CHAPTER 3

REVIEW OFRELATED RESEARCHES

3.1 Introduction
3.2 Purpose of the Review
3.3 Importance of the Review
3.4 Review of Related Researches
3.5 Review of Research Paper and Articles on Critical Thinking
3.6 Distinguish Features of the Present Study
3.7 Summary
CHAPTER III
REVIEW OF RELATED RESEARCHES

3.1 INTRODUCTION

Review of the various theories and past literatures are very important and necessary to the investigator. It helps the investigator to prepare the work design and gives ideas how to select or prepare appropriate tools and samples. It also helps the investigator to get a closer view of the present work. It also helps to solve the problem scientifically, provide useful strategies and provide insight to adapt method for research.

The review of related literature is nothing but a wild look into the past research work done in the specific field. Review of the work is necessary to avoid the risk of duplication. It also suggests methods of research and helps to locate comparative data useful in the interpretation of results. Research work done in the past serve as solid foundation on which any new investigation firmly rests.

"The review of related literature in any field forms the foundation upon which all future work will be build". (Borg and Gall, 1983)

"Educational Research is not or at least should not be carried out in an informative vacuum." (William Wiersma, 1976)

"A familiarity with the literature in research problem helps the students to discover what is already known, what methods to attack have been promising and disappointing and what problems remain to be solved.” (Best, 1954)

"The keys to the vast storehouse of published literature may open doors to sources of significant problems and explanatory hypotheses and provide helpful orientations for definitions and comparative data for interpretation of results. In order to
be truly creative and original, one must read extensively and critically as a stimulus to think.” (Good, Barr and Scates, 1954)

3.2 PURPOSE OF THE REVIEW

Review of related research is an evaluative report of studies found in the research related to selected area. The review should describe, summarize, evaluate and clarify this study. It should give a theoretical basis for the research and help to determine the nature of own research.

A related review goes beyond the search for information and includes the identification between the past study and field of one’s research. While the form of the related research review may vary with different types of studies, the basic purposes remain constant:

- Provide a context for the research
- Justify the research
- Ensure that the research hasn’t been done before
- Enable the investigator to learn from previous theory on the subject
- Illustrate how the subject has been studied previously
- Highlight errors of previous research
- Outline gaps of previous research
- Help to refine, refocus or even change the topic

3.3 IMPORTANCE OF THE REVIEW

Every piece of ongoing research needs to be connected with the work already done, to attain an overall relevance and purpose. The review of literature thus becomes a link between the research proposed and the studies already done. It tells the investigator about aspects that have been already established by other investigator and also gives a chance to the investigator to appreciate the evidence that has already been
collected by previous research. Thus it projects the current research work in the proper perspective.

A large part of review actually needs to be done even before the research project is formalised. This is essential to make sure that you are not repeating the work that someone has already done earlier. Sometimes, if the research proposed has already been undertaken earlier, then it provides an option of modifying the work by adding a new perspective or altering some of the methods of research to obtain a perspective that will be different from earlier works.

A good researcher usually goes through a lot more past studies. This is because different study may have differing relevance for the current project and all of it may not worth reporting in the end, but in the initial phase. when you are looking for all aspects of an issue that could be relevant one would like to extensively explore the literature and see if any relevant findings are already available. Some of the literature reviewed is directly relevant and hence used as a preface to explain the background of work. Then other reports may be relevant from the point of view of the project as they provide some clues to the puzzle by suggesting a hypothesis, which may be the subject matter of research project.

Lastly, review of the related studies is also important to highlight difference in opinions, contradictory findings, the different explanations given for their conclusions and differences by different investigator. Thus review of related studies is a very important part of one's research.

3.4 REVIEW OF RELATED RESEARCHES

Investigator does not found any research done at doctorate level on construction and standardization of critical thinking test in India as well as in foreign countries. Hence, investigator has reviewed researches done in another cognitive domain.
Study 1
★ Name: Sunisa Kanchanajan
★ Title: Construction and Standardization of Creative Thinking Test for Secondary School Students of Thailand.
★ University: Sardar Patel University, V.V.Nagar, Gujarat (Ph.D.)
★ Year: January 2004
★ Objectives:

The objectives of this study were:
1. To construct and standardize the creative thinking test for secondary school students of Thailand.
2. To establish norms of the creative thinking test of secondary school students of Thailand.
3. To study the creative thinking of secondary school students in relation to sex, area, grade and IQ.
★ Sample:

The sample in the study consisted of 6300 school students of grade VII to IX of Southern part of Thailand, which were studying in secondary schools during academic year 2002-2003.
★ Research Method:

Descriptive survey method was used for obtaining specific information for study.
★ Test and Statistic:

This test has 30 items in four parts i.e. (i) Fluency ability part, (ii) Flexibility ability part, (iii) Originality ability part and (iv) Elaboration ability part. The reliabilities were found by Test-Retest method, Split-Half method, K-R 20 and K-R 21 formula and Analysis of Variance Approach. The reliabilities were between 0.870 and 0.987. Concurrent validity, content validity, construct validity, congruent validity and factorial validity were determined. The validities were between 0.757 to 0.971.
★ Research Findings:
1. The result of the study indicates that sex seems to have no role in determining one’s creative thinking.
2. The result of the study indicates that area seems to have no role in determining one’s creative thinking.
3. The result of the study shows that the mean scores on creative thinking of students belonging to different grade were significant at 0.01 level of confidence.
4. The result of the study shows that the mean scores on creative thinking of students belonging to different age were significant at 0.01 level of confidence.
5. The result of the study indicates that the IQ does not effect to creative thinking of student.

Study 2
★ Name: H.R.Bankers
★ Title: Construction and Standardization of Abstract Reasoning Test for the students in Grades VIII and IX of Secondary School of Saurashtra.
★ University: Saurashtra University, Gujarat
★ Year: 1981
★ Objectives:
Following objectives were set for research:
1. To construct and standardize the Abstract Reasoning test for the students in grades VIII and IX of secondary schools of Saurashtra.
2. To establish norms of the Abstract Reasoning test for the students in grade VIII and IX of secondary school of Saurashtra.
★ Sample:
The sample in the study consisted of 5277 school students of grade VIII and IX of different schools of Saurashtra, Gujarat.
Test and Statistic:
The reliabilities of the test were found by Test-Retest method, Split-Half method, K-R formula and Rulon Method. The reliabilities were between 0.81 and 0.95. Concurrent validity, congruent validity and predictive validity were determined. The validities were between 0.63 to 0.84.

Research Findings:
1. The result of the study shows that the mean scores on Abstract Reasoning of students belonging to different area were not significant.
2. The result of the study shows that the mean scores on Abstract Reasoning of students belonging to different sex were not significant.
3. The result of the study shows that the mean scores on Abstract Reasoning of students belonging to different area were not significant.

Study 3
Name: Buranapatana Maliwan
Title: Enhancing Critical Thinking of Undergraduate Thai Students through Dialogic Inquiry.
University: The University of Caberra, Australia (Ph.D.)
Year: March 2006
Objectives:
The objectives of this study were:
1. To investigate the concept of critical thinking in general literacy.
2. To find an alternative model which can be effectively used in enhancing critical thinking.

Research Questions:
1. What are the effect (if any) of the dialogic inquiry model of teaching and learning critical thinking for undergraduate Thai students in a Thai Context?
2. If the dialogical inquiry model is effective, what features of the dialogical inquiry model students identify as promoting critical thinking?
3. How can the dialogic inquiry model be applied more widely in a Thai education system?

★ Research Method:

Research plan and methods were to create a new model which can be used effectively in the teaching of critical thinking in a Thai context. The dialogic inquiry model was developed, based on the definition of critical thinking. Testing of the model was carried out with a single case study, the researcher was the teacher of the group and four teachers functions as a support team for the participating students.

★ Tools for data collection:

In accordance with the multi-method procedure, six tools were used for data collection. The first three tools were considered primary evidence tools which were part of teaching and learning process, while the second three tools comprised secondary data.

Primary Evidence Tools
1. Students’ co-construction articles on the web site
2. Video-recorded classroom discussions
3. Feedback from various viewers

Secondary Evidence Tools
4. Students’ self reports
5. In-depth interviews
6. Open-ended and follow-up questionnaires

★ Data Analysis:

Data analysis was done by analyzing changes in the student’s writing which were congruent with the concept of critical thinking adopted in the study. Analysis of student’s articles was done into three stages: month 1, month 2 and month 3. Sources of information, questions raised in the co-constructed articles, analysis of information and reasoned argument were set as the criteria of analysis.
★ Research Findings:

Findings of the research were as follows:

1. It showed that the methodology was very different to other ways of thinking about and teaching critical thinking.

2. It concluded that the condition of enabling and enhancing students' participation in social fields of engagement cannot allow for a separation of the learning process from those fields.

3. It showed that dialogic learning did happen as, with time, students produced articles for the Thai News Network website which showed an increasingly greater engagement on their part in the stories they reached, thus exploring and identifying a multitude of conflicting views on issue of their interest.

4. Classroom discussions also showed that in the last month of the course the quantity of students' questions increased dramatically.

5. 80% of students expressed that they liked their classes and enjoy their classroom discussions.

6. Students were not learning in order to perform well in the contest of classroom, but outside classroom, the learning model implied in the Thai News Network project helped them to resolve the long-standing problem of skills transferability.

7. The project did not teach them arbitrarily selected knowledge, but skills which their diverse interactions with the community showed to be of relevance of individual students, helped to increase students' interest in the project.

8. It stated that students worked systematically in those subjects and could think critically, not readily believing everything they read, as they did in the past.

9. Students also reported that it was very important to get information from a wide variety of sources, not only from the library or the Internet in order to better understand the issue that is investigated.

10. It was found that after participating in the Thai News Network project, students had more confidence in asking questions and talking to people from inside and outside of the University.
11. Enthusiasm was still persisting at the end of students' undergraduate studies, those who were interviewed.

**Study 4**

**Name:** D.R. Newmann

**Title:**

*A content analysis method to measure critical thinking in face-to-face and computer supported group learning*

**University:** Queen's University, Belfast, Information Management Department

**Year:** 1994

**Research Questions:**

1. To what extent does computer conferencing clarify course objectives and make relevant personal experience?

2. Does computer conferencing have the capacity to help the student to develop new ideas and solutions, understand issues including those contained within study texts?

3. To what extent does computer conferencing help the student to understand by applying course content to his or her own life situation?

**Analytical Method:**

Newmann prepared transcripts of tape-recorded seminars and automatically stored transcripts of computer conferences, as part of a controlled experiment in which student groups carried out half their seminars using each technique. Rather than classify every statement in a transcript he mark and count the obvious examples and ignore the intermediate shades of grey. This makes the task of the evaluators easy, since there is less need for delicate, subjective, average judgments.

**Result of the Analysis:**

1. Initial analysis of first semester's experiment showed that these ratios for face-to-face and computer conferencing seminars were similar, showing critical thinking in both. There were remarkably more positive ratios in computer conferences for important statements and linking ideas, and slightly less for novelty.
2. A possible explanation for the lack of new ideas is that the asynchronous computer conferencing environment discouraged students from contributing novel, creative ideas but rather encouraged considered, thought out contributions. The slightly more positive ratios for outside knowledge and justification are consistent with this: a statement of opinion in a face-to-face discussion becomes an evidentially justified point in a computer conference message.

3. In a face-to-face seminar, students would have to remember earlier points after the discussion has moved on.

4. The Telepathy computer conferencing environment appears to have hindered the earlier exploratory and creative stages of problem-solving critical thinking process, but helped the later evaluation and integration stages. This has clear educational implications. It has led to a search for different face-to-face and computer-supported techniques to support creative ideas generation, while explicitly setting evaluation and integration tasks to be carried out using the computer conferencing system.

Study 5
★ Name: Jennifer H. Reed
★ Title:
Effect of a model for Critical Thinking on student achievement in primary source document analysis and interpretation, argumentative reasoning, critical thinking disposition and history content in a community college history course.
★ University: College of Education, University of South Florida (Ph.D.)
★ Year: 1998
★ Objectives:
1. To study the effect of integrating Richard Paul's model for critical thinking into a U.S. history course on community college students' (i) abilities to think critically about U.S. history and about everyday issues, (ii) dispositions toward thinking critically and (iii) knowledge of history content.
2. To examine if age (under 22, 22 and older) or gender moderated the effectiveness of the instructional method.

★ Research Questions:

Research Questions were framed as follows:

1. Will a group of community college history students who receive explicit training in analyzing and interpreting historical documents according to Paul's critical thinking model perform better on a test that requires them to analyze and synthesize a set of primary sources than a group of similar students not receiving explicit instruction in critical thinking?

2. Will a group of community college history students who receive training in Paul's critical thinking model perform better on a task requiring evaluation of arguments on a contemporary issue than a group of similar students not receiving explicit instruction in critical thinking?

3. Will a group of community college history students who receive training in Paul's model for critical thinking differ in their attitudes and dispositions toward critical thinking from a group of similar students not receiving explicit instruction in critical thinking?

4. Will a group of community college history students who receive training in primary document interpretation according to Paul's critical thinking model perform better on a test of history content knowledge than a group of similar students not receiving explicit instruction in critical thinking?

5. Will there be a statistically significant difference in student performance by method of instruction according to age (under 22, 22 or older)?

6. Will there be a statistically significant difference in student performance by method of instruction according to gender?

★ Tools for Data Collection:

Following tools were used for data collection

1. Document Based Questions (DBQ)
2. The Ennis-Weir Critical Thinking Essay Test
3. The California Critical Thinking Dispositions Inventory
4. Questions from the College Board Achievement Test in American history.

★ Critical Thinking Programme:

Four sections of U.S. History 1877 to the Present participated in this one semester study. Two sections were randomly selected to serve as the experimental group and the other two sections served as the control group. The experimental group (n = 29) received approximately 90 minutes of explicit instruction distributed over the semester in using Paul's model for critical thinking to analyze and interpret primary source documents. In addition, the model was integrated into a series of assigned classroom activities. The control group (n = 23) was taught in a more traditional manner.

★ Research Findings:

Findings of the research were

1. There were significant differences between experimental and control groups on post-test scores on the DBQ and the Ennis-Weir.
2. No differences were found on instruments testing critical thinking dispositions or knowledge of history content.
3. No significant differences were found by method of instruction according to age or gender.
4. Results from interviews with nine students were also presented and indicated that some students in the experimental group found using Paul's model somewhat difficult at first.
5. Experimental group students were better at providing a definition of critical thinking, and they were able to think of more uses for their skills in the real world than students in the control group.

Study 6

★ Name: Dr. Mira Feuerstein

★ Title:

The development of critical thinking in teaching-learning among pre-service communications teachers

★ University: Liverpool University of Israel
★ Year: 2001-02

★ Objectives:

1. To examine the critical thinking abilities of pre-service teachers in the media context (printed and televised), following participation in an integrative program of thinking and media.
2. To identify the theoretical and practical components of the curriculum in communications and its contribution to promoting students' critical thinking.
3. To identify components of students' preliminary knowledge (attitudes and dispositions) about thinking, about the media and implications for their learning and thinking.

★ Research Design:

The following research design was used:

1. Open pre-post questionnaires - to examine students' CT (Critical Thinking) abilities toward a newspaper article and their preliminary knowledge about the media.
2. Personal interviews with a number of students - to evaluate students' thinking processes and dispositions about the thinking, about the media.
3. Class discourse analysis after watching a TV program - to obtain students' reflective thinking after experiencing the program, with reference to their social-cultural context.
4. Analysis of lesson documented in each course - to create insight into the theoretical and practical components of the media program as a teaching-learning environment.

★ Research Findings:

All the students have shown a new and more critical approach to the media. Among those whose experienced more systematic learning which infused the teaching of thinking with the media, this trend was more significant than among the second group. The first group also marked higher levels of 'metacognitive knowledge' about the learning process they experienced. This is knowledge that students have about for thinking, which allows them to assess their own thinking processes according to criteria they have acquired. This could be seen in their attitudes and dispositions about communications texts, their doubt and their tendency to raise questions that distinguish
between opinion and fact, and clear statements that indicate critical awareness of manipulations by the media.

Due to unavailability of required number of Ph.D. thesis, research paper related with critical thinking, the investigator has reviewed the research articles also which are as follows:

3.5 REVIEW OF RESEARCH PAPER AND ARTICLES ON CRITICAL THINKING:

Research Paper
★ Name: Gokhale Anuradha A.
★ Title: Collaborative Learning Enhances Critical Thinking
This research paper was taken from the journal of technology education (vol.7, Number 1, Fall, 1995).
★ Objectives:
To examine the effectiveness of individual learning versus collaborative learning in enhancing drill-and-practice skills and critical thinking skills.
★ Research Questions:
Research questions examined in this study were:
1. Will there be a significant difference in achievement on a test comprised of “drill and practice” items between students learning individually and students learning collaboratively?
2. Will there be a significant difference in achievement on a test comprised of “critical thinking” items between students learning individually and students learning collaboratively?
★ Research Method:
A non-equivalent group design was used in this study. Pre-test and Post-test were administered on the students.
Tools for the Data Collection:

Investigator designed pre-test and post-test to measure student understanding of series and parallel DC circuits and hence belonged to the cognitive domain.

Data Analysis:

t-test, analysis of variance (ANOVA) procedure and correlation statistics were used for data analysis.

Research Findings:

Findings of research were as follows:

1. Research question 1: The mean of the post test scores for the participants in the group that studied collaboratively was slightly higher than the group that studied individually. A t-test on the data did not show a significant difference between the groups.

2. Research question 2: The mean of the post test scores for the participants in the group that studied collaboratively was slightly higher than the group that studied individually. t-test on the data showed that this difference was significant at the 0.01 alpha levels.

Article 1

Name: Fitzgerald, Mary Ann

Title:

Critical Thinking: The Basics of Evaluating Information

The purpose of this article is to present strategies and recommend ways to infuse evaluative skills—some of the most key aspects of the critical thinking process—into the curriculum. Students may know how to access and locate, interpret and apply information. However, if they do not invest any time in evaluating the information they use, their efforts often result in a low-quality product. Worse, failure to evaluate may result in unfavorable outcomes due to bad decision making based on imperfect information.
Unfortunately, evaluating information is not a simple task and experience with children and adolescents should convince any educator that simply directing a fifth-grader to evaluate a newspaper article is not an effective teaching strategy. Most young students are unable to verbalize what evaluation means or describe how it should be carried out. They know few concrete strategies with which they can start evaluating information. The article recommends that students be involved in information inquiry projects from an early age as often as possible. Topics for information projects should come from across the curriculum, with some kind of relationship to the interest and curiosity of the individual student. Students should understand that evaluation is difficult and that it is often not possible to be certain of the correctness of a judgment. While this continuous uncertainty may feel uncomfortable to young students, it is a necessary part of intellectual development. Checklists that outline the evaluation process can be useful in teaching children this important skill.

Article 2
★ Name: Dr. Mira Feuerstein
★ Title:

*Media Literacy in support of Critical Thinking*

This research study was conducted as part of a doctoral dissertation submitted to the University of Liverpool and the aim of this study was to examine critical thinking (CT) abilities about the media—the level of CML (Critical Media Literacy) among elementary school pupils (aged 10-12) in Israel. It was tested through their systematic exposure to a media program based on the critical inquiry approach of the BFI model (Bazalgette, 1989). It encourages learners to engage in constant investigation of media texts taken from their daily socio-cultural environment through doubtful questions. In this sense, the model concepts follow the purpose and main notions of CT education: to equip learners with the power to reflect and to probe through doubtful questioning and to develop thinking skills for deliberating about reason and truth behind events in daily life. CT and ML (Media Literacy) are anchored in the ideas of education for democratic values, the freedom to think and criticize the reality and society in which we live, by
virtue of our being self-ruling individuals in a democratic society (Yuval, 1985). In this sense, learning facts about the media – a dominant institution in our society – is intertwined with thinking. Learners are given the opportunity to think deeply about problems in a particular area, (the media) from a familiarity with it and to apply logical patterns in dealing with problems that arise. The contribution and originality of this study lie in its clarification and sharpening of the CT perspective in the media context and its attention to a question that has not yet been studied sufficiently evaluating the CT skills of children in the higher grades of primary school. It also facilitates understanding of the interrelationship between learners’ social contexts and the level of critical discourse and in this specific case, in the context of television and advertisement texts.

★ Research Methodology:

Evaluation in this study entailed the use of a holistic approach to reflect the interrelationship between CT and ML through the CML skills of 273 pupils from six primary schools. The research study combined quantitative and qualitative methods.

Two media tests previously employed by Quin & McMahon (1993) were analyzed statistically to explain the effects of diverse variables (types participating in the program, gender, socioeconomic level, age, origin – born in Israel /Russian immigrants) and their interrelationships with pupils’ CT toward popular television series and advertisements from the press. By using three reflexive qualitative methods – class observation of media lessons, teacher interviews and focus group interviews with pupils – it was possible to obtain participants’ thinking and interpretation of the media in different social contexts in class and with their peers. From the data gathered from personal interviews with teachers and from observations of media classes, it was possible to learn about the contribution of the ML.E key concepts and its special learning environment characteristics to promoting pupils’ thinking abilities.

★ Research Findings:

1. It was found that systematic learning of CML supports pupils’ CT about TV series and newspaper advertisements.
2. It also showed that there is a tendency to transfer such learning even some time after the program has ended.

3. It was found that the program especially advanced the CT abilities of pupils rated as low and medium school achievers and of those coming from a low-medium socio-economic level.

Article 3

★ Name: Tsui Lisa
★ Title:

Effect of Campus Culture on Students’ Critical Thinking

This study examines how campus culture is related to the development of students’ abilities to think critically. Such skills as making correct inferences, evaluating evidence, recognizing relationships, identifying assumptions, and independent thinking were elements of critical thinking examined. Data was gathered from students at four institutions. The qualitative data included interviews with students about their perceptions of the campus culture and their own critical thinking skills since entering into college. The study found that three elements are influential in promoting a campus culture conducive to critical thinking: the nature of an institution's epistemological orientation, its ability to implant responsibility and self-reflection in students and fostering social and political awareness in them.

3.6 DISTINGUISH FEATURES OF THE PRESENT STUDY:

Investigator has reviewed six related past researches, one research paper and three articles. In which, one research is from S.P. University, one is from Saurashtra University while other researches from foreign countries. After studying and reviewing the past researches the following distinguishing features were considered and included in the present research.

1. Most of the past researches were done for either college students or child of grade 4 to 5 except the researches of Sunisa Kanchanajan and H. R. Bankers. Sunisa Kanchanajan standardized test for students of grade VII to IX while H.R. Bankers
Standardized test for grade VIII and IX. In the present study the investigator has tried to standardized critical thinking test for students of grade VIII, IX and X.

2. In this present study the content matter were selected from both- inside and outside of their textbook content. While the content matter selected by the past researcher was either the part of text book or beyond the text book.

3. Sample selected for present study covers all district of Gujarat State while in other researches sample was selected from some districts or regions of Gujarat state or other state.

3.7 SUMMARY:

Thus the review of related researches and distinguish features of present study were discussed in this present chapter. The review of related researches was proved very helpful to investigator. Keeping in mind the above discussion, the procedure for selection of sample, preparation of tool, techniques of research and method of analysis have been followed. The insight obtained from this review assisted the investigator to identify the problem and the methodology of research.

All the above points have been considered to specify the outline of research. The same has been discussed in the next chapter.