to have increased the student teacher's awareness of various types of questions.

2.4.3) Questioning Pedagogy :

Developing a pedagogy based on questioning among student teachers proves useful to increase awareness and use of questions. Training of questioning pedagogy found helpful to frame and incorporate higher order fertile questions. Questioning pedagogy helps to create communities of thinking among primary students.

2.4.4) Historical background and theory of constructivism :

Researcher got a lot of valid information from the abroad researches and literature about constructivism. From these reviews researcher got the firm and strong base of constructivist theory.

2.4.5)Methods of constructivism :

Researcher come to know various learner centered methods of constructivism. How one should apply these methods in a classroom, principles of the various methods, classroom settings for the application of these methods, positive effects of these methods.

All the above discussed researches are completely based on questioning and its effect, problem solving and inquiry based learning, CORI methods of constructivism and its positive effect. But in the present research, Researcher has combined the questioning and knowledge construction both the themes together which no one has attempted to do yet.

2.4.6)Models of teaching and knowledge construction:

Researcher got the information regarding following five models of teaching and their use for knowledge construction –

- i) Concept Attainment Model
- ii) Inductive Thinking Model
- iii) Inquiry Training Model
- iv) Cooperative Learning Model
- v) Advanced Organiser Model

Review of related researches and literature thus gives direction and evidence to prove the uniqueness of present study.