

CHAPTER - II
REVIEW OF THE
RELATED
LITERATURE

2.1 INTRODUCTION :

"Practically all human knowledge can be found in books and libraries. Unlike other animals that must start anew 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 endeavour."

John W. Best

Review provides an overview & analysis of selected areas of relevant research through critical and synthesising essays and defining the current state of knowledge in the field.

The purpose of the reviewing of literature is to build up the context to provide basis for research questions since a good research is based upon the relevant evidences that are known in the area of research for comprehensiveness. It is essential that the new work be based and built on what has already been accomplished. Review helps the investigator to delimit and define his/her problem avoiding duplication. It also gives insight into the problem & research methodology.

A careful review of various journals, books, dissertations, abstracts related to educational research has been done by the investigator, which forms the content of this chapter.

2.2 STUDIES DEALING WITH RELATED TOPIC :

STUDIES AT THE NATIONAL LEVEL :

- a. Bhaduri, S. Indrani (2003) developed concept mapping as a learning experience tool to realize the objectives of environmental education. She studied to what extent the objective of developing

aptitudes towards environmental education are realized using concept mapping and found that there is no significant difference in the gain between the science stream students versus the social science & languages students and that there is no significant difference in the gain between the English medium versus the vernacular medium. But there is definitely an attitudinal gain between female and male students.

- b. Dixit, S. (1988) studied thirty five information acquisition strategies of college students in relation to a number of social demographic and psychological variables. Factor analysis revealed eleven factors to represent thirty-five strategies and to account for variance in performance.
- c. Pal, Yesh (1991) studied Inter-domain relationship between creativity and Intelligence by canonical analysis. He studied the relationship between the factors of creativity and intelligence. He also analysed the correlation matrix related to fifteen measures of creativity and intelligence.
- d. Pillai, A.S. (1989) made an attempt to study various measures of concept learning. He also studied the structure, attributes and their interdependence and the hierarchy of the concept learning process.
- e. Raghvan, Andal (1991) studied the concept mapping in learning physical science and its relation to scholastic performance, cognitive ability, attitude towards concept mapping and science interest among standard ninth students.
- f. Rajeshwari, B. (1988) studied the levels of concept attainment in middle school children and examined their relationship with intelligence and scholastic achievement. The pupils of higher grades were found to score higher than those of lower grades at the concrete and identity levels of concept attainment & including

taxonomic relations and applications of principles with evidence for minor differences for different types of concepts.

- g. Sharma, Sushila (1988) developed and administered Piaget like standard tasks for measuring the development of science concepts of weight, volume and density among eleven to sixteen years of age students. Findings revealed that the concept of weight was fully conserved by the age of ten plus students and the concept of volume conserved at the age of fifteen plus, the concept of density showed only about fifty percent conservation by the age sixteen plus.
- h. Singh, Sunder (1988) did an experimental study to investigate the implication of the morphological model of structure of intellect for concept attainment in physical chemistry. He intended to study the relationship between various reasoning ability tests providing measures of cognition & convergent productions of semantic classes, relations & implications he also wanted to know the relationship between concept achievement in physical chemistry and reasoning ability and measures of cognition & convergent production of semantic classes, relations and implications.

STUDIES AT INTERNATIONAL LEVEL:

- a. Anderson, et.al (1997) worked on enhancing literacy with tools for visual thinking. It was a study based on computer based concept mapping. He found that concept mapping augments students meaningful learning. It provides a framework that helps when systematizing materials in a particular knowledge domain.
- b. Caine & Caine (1995) worked on brain based learning and found that brain serves as a pattern detector, it passively takes in and actively processes information. It also classifies the data into schematic patterns.

- c. Horten, P.B. (et. al.) (1993) tried to investigate the concept mapping as an instructional tools and found that concept mapping raised students achievement and also resulted in the improvement of students attitude.
- d. Joseph. D. Novak (1991) In his clarity with concept maps tool for students & teachers has found that concept maps help in organization of knowledge. Concept map has also come up as a promising alternative evaluation tool.
- e. Lian, M.W.S. (1998) investigated into high achievers and low achiever knowledge organization and knowledge processing in concept and found out that high achievers are able to construct better concept maps as compared to the low achievers and it is low achievers that benefit more from the concept maps rather than high achievers.
- f. Novak, J.D. and J. Wandersee, (1991) studied the concept mapping in detail and came out with the conclusion that concept maps help in creation of powerful knowledge and that it not only helps in utilization of knowledge in new contexts but also retention of the knowledge for long periods of time.
- g. NSTA conference of Scientists (1964) worked on the conceptual schemes and the process of science and identified the major conceptual schemes that could guide curriculum development and also used these schemes to represent relationships in text books.
- h. Plotnick, (et. al.) (1998) Underwent a graphical system for understanding the relationship between concepts and found that concept maps are particularly useful for representing networks of concepts and that concept maps enhance the problem solving phases of generating alternative solutions and options.

2.3 CONCLUSION:

The studies reviewed in this chapter present fairly clear evidence that the concept mapping can prove to be a promising tool which can enhance the ability of low achievers. The need of the hour is to make concept mapping an essential part of every lesson in the text books and the emphasis should be made on cross-domain concept mapping, which fosters cross-domain information integration and connections between learning and life experiences.

The investigator tries to suggest a model in which the connections between academic competencies and concept mapping abilities are identified from the perspective of brain function. The investigator has further stressed on cross-domain concept mapping an area which has not been explored much, it encourages learner to integrate knowledge from a wide range of disciplines, making meaningful learning more possible.