REVIEW OF RELATED LITERATURE

The need and importance of related studies and literature have been highlighted by best who says that “practically all human knowledge can be found in books and libraries.

According to Dewey, the review of related studies is said to be 3rd step of scientific method. These studies help to avoid the risk of duplication. It helps the investigation to see whatever the evidence already available shows the problem adequately without further investigation and thus to avoid the risk of duplication. Every investigator is expected to know what sources are available in his field of enquiry. Which of them he/she is teaching to use and find them.

The investigator studied various educational journals books, articles and research studies published in India and abroad related to this study.

Good, Barr and Scates highlighted the importance of related literature.

- To provide ideas, theories, explanations or hypothesis valuable in formulating the problem.
- To suggest methods of research appropriate to the problem.
- To avoid the risk of duplicating the save study already undertaken.
- To locate comparative data useful in the interpretations of results.
- To contribute to the general scholarship of the investigator.
In the words of Good the key to the vast store house of published literature may open door to sources of significant problem and exploratory hypothesis and provide helpful orientations for definitions of the problem background for sections of procedures 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 thinking.

2.1. Reviews of Research conducted in India and Abroad:

An attempt had been made here to review the related researches conducted in India and Abroad.

2.2. Studies in India

Jeyamani P. (1991) studied on “Effectiveness of the simulation model of teaching through Computer Assisted Instruction (CAI)”. The objectives of the study were (i) To find the effectiveness of the simulation model of teaching as compared to the traditional method (ii) To utilize the growing use of computer in education. The findings of the study were (i) The experimental group obtained a higher mean than the control group. (ii) The sex wise comparison provides to be insignificant. (iii) There was no significant difference in learning level between Tamil medium and English medium students.(iv) On the basis of the research findings it was concluded that the experimental group performed significantly better than the control group.

Instruction (CAI) and Conventional method of instruction”. The Objectives of the study were (i) To study the difference in mathematics achievement which occurs as a result of the difference in instructional strategy among boys and girls separately and as a group. (ii) To study the direction of change in attitudes of male and female students separately and as a group towards mathematics as a result of two different instructional strategies. The findings of the study were (i) The students who used the computer scored significantly higher than those taught mathematics through the conventional method. (ii) The students who used the computer showed significantly highly favorable attitude towards mathematics than those who did not use the computer (iii) Achievement in mathematics and change in attitude towards mathematics were found to be independent of the sex factor.

Rose, A.V. (1992) studied on “Effectiveness of the Computer Assisted Instruction with special reference to underachievers”. The objectives of the study were (i) To develop CAI software (ii) To find out the effectiveness of CAI with TSS and CAI with reference to the learner variable viz. sex, locale, IQ and achievement level and (iii) To find out the interaction of the learner variables and the treatment on the achievement score. The findings of the study were (i) Both the CAI strategies were superior to the traditional method of instruction and CAI with TSS was more effective than CAI without TSS for underachievers (UA). (ii) Except achievement level, all the other learner variables
combined with the treatment had no interaction effect on the achievement score. (iii) There was no relationship between the post treatment scores and the variable ‘sex’, ‘locale’ and ‘achievement level’ of the experimental group. In the case of the variables IQ, study habits and Maths study attitude, the positive relationship between those variable and achievement at the pre treatment level was found to be cancelled at the post test.

Singh R.D. (1992) reviewed on “Effectiveness of teaching Mathematics through Computer Assisted Instruction and conventional method of instruction on cognitive and non cognitive variables”. Singh has discussed the relative merits of teaching Mathematics through Computer Assisted Instruction and conventional method of teaching. Computer Assisted Instruction was always found superior, but the gains were more in the case of good students and there was a definite positive change of attitude towards learning Mathematics on the part of both boys and girls due to the use of computers.

Joshi C.L. (1992) studied on “The construction and try out of networks for some topics of physics for standard XII Science stream”. The Objectives of the study were (i) To increase the level of understanding of the pupil of higher secondary classes of standard XII science stream in the different topics of ‘Physics’ which are to be taught by using ‘network’ diagrams. (ii) To evaluate the effectiveness of the teaching using network diagrams compared to the teaching through the
traditional method. The findings of the study were (i) From the results obtained there is a significant difference on mean achievement post test scores of pupils belonging to group A and group B. (ii) There is no significant difference on mean of post test scores of pupils of high achievers of group A and high achievers of group B. (iii) No significant difference on mean post test scores of pupils belonging to the high achievers of group A and pupils belonging to low achievers of group B. (iv) Significant difference is obtained on mean post test scores of pupils belonging to the high achievers of group B and pupils belonging to the low achievers of group A.

Prabhakar, S., Ph.D. (Edu.), Devi Ahilya Vishawvidyalaya,(1995) studied on “Development of Software for Computer Aided Instruction and its Comparison with Traditional Method for Teaching Physics at Plus II level”. The objectives of the study were (1) To develop computer software for computer aided instruction for teaching selected topics in physics, namely, ‘semiconductors’, ‘PN Junctions’ and ‘Electro-Magnetic Induction’. (2) To study the effectiveness of CAI material in terms of achievement and reaction towards CAI material. (3) To compare the achievement of (a) class XII students taught through CAI with those taught through traditional method, (b) class XII students with those of class XI students both taught through CAI, and (c) male students with female students of class XI taught through CAI by considering intelligence, pretest, attitude towards science, adjustment, personality
and study habits separately as covariates. (4) To compare the reaction towards CAI material (a) of class XII students with those of class XI students both taught through CAI, (b) of male students with those female students of XI both taught through CAI, and (c) of male students with those of female students of class XII both taught through CAI by considering intelligence, achievement, attitude towards science, adjustment, personality and study habits separately as covariates. (5) To study the effect of treatment, adjustment with its various dimension and interaction on achievement separately. (6) To study the effect of treatment, attitude towards science and their interaction on achievement. (7) To study the effect of treatment, study habits and their interaction on achievement. The findings of the study were (1) The CAI material was found to be effective in terms of achievement and reaction towards CAI material of both class XI and XII students. (2) The CAI was found to be significantly superior to traditional method in terms of achievement of class XII students when moderate variables were considered as covariates separately. (3) The class XII students achieved significantly higher than class XI students both taught through CAI when moderate variables were taken as covariates separately. (4) CAI was found to be equally beneficial to both males and females of class XI in terms of achievement when moderate variables were considered as covariates separately. (5) CAI was found to be equally beneficial to both males and females of class XII in terms of achievement when moderate variables were considered as covariates
separately. (6) Class XI students were found to have significantly more favorable reaction towards CAI material than class XII students when moderate variables were considered as covariates separately. (7) Class XI and class XII males as well as females were found to have equally favorable reaction towards CAI material when moderate variables were considered as covariates separately. (8) The CAI was found to be significantly superior to traditional method in terms of achievement of students. (9) The achievement was found to be independent of personality as well as interaction between treatment and personality. (10) The achievement was found to be independent of personality, adjustment, emotional adjustment, social adjustment, educational adjustment, attitude towards science, and their interaction with treatment separately. The CAI was found to benefit both students with poor as well as good educational adjustment. (11) The study habits as well as interaction between treatment and study habits were not found to influence significantly the achievement of students.

Phoolwala R.N. (1997) studied on “An inquiry into the utility and effectiveness of microcomputers in teaching science for standard X”. The objectives of the study were (i) To know the utility of microcomputer for self learning on the unit ‘Carbonic Compounds’ of Science subject of standard X. (ii) To check the effectiveness of the used microcomputer for the selected unit. (iii) To study the effectiveness of teaching science through microcomputer and traditional method of teaching. (iv) To know
the opinion of the students towards science teaching through microcomputer. The findings of the study were (i) The difference between the mean scores of pre test and post test of experimental group was significant. So it can be said that students can learn effectively through microcomputers. (ii) Students can learn science effectively through microcomputer than through traditional method. (iii) The students revealed highly favorable opinion towards science teaching through microcomputers.

Khirwadker, A. (1998) in his study on “Development of Computer Software for learning chemistry of standard XI”. The objectives of the study were (i) To develop CAI package in subject of chemistry for standard XI Science students, studying GSTB syllabus. (ii) To study the effectiveness of the software package in terms of instructional time and achievement of student. (iii) To study the effect of the software package on student achievement in relation to student (a) intelligent level (b) motivations level and (c) attitude towards the package. (iv) To study the attitude of the student and teacher regarding the effectiveness of the CAI package with regard to aspects of the software such as content of the software, presentation of the software, examples and illustrations, graphs and figures, evaluation items, Utility of the software and instruction given in the instructional manual that are provided with the software. The findings of the study were It was found that the software package developed for teaching three units of standard XI Chemistry
textbook of GSTB was effective in terms of students’ achievement. Also CAI was found to be time effective. The experimental group took 45 hour time in average to complete the three units of Chemistry. Later on the academic achievement of student of experimental group was found to be affected by variables like IQ, academic motivation and attitudes and lastly, majority of experimental group students had positive attitude about various aspects of software package especially regarding presentation of content logical sequencing and language used for understanding the content. The school subject teacher always held the positive attitude.

Nalayini, S (1998) studied on “Development and Validation of Computer Assisted Instruction in Physics For High School Students”. The objectives of the study were (1) To develop suitable software on the selected topic “Electricity” for class IX and validate it. (2) To study the effect of computer assisted instruction on learning the concepts in the topic “Electricity” in physics. (3) To analyze the variation among the students in the acquisition of various cognitive skills by learning through computer assisted instruction. (4) To study the relationship between achievements in physics learnt through computer assisted instruction and intelligence of the students. (5) To find out the relation between students’ attitude towards science and their achievement in learning through computer assisted instruction. The findings of the study were (1) The achievement in the posttest of the experimental group is higher as
compared to control group. (2) The experimental group differs significantly when compared to control group. Hence learning through computers helped in achieving better than the control group. (3) There is significant difference in the achievement of the students who learnt through computer assisted instruction that the achievement of the students learnt through traditional method. (4) The attainment of the cognitive factor “Application and skill” is lower for the students who learn through traditional method when compared to the students who learn through computer. (5) For the students’ understanding of the units nature of changes (unit 1) and electric potential (unit 2) are found to be difficult when they learn through traditional method, but it has been found that students found it easier when they learn the same concept through computer. (6) There is no significant relationship between achievements of students learning through computer assisted instruction and their intelligence. (7) There is no significant difference between the attitude towards science that learns through computer assisted instruction and through traditional method.

Das A. (1998) reviewed on “Exploring effectiveness of Computer Assisted Learning Materials on Rhymes in different Modes”. The objectives of the study were (i) To develop computer software on rhymes in text, text music, Graphics text, Graphic text music and graphics text music recitation modes. (ii) To study the effectiveness of CALM prepared in different modes for learning the rhymes in terms of
word meaning of the students. (iii) To study the effectiveness of CALM prepared in different modes for learning the rhymes in terms of analytical understanding of the students. (iv) To study the effectiveness of CALM prepared in different modes for learning the rhymes in terms of comprehensive understanding of the students. (v) To study the effectiveness of CALM prepared in different modes for learning the rhymes in terms of writing ability of the students. (vi) To study the effectiveness of CALM prepared in different modes for learning the rhymes in terms of recitation ability of the students. The findings of the study were Graphics text mode has been found comparatively weaker than the other modes in learning word meaning on rhymes in different modes. The one of the seven rhymes text mode has been found most effective in developing language ability. In the same rhymes, Graphics text music and graphics text mode in developing language abilities of the pupils has been used. In five out of seven rhymes no significant difference has been found in different modes for developing language ability of the pupils. In three out of seven rhymes text mode largely has been found comparatively weaker than other modes for comprehensive understanding, where as in one rhymes text mode has been found most effective for comprehensive understanding.

Kadhiravan, S. (1999) studied on “Effectiveness of Computer Assisted Instruction in relation to students use of Self-regulated Learning Strategies”. The objectives of the study wer: (i) To find out whether there
is any difference among the three instructional strategies viz. Lecture Method (LM), Computer Assisted Instruction (CAI) as individualized strategy and Computer Assisted Instruction with peer interaction (CAIPI) in terms of their effectiveness in improving the performance in physics among the higher secondary student with different level of cognition, viz. knowledge, application and understanding. (ii) To develop syllabus based computer software package for the selected units in physics at higher secondary level. (iii) To evaluate the developed computer software from technical and pedagogical points of view. (iv) To find out whether there is any difference among different instructional strategy and Computer Assisted Instruction with peer Interaction in terms of their effectiveness in enhancing the retention as revealed by the learners’ performance in the retention test. (v) To construct criterion referenced test (CRT) based on the content areas taught through different instructional strategies in the present study. (vi) To develop a tool to measure the students’ use of Self Regulated Learning (SRL) strategies. (vii) To find out whether there exists any relationship between the students’ performance in physics as measured by the post test and their use in self regulated learning strategies. The findings of the study were (i) Among the instructional strategies, viz. LM, CAI and CAIPI, CAIPI was the most effective instructional strategy in terms of realizing the instructional objectives in physics at higher secondary stage. (ii) Among the three instructional strategies, CAIPI is the most effective one in terms of its effectiveness in realizing the instructional objectives in the
context of content with low difficulty level. (iii) There was a significant difference among different instructional strategies, viz. LM, CAI and CAIPI in enhancing the students’ use of SRL strategies. (iv) CAI and CAIPI had some influence on students’ use of SRL strategies while lecture method had not. (v) There was significant difference among the instructional strategies viz. LM, CAI and CAIPI in terms of their effectiveness in enhancing the retention of what was already learnt in physics. (vi) There was a differential effect on the cognitive development of the students in physics due to their use of self-regulated learning strategies.

Zyoud, M. (1999) studied on “Development of Computer Assisted English Language Teaching for VIII standard students”. The objectives of the study were (i) To develop a Computer Assisted English language teaching program for standard VIII Gujarati medium students. (ii) To study the effectiveness of the Computer Assisted English language teaching program on students achievement in terms of Vocabulary grammar and comprehension by taking pre test and IQ covariate. (iii) To study the effectiveness of the Computer Assisted English language teaching program on the experimental group students’ achievement of all above mentioned with respect to their intelligence, motivation and attitude. The findings of the study were the findings show that when the computer is used to its full potential it can create an atmosphere where the students can learn and interact with the computer without being
afraid of the teacher’s presence. The computerized exercise can help the student become familiar with significant amount of vocabulary, grammar and comprehension because it provides effective individualized instruction.

Meera, S. (2000) studied on “Relative Effectiveness among Different Modes of Computer-based Instruction in relation to Students' Personality Traits”. The objectives of the study were (1) To find out whether there is any significant difference between the Conventional Lecture Method and the Computer Assisted Instruction (CAI) as an individualized Instructional strategy in terms of their effectiveness in realizing the instructional objectives in Biology at Class XI; (2) to find out significant difference among the different modes of Computer-based Instruction viz. Tutorial, Drill & Practice and Simulation in realizing the instructional objectiveness in Biology at Class XI; (3) to find out whether there is any significant difference among the different modes of Computer-based Instruction (CBI), viz. Tutorial, Drill and Practice and Simulation in terms of their effectiveness in enhancing the retention of cognition as revealed by the learners’ performance in the retention test; (4) to develop syllabus based CAI package; (5) to assess the personality of the subjects of the control and experimental groups using Cattell’s 16 P.F Inventory with a view to study whether it has any influence on the media effectiveness in realizing the instructional objectives. The findings of the study were (1) Different modes of
Computer based Instruction, viz. Drill, Practice and Simulation were more effective than conventional lecture method in realizing the instructional objectives in Biology at Class XI. (2) Effectiveness of the conventional lecture method and the different modes of the Computer-based Instruction, viz. Tutorial, Drill and Practice and Simulation were not influenced by the learner’s personality. (3) There was significant difference among the different modes of CBI (Computer-based Instruction), viz. Tutorial, Drill and Practice and Simulation in terms of their effectiveness in enhancing the retention of cognition as revealed by the learner’s performance in the retention test. There was significant difference among the different modes of Computer-based Instruction in enhancing retention of what have already learnt.

Khirwadkar, A., (2001) conducted a study on “Development of Computer Software for Learning Chemistry at Standard XI”. The objectives of the study were (1) To develop CAI package in subject of chemistry for standard XI science students studying GSTB syllabus. (2) To study the effectiveness of the software package in terms of instructional time and achievement of student. (3) To study the effect of the software package on students’ achievement in relation to students’ (a) intelligence level, (b) motivations level, and (c) attitude towards the package. (4) To study the attitude of the students and teachers regarding the effectiveness of the CAI package with regard to aspects of the software, such as, content of the software, presentation of the software, examples and
illustrations, graphs and figures, evaluation items, utility at the software and instructions given in the instructional manual that are provided with the software. The findings of the study were (1) The software package developed for teaching three units of standard XI chemistry textbook of GSTB was effective in terms of student’s achievement and time. (2) The experimental group took 45 hours time on an average to complete the three units. (3) The academic achievement in chemistry of students of experimental group was found to be affected by variables like IQ, academic motivation and attitudes. (4) Majority of experimental group students had positive attitude about various aspects of software package especially regarding presentation of content, logical sequencing and language used for understanding the content. The school subject teachers always held the positive attitude.

Karia., L. H. (2001) studied on “Effectiveness of Computer-Aided Learning (CAL) Programme As Self-study Technique”. The objectives of the study were (1) To develop Programmed learning material and computer aided learning programme for the unit ‘Set Theory’ (Gujarati) in mathematics of standard VIII. (2) To develop lesson planning for the unit ‘Set Theory’ (Gujarati) in mathematics of standard VIII for conventional method of instruction (3) To study the effectiveness of Computer Aided Learning (CAL) programme with relation to programmed learning and traditional teaching. The findings of the study were: (1) Traditional method of teaching and Computer Aided Learning
programme were equally effective for boys. (2) For girls traditional method of teaching proved more effective than CAL programme. (3) Programmed learning material and CAL programme were equally effective for both the boys and girls.

Ansari, Intekhab. K. (2002) studied on “A study of the computer Education in the South Gujarat Region”, Veer Narmad South Gujarat University, Vol.7, No. 1 & 2, January and July 2007 (PP.40). The principals were dissatisfied with the present were dissatisfied with the present situation of the computer education; Enough equipments were not available to facilitate individual practical’s; less time was available for computer education with reference to private classes; The no. of students taking computer education was more compared to the available computers for the purpose.

Joy, B.H.H. and Manickam, L.S.S. (2002) conducted a study on "Computer Assisted Instruction: Attitude of Teachers and correlates". The objectives of the study were (i) To assess the knowledge in computer, attitude to computer Assisted Instruction and teacher competency of Science teacher and (ii) To assess the effect of training on these variables. The findings of the study were (i) There was no significant difference on the teacher competency in the pre and post scores or between the experimental and control group. But teacher competency was positively related to post knowledge in CAI of the experimental group. (ii) There was a significant difference between the
groups in their attitude towards computer education. As a result of training in Computer Assisted Instruction (CAI), the attitude of the experimental group became more favorable towards computer education. (iii) There was correlation between age and attitude towards use of computer. (iv) There was significant difference in the pre and post scores of the experimental group on knowledge in CAI and attitude towards use of computer.

Vij, Sanjana. (2003) studied on "A comparative study of the Effectiveness of Computer Assisted Instruction (CAI) and Computer Managed Instruction (CMI) on Pupil's Achievement in Science, their Self-Concept and Study Involvement". The objectives of the study were (1) To design and develop instructional plan for Teaching selected unit in Science amongst the prescribed course of study at class VII stage based on Computer Aided Instructions (CAI) & Computer Managed Instructions (CMI). (2) To construct and standardize Achievement test in selected units of Science for class VII. (3) To study individual Effectiveness of CAI on Self-concept; study involvement; and Academic Achievement. (4) To study individual effectiveness of CMI on Self-concept; study involvement; and Academic Achievement. (5) To compare the effectiveness of CAI and CMI instructions on Self-concept of students. (6) To compare the effectiveness of CAI and CMI instructions on study involvement of students. (7) To compare the effectiveness of CAI and CMI instructions on Academic Achievement of
students. The findings of the study were (1) At the end of the experiment, it was found that the group of Pupils taught Science through Computer Assisted Instructions was effective in raising the Self-concept of the Pupils. (2) The posttest mean scores of the Pupils taught Science through Computer Assisted Instructions increased significantly which indicates that Computer Assisted Instructions enhanced study involvement of the Pupils. (3) The group of Pupils taught Science through Computer Assisted Instructions showed significantly higher posttest mean score on Achievement in Science in comparison to pre-test mean Achievement score. (4) At the completion of experiment, it was found that the group of Pupils taught Science through Computer Managed Instructions was effective in raising the study involvement of the Pupils. (5) The posttest mean score of the Pupils taught Science through Computer Assisted Instructions was found to be significantly higher on increasing the study involvement in comparison to pre-test score. (6) The group of Pupils taught Science through Computer Managed Instructions showed significantly higher posttest mean scores on Achievement in Science in comparison to pre-test score. (7) The group of Pupils taught Science through Computer Managed Instructions achieved significantly higher mean score on the test of Self-concept than the Pupils taught Science through Computer Assisted Instructions. (8) At the posttest mean score of the group of Pupils taught Science through Computer Managed Instructions was significantly higher on the test of Self-concept than the group of Pupils taught Science through
traditional method. (9) There was no significant difference in Self-concept between the group of Pupils taught Science through Computer Assisted Instructions and the group of Pupils taught Science through traditional method. (10) The mean gain score of the group of Pupils taught Science through Computer Managed Instructions was found to be significantly higher on the test of Self-concept, than the group of Pupils taught Science through Computer Assisted Instructions. (11) The group of Pupils taught Science through Computer Managed Instructions showed significantly higher mean gain score on the test of Self-concept than the group of Pupils taught Science through traditional method. (12) There was no significant difference between the group of Pupils taught Science through Computer Assisted Instructions and the group of Pupils taught Science through traditional method on the mean gain score of Self-concept. (13) The posttest mean score of study involvement of the group of Pupils taught Science through Computer Assisted Instructions was significantly higher than the group of Pupils taught Science through Traditional Method. (14) The group of Pupils taught Science through Computer Managed Instructions achieved higher mean score on study involvement than the group of Pupils taught Science through Traditional Method. (15) There was no significant difference in the posttest mean score of study involvement between the group of Pupils taught Science through Computer Managed Instructions and the group of Pupils taught Science through Computer Assisted Instructions. (16) The group of Pupils taught Science through Computer Assisted Instructions showed
significantly higher mean gain score on study involvement than the group of Pupils taught Science through traditional method. (17) The mean gain score on study involvement of the group of Pupils taught Science through Computer Managed Instructions was found to be significantly higher than the group of Pupils taught Science through traditional method. (18) There was no significant difference in the mean gain score of study involvement between the group of Pupils taught Science through Computer Managed Instructions and the group of Pupils taught Science through Computer Assisted Instructions. (19) The posttest Achievement mean score of the group of Pupils taught Science through Computer Managed Instructions was significantly higher than the group of Pupils taught Science through Computer Assisted Instructions. (20) The group of Pupils taught Science through Computer Assisted Instructions showed significantly higher gain in mean Achievement score than the group of Pupils taught Science through traditional method. (21) Group of Pupils taught Science through Computer Managed Instructions achieved significantly higher mean score on Achievement than the group of Pupils taught Science through traditional method. (22) The mean gain score of the group of Pupils taught Science through Computer Managed Instructions was found to be significantly higher on Achievement than the group of Pupils taught Science through Computer Assisted Instructions. (23) The group of Pupils taught Science through Computer Assisted Instructions showed significantly higher mean gain score on Achievement than the group of
Pupils taught Science through traditional method. The mean gain score of the group of Pupils taught Science through Computer Managed Instructions was found to be significantly higher in Achievement than the group of Pupils taught Science through traditional method.

**Bhutak, H.R. (2004) studied on “Development and Effectiveness of Multimedia Package for Science Subject of Standard 9”**. The objectives of the study were (1) To develop a Multimedia Package for subject science of standard IX. The Multi-media Package was in three parts, (1) Learning by PowerPoint Slide Show, (2) Self study material and (3) Learning by transparencies through Over Head Projector. (2) To study the effectiveness of Multimedia Package with reference to achievement test in science and retention of the material of science. The findings of the study were (1) Multimedia package was more effective in terms of achievement and retention of science for both the groups of girls and the boys separately and jointly. (2) Self-study material was more effective than slide show for girls, while slide show proved more effective than self-study material for boys. (3) Slide show and self-study material were almost equally effective for girls and boys jointly.
Kohli, Madhavi (2005) reviewed on “Efficacy of Computer-assisted, concept-attainment models on students' achievement in environmental science, self-concept and Emotional intelligence”. 1) Computer-assisted model and concept attainment model were found to be effective in improving the achievement lead of students. 2) Learning with computer-assisted model and concept attainment model changes the aptitude and interest of the students. 3) Computer-assisted model and concept attainment model has also been shown to be very effective in enhancing emotional intelligence of the students.

Singh, B. (2005) studied on “Effectiveness of Computer Assisted Instruction for teaching Biology”. The objectives of the study were the study compared the effectiveness of Computer Assisted Instruction (CAI) as compared to lecture method on the topics ‘Tissues and cell. The findings of the study were (i) Both the methods were effective in enhancing the learning about cell and tissues. (ii) While lecture method was more effective than CAI for the teaching cell, CAI was more effective then lecture method for teaching tissues.

Das, I. (2003) studied on “Computer Education in the Secondary Schools of Assam”. The objectives of the study were (i) To assess the attitude of students and teachers towards computer education, infrastructural facilities in the schools and gender disparities in computer science if any, in both Government and private secondary schools of Assam. (ii) To assess the knowledge of the students in computer
science, experiences with computers and also the teachers’ educational background and their experiences with computer and (iii) To find out the differences, if any, between the Assamese medium and English medium students of both the Government and private schools in computer education. The findings of the study were students have a positive attitude and outlook, towards computer education received in their respective schools. Some students have suggested a revamping of the traditional modes of teaching by introducing computers in teaching which they think will make their education more exciting and interesting. (ii) Teachers are confident about their knowledge of the subject, they are not devoid of anxiety. Majority of the students’ teacher recognition the important role that computers play in today’s society. (iii) The English medium student found to display higher level of confidence a sense of competences in their approach to and use of computers than the Assamese medium students. (iv) In spite of funding and all other infrastructural facilities provided by the North Eastern council in a collaborative venture with the Board of Secondary Education, Assam, nothing fruitful or lasting evolved from the course of computer education imparted to the students of government schools. (v) Girls have a positive attitude towards computer as being more users friendly and express less anxiety about the use of computers.
Joy, B.H.H. and Shaiju, S.L. (2004) studied on “Development of Computer Assisted Teaching Material in History at Higher Secondary Level and its effectiveness”. The objectives of the study were (i) To develop Computer Assisted Lesson on the topic - UNO in History at higher secondary level. (ii) To test the effectiveness of the Computer Assisted teaching and lecture method of the lesson on the topic - UNO in History at Higher Secondary level and (iii) To verify the impact of gender, domicile and type of school on the effectiveness of Computer Assisted teaching method. The findings of the study were while both the methods led effective learning, the CAT method was found superior to the lecture method. (ii) It is interesting to note that there is no gender difference in the scores obtained.

Suwana, R. (2004) studied on “Effectiveness of Computer Assisted Instruction for Primary School Students: An Experimental study”. The objectives of the study were (i) To know the effectiveness of Computer Assisted Instruction developed by ONPEC for primary school students to learn English language. (ii) To develop Computer Assisted Instruction for primary student to learn Thai language. (iii) To know the effectiveness of Computer Assisted Instruction in learning Thai language developed by the investigator for primary school students. (iv) To know the relative effectiveness of Computer Assisted Instruction developed by ONPEC and by the investigator. (v) To evaluate the both types of Computer Assisted Instruction on the basis of the collected
opinion of experts and primary school students. (vi) To provide suggestion to ONPEC for improving Computer Assisted Instruction Program on the basis of obtained data. The findings of the study were (i) The study has resulted in the development of Computer Assisted Instructional Program on selected five units of Thai language learning for the students of Pratom-3 and five units of Thai language learning for the students of Pratom-6. (ii) The Computer Assisted Instruction developed by the investigator was found significantly effective in learning five topics of Thai subject to the student of Pratom-3 of experimental group - I belong to Buriram Kindergarten (t- value 8.62) (iii) The Computer Assisted Instruction developed by ONPEC was also found significantly effective in learning five topics of English subject to the students of Pratom - 3 of Experimental group - I belong to Buriram Kindergarten (t- value 8.60). (iv) On comparison of mean gain scores obtained for CAI developed by ONPEC in English language with CAI developed by the investigator in Thai language, the obtained t-value is 1.18 (v) The Computer Assisted Instruction developed by the investigator was found significantly effective in learning five topics of Thai subject to the students of Pratom-6 of experimental group-II belong to Buriram Kindergarten. (vi) It was evaluated by teacher as a successful attempt. (vii) Opinion of students was found effective in presenting all the five topics of English and Thai language.
Dange, J.K. and Wahb, S.A. (2006) studied on “Effectiveness of Computer Assisted Instruction on the Academic achievement of Class IX Student’s Physical Science”. The objectives of the study were (i) To find out the effectiveness of teaching Physics for Class IX through conventional method; (ii) To find out the effectiveness of reaching Physics for Class IX through Computer Assisted Instruction. (iii) To find out the effectiveness of teaching Physics for Class IX through Computer Assisted Instruction package of “Universe”. The findings of the study were (i) There were no significant difference between mean gain scores of experimental and control group of pre post. (ii) There was no significant difference between mean gain scores of pre test and post test of control group. (iii) There was significant difference between mean gain scores of pre test and post test of experimental group. (iv) There was significant difference between mean gain scores of post test of control and experimental group. The study cited 7 references.

Mehra, Vandana (2007) reviewed on “Teacher’s attitude towards computer use. Implications for emerging technology, Implementation in Educational institutions”. The findings revealed that teachers possessed fairly positive attitude towards computer uses but majority of the teachers need to be provided training for using computers in instructional settings.
K.B.S.Jyothi (2007) studied on “Impact of computer-based learning on students of chemistry. Educational tracks”. The study reveals that the self-instructional module prepared by a teacher through simple power point presentation could show immense impact on learning of chemistry. It is often new way and is very much helpful to teachers in their physical science instruction. Students are better motivated and interestingly participated in computer-based learning.

Swami Naidu, N. V. (2007) studied on “Integration of Computer Education in Secondary schools in Visakhapatnam- Attitudes of teachers and students. The main objectives of the study were 1) To find out the extent of integration of computer education in secondary schools of Visakhapatnam as viewed by teachers and students, 2) To find out the attitude of students towards learning computers in schools, 3) To correlate the extent of integration of computer education in schools and the attitude of students towards learning computers, 4) To find out the facilities available and the provisions of integrating computer education in schools, 5) To compare the opinions and attitudes of students and teachers within the light of various backgrounds variable of sex, medium of instruction, type of management , community group, religion, educational qualification of father and mother, stage of schooling, etc. The findings of the study were students and teachers are under the strong opinion that computer education is provided in the schools in the true spirit of Integration of computer education in school curriculum. It is
to be observed that it is not merely providing hands on experience to the students for making aware of various programmes and operations in using computers but in making them to learn computers as a tool and component for further learning and further life skills at the same time through the medium of own curricular subjects. As far as integration of computer education is considered, significant difference is observed in some categories and there is no significant difference between some categories. Data has been collected in terms of students, social status, religion, and parents educational qualification. It is observed that there is no significant difference in the attitudes of students on integration of computer education in secondary schools based on their social status that is their caste, religion, and also both their parents educational qualification from illiterate to graduate and above. In the context of attitudes, students of learning computers, there is a significant difference between telugu and English medium students, among government, private, aided and private un-aided school students, between rural and urban area students, based on their parents educational qualification and there is no significant difference between boys and girls, as per the social status that is caste, religion, availability of computers at home. In terms of attitudes of teachers towards integration of computer education in schools it is observed that there is significant difference between the teachers working in schools offering computer education in their school or not, between rural and urban area teachers, whether received training in computers or not, use of
computers in teaching, having computer lab in school and the number of computers in lab. There is no significant difference among the students studying under various managements that is government, private, aided and private un-aided schools, possession of a computer at home, number of computers available in the school, commencement of instruction at various classes, having a computer lab in schools and the number of computers in their lab, availability of internet connection like dial up of broadband to the school availability of qualified and trained computer teacher and the method of instruction and evaluation in their computer room and the lab, extent of integration of computers in their schools, use of computers in their classrooms, and in offices, span of using the computer.

Hirani, T.R. (2007) studied on “Development and Try-out of Computer Based Multimedia Package for Instruction in Gujarati Language”. The objectives of the study were (1) To develop a Computer Aided Multimedia Package for teaching a unit ‘Light: Reflection and Refraction’ of the subject Science and Technology for standard 10th in secondary school in Gujarati Language. (2) To try-out the effectiveness of the package in the context of the academic achievement of the students. (3) To study students’ reactions towards learning through the package. The findings of the study were (1) The students of Computer Aided Multimedia Package group scored significantly higher on posttest than
the students of traditional method group. (2) Students opined favourably for learning through Computer Aided Multimedia Package.

Mehra, Vandana. (2007) studied on “Teacher’s Attitude towards Computer use Implications for emerging Technology Implementation in Educational Institutions”. The purpose of this study was to determine the attitudes of school teachers of Chandigarh towards use of computer technology for instructional purpose. The objectives of the study were (i) To study the attitudes of high school teachers towards computer use; (ii) To study the perceptions of school teachers with respect to computer attributes, level of computer competences and their access to computers. The findings of the study were the findings revealed the teachers possessed fairly positive attitude towards computer uses but majority of the teachers needs to be provided training for using computers in instructional settings.

Patel, Kinnary (2008) studied on “Computer Assisted Instruction in Physics for the students of standard XI: An Experimental study”. The objectives of the study were (i) To develop Computer Assisted Instruction package on two units of physics for XI Science student studying GSTB syllabus. (ii) To study the effectiveness of the CAI package in terms of achievement of students of experimental group. (iii) To study the relative effectiveness of teaching Physics in terms of two methods of teaching Physics i.e. conventional method of instruction and CAI package for students of traditional group and experimental group.
(iv) To study the relative effectiveness of CAI with reference to the sex of the students of the experimental group. (v) To know the opinions of the students of the experimental group regarding the effectiveness of used CAI in Physics. (vi) To know the opinions of the teachers of the experimental group regarding the effectiveness of used CAI in physics.

The findings of the study were (i) The study has resulted in the development of a CAI program on ‘motion in one dimension and two dimensions’ and ‘Laws of Motion’ for teaching Physics to the students of Class XI. (ii) The package was found significantly effective for the students of class XI of both the groups. (iii) Comparative effectiveness of the CAI method and the traditional method was measured by the experiment and CAI method was found more effective in terms of achievement scores. (iv) In relative effectiveness of the package was equally effective in teaching boys and girls. (v) Students and teachers both revealed a favorable opinion towards CAI program.


The objectives of the study were (1) To develop a Computer Aided English Language Learning (CAiLL) Package to teach action verbs in English language. (2) To develop a Computer Assisted English Language Learning (CAsLL) Package to teach action verbs in English language. (3) To try-out the Computer Aided English Language
Learning Package as compared to the Computer Assisted English Language Learning Package. (4) To compare the relative effectiveness of the Computer Aided English Language Learning Package and the Computer Assisted English Language Learning Package in terms of scores obtained by students on the teacher’s made achievement test. (5) To compare the level of attainment of a group of students that has not received any instruction with the students of Computer Aided English Language Learning (CAiLL) Package group and Computer Assisted (CASLL) English Language Learning Package group. (6) To study students’ reactions towards learning through the Computer Aided English Language Learning Package and the Computer Assisted English Language Learning Package. The findings of the study were (1) CAiLL Package and the CASLL Package each was found effective in raising students’ achievement in unit ‘Action Verbs’ of English grammar. (2) Compared both the Packages with each other the CASLL Package proved to be more effective than the CAiLL Package in terms of the achievement scores of the students of grade VIII for learning ‘Action Verbs’ of English grammar. (3) The CAiLL Package and the CASLL Package were also effective in evoking positive reactions towards the use of them in learning English grammar especially ‘Action Verbs’.

Kalpana Kundu, (2008) in her study on “Development And Implementation Of Computer Aided Instruction Programme For Instruction in Geometry”. The objectives of the study were (1) To
develop a computer aided instruction programme for instructions in geometry. (2) To check the effectiveness of computer aided instruction programme with compared to traditional method. (3) To know the reactions of the students regarding the computer aided instruction programme. The findings of the study were (1) To examine the effectiveness of Computer in teaching geometry, the CAI Package was developed to teach Triangle portion of mathematics to the students of Class X. It was proved effective in terms of the students' academic achievement. (2) The students responded positively towards learning through CAI Package.

**Patel, J. A. (2009) studied on “Development and Implementation of CAI to teach English grammar to standard VIII student in different modes”**. The objectives of the study were (i) To develop the CAI to teach English Grammar to Standard VIII Gujarat Secondary and Higher Secondary Board (GS&HSEB) students in different modes (only CAI, CAI with repetition, CAI with discussion) (ii) To study the effectiveness of the developed CAI in different modes in terms of students’ achievement in English Grammar. (iii) To study the effectiveness of the developed CAI in terms of the reactions of students. (iv) To study the relative effectiveness of the developed CAI in different modes of presentation (only CAI, CAI with repetition, CAI with discussion) in terms of differences in the adjusted post-test mean achievement of the student in English Grammar. The findings of the study were (i) The achievement of
the students in English Grammar taught through CAI was found significantly higher than that of the students taught through traditional method. (ii) The achievement of the students taught through only CAI was found significantly higher in English Grammar than that of the students taught through traditional method. (iii) The achievement of the students taught through CAI with repetition and CAI with Discussion was found significantly higher than the achievement of the students who were taught through traditional method. (iv) From the three modes of the presentation of this CAI, the mode i.e. teaching through CAI with discussion was found significantly superior in comparison to other two modes. (v) CAI was also found to be effective in terms of the students.

Sanjay N. Maheta, (2009) reviewed on “Development and Effectiveness of Computer Assisted Instruction (CAI) Programme For Instruction in Geometry at Primary Level”. The objectives of the study were (1) To develop a Computer Assisted Instruction (CAI) Programme for Teaching the Units ‘Basic concept of Geometry’ and ‘Circle’ (Gujarati) in Maths of Standard V. (2) To develop a Computer Assisted Instruction (CAI) Programme for Teaching the Unit ‘Triangle: Congruity of triangle’ (Gujarati) in Maths of Standard VI. (3) To develop a Computer Assisted Instruction (CAI) Programme for Teaching the Units ‘Quadrilateral’ and ‘Kinds of quadrilateral’ (Gujarati) in Maths of Standard VII. (4) To try-out the effectiveness of the package in the context of the academic achievement of the students. (5) To study students’ reactions towards
learning through the package. The findings of the study were (1) The Computer Assisted Instruction (CAI) Programme for Teaching the Units ‘Basic concept of Geometry’ and ‘Circle’ (Gujarati) in Maths of Standard V group did not score significantly higher on posttest than the students of traditional method group. (2) The Computer Assisted Instruction (CAI) Programme for Teaching the Unit ‘Triangle: Equilateral of triangle’ (Gujarati) in Maths of Standard VI group scored significantly higher on post-test than the students of traditional method group. (3) The Computer Assisted Instruction (CAI) Programme for Teaching the Units ‘Quadrilateral’ and ‘Kinds of quadrilateral’ (Gujarati) in Maths of Standard VII group scored significantly higher on posttest than the students of traditional method group. (4) Students opined favourably for learning through Computer Assisted Multimedia Package. In the Sixth Survey of Educational Research29 the following research works were cited.

Shaik Fehameeda, Humiera Jawad (2012) studied on ‘The Effectiveness of CAI program in High School Biology’. This experimental study is an attempt to explore the usefulness of computer technology in the teaching-learning process with the intention of making learning more interesting, effective and innovative as well as challenging. The teacher has to play a remarkable role in dissemination of knowledge. Extra efforts on the part of teachers are needed to enhance the quality of education. The objectives of the study were the study has the following
objectives 1) To prepare the CAI program on one unit of biology at secondary level, 2) To implement the program on students of standard IX as experimental and control group, 3) To find out the significant difference in the pretest marks of both groups, 4) To find out the significant difference in the posttest marks of both groups. The findings of the study were result of the ‘t’ value shows that the posttest scores on achievement test are significantly higher than pretest scores which means that the CAI program is effective. Learning through CAI program is more enjoyable and self-motivated as learning may be due to novelty of the teaching-learning process where the individual students are motivated, attentive and active throughout the program.

2.3. Studies in Abroad

Lamazares and Ivonne Mercedes. (1991) studied on “The effects of Computer-Assisted Instruction on the writing performance and writing anxiety of Community College Developmental Students (Community College Students)”. The objectives of the study were (i) Researchers have only begun to ascertain the effects of computer aids on the behaviors and attitudes of writing students, particularly those in developmental college classrooms. (ii) This study set out to investigate whether the writing performance and writing anxiety of developmental community college students could be significantly affected by the use of computers in a networked environment. The findings of the study were A statistical analysis of holistic scores revealed no significant
differences between the CAI and comparison groups in writing performance, and no significant differences in the overall performance of the CAI group when writing on the computer as opposed to using paper and pencil. Analytical scores revealed that the content of the computer essays produced by the CAI group was rated significantly higher than the content of paper-and-pencil essays produced by the same group. Analysis of grammar and spelling, diction, organization and sentence structure did not yield significant differences between the handwritten and computer essays. The CAI group’s writing anxiety became significantly lower than that of the comparison group. Observations by the researcher indicated positive student retention and attitudes toward the computer, and limitations in the study due to lack of technological training and resources. Developmental students did not seem overwhelmed by the new technology or unable to benefit from it, as demonstrated by the significantly reduced writing anxiety of the CAI group, and the significantly higher rated content of the computer essays. These results, though limited in generalizability, warrant further experimentation with developmental writing instruction, that integrates computer networks.

Toet, Joyce Anne. (1991) reviewed on “A Comparative study of two instructional modalities on the achievement level of under prepared Community College Students (CAI)”. The objectives of the study were (i)
Assisted Instructional system would show superior results measured by increased cognitive gain, when compared to Traditional Instruction methodologies. (ii) A determination of the successful student based on gender, ethnicity, age and prior special education history was undertaken to develop a profile of the successful student in each modality. The findings of the study were analysis of final data showed that the experimental groups achieved greater cognitive gains, only Math 021 (basic math) showed differences of a statistically significant level. The analysis showed no possibility of developing a prescriptive instrument for use as a guide for future students to choose either ICAI or traditional classroom instruction based on demographic information and resulting mean cognitive gains. No trends are evident from the analysis of these data. One finding of significant import is the retention rates for ICAI and Traditional classroom methodologies. The results show that students remain in the Computer Assisted Instructional methodology at an increased number to a statistically significant level of alpha .05 in all classes studied (Math 101, beginning algebra, English 098, basic writing, English 020, reading improvement) with the exception of Math 021, basic math.

_Haley, Mary Lewis Purnell. (1991) studied on “Effects of Computer-Assisted Instruction in Macroeconomics Education: An Experimental Course Design”. _The objectives of the study were (i) To determine the effectiveness of using computer-assisted tutorials and examinations as
supplements to the basic lecture and discussion course in macroeconomics. (ii) Secondary considerations included college grade point averages, scores on the American College Test and sex as possible determinants of student learning. The findings of the study were results of the regression analysis showed no significant positive relationship between students' cognitive achievement in Principles of Macroeconomics and their use of computer-assisted instruction. The only independent variable that was consistently positively related to students' cognitive achievement in Principles of Macroeconomics was college grade point average. Males were shown to be superior to females in terms of cognitive achievement in macroeconomics.

Gao, Yong Qiang, (1992) studied on “Factors affecting use of Computer-Assisted Instruction by selected Chinese University educators”. The objectives of the study were (i) To examine whether identified factors have an effect on use of CAI by selected Chinese university educators. These five factors were investigated: Attitudes toward CAI; language factor; lack of adequate CAI courseware; lack of availability of CAI educators training; and lack of availability of computer systems. (ii) The study also sought to identify the current status and attitudes toward the use of CAI and the relationship between the use of CAI and educators' gender, age, university rank, computer experience, and English level. The findings of the study were results of this study indicated a significant development of CAI in China in recent years.
Most educators had positive attitudes toward CAI and more than half of them used CAI in their teaching. The study also found statistically significant differences between use of CAI and age and English level; age, rank, and computer experience were also correlated to use of CAI; all 5 factors examined in this study were statistically significant related to use of CAI. Based on the findings of the study, recommendations were made for improvement and future research on CAI in China.

Park, Insun Hwang (1993) studied on “Co-operative Learning and Individual Learning with Computer Assisted Instruction in an introductory University level Chemistry course”. The objectives of the study were to assess the effects of cooperative learning and individual learning with Computer Assisted Instruction (CAI) in a university-level introductory chemistry course. (ii) To assess the cooperation on group work and positive attitude toward using computers in the classroom. The findings of the study were subjects who participated in cooperative learning performed their achievement better than subjects in the individual learning groups with Computer Assisted Instruction (CAI) in an introductory university-level chemistry course. High ability level students and low-ability level students in cooperative learning group improved their performance more than high-ability or low-ability level individuals who worked alone with a computer in an introductory university level chemistry course. There was no significant difference on students’ attitude between students who worked in the group use of
computers and individual use of computers in an introductory university-level chemistry course. The majority of the students in the university level class showed positive co-operation on group work and positive attitude toward using computers in the classroom.

**Burton, Beatrice Spencer, (1995) studied on “The effects of Computer-Assisted Instruction and other selected variables on the academic performance of adult students in Mathematics and Reading (CAI)”**. The objectives of the study were (i) To examine the effectiveness of Computer Assisted Instruction (CAI) versus traditional instruction on the academic performance of adult students on the mathematics and reading sections of the Test of Adult Basic Education (TABE). (ii) This study investigated the independent influence of the variables age, gender, income, marital status, educational level, ethnicity and employment status on the academic performance of adult students on the total section of the TABE. The findings of the study were (1) The type of instruction had an influence on the academic performance of adult students on the math and reading sections of the TABE. (2) Adult students' age had no effect on their total scores on the TABE. (3) Male and female adult students had similar scores on the total section of the TABE. (4) Ethnicity had some influence on the academic performance of adult students on the total section on the TABE. (5) The more formal education adult students had obtained, the higher their scores were on the total section of the TABE.
Brosnan, T. (2001) studied on “Teaching Using ICT”, University of London: Institute of Education. The study identifies that the attitude, motivation, computer anxiety, and computer self-efficacy are factors affecting teachers’ use of computers in their lessons. Teacher resistance and lack of enthusiasm to use ICT in education may also be another limitation. Furthermore, many teachers may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their teaching. Unless teachers develop some basic skills and willingness to experiment with students, ICT use in education is in a disadvantage. On the other hand, the limitation of ICT use in education is related to student behaviour. Appropriate use of computer and the internet by students have significant positive effects on students’ attitude and their achievement. Nonetheless, it is very common to observe limitations related to student behaviour. Students tend to misuse the technology for leisure time activities and have less time to learn and study.

Rivet, J.R. (2001) reviewed on ‘Students achievement in middle school Mathematics: Computer Assisted Instruction versus traditional Instruction’. The objectives of the study were to examine changes in student achievement in middle school Mathematics on operations involving Fractions when computing two instructional strategies. The research questions in the study address the issue of student achievement, retention and cost effectiveness. The findings of the study
were in spite of variability in performance in individual types of fraction operations, the overall improvement scores were significantly greater in Computer Assisted classrooms than in the traditional classrooms. Further, in spite of the achievement difference between schools, the Computer Assisted classrooms performed better than the traditional classrooms at each school. Although the statistical analysis conducted revealed that there were no statistically significant difference rates between Computer Assisted Classrooms and traditional classrooms, in spite of marginally lower attendance rates in the Computer Assisted classrooms, overall improvement scores were significantly greater in Computer Assisted classrooms than in the traditional classrooms. In this study, students in the traditional classrooms on average improved 3 points on the 30 points post test while students in the Computer Assisted classroom on average improved 4 points. This signifies a 33% achievements benefit. Thus, 33% increase in student achievement was gained in classrooms utilizing Computer Assisted Instruction as opposed to those utilizing traditional instructional technique.

Regina,M.H., Regina,E.E., Grozman,E.P., Tilzon,A.D. (2004) reviewed on ‘Public School teachers more technophobic’. The study reveals that a survey was conducted on 498 teachers to determine the incidence of technophobia and the attitude of teachers towards online learning and teaching technologies. The study revealed that public school teachers are generally more afraid of computers than their peer working in private
schools. Older teachers were more afraid of technology than the younger ones. But, on the whole the teachers had a positive attitude towards online teaching and learning technologies.

Cannon, T. R. (2005) conducted a study on “Student success: A study of Computer -base Instruction versus lecture based instruction in developmental Mathematics at a Tennessee Community College”. The objectives of the study were (i) To examine the effects of incorporating Computerized Instruction developmental Mathematics courses. (ii) To study examined achievement, retention, persistence and success of students who began in elementary algebra, progressed into Intermediate Algebra and subsequently obtained their goal of completing an initial college level Mathematics course. The findings of the study were when examining achievement, retention, persistence and success, the only area in this study that showed a significant difference was among the achievement rates. The lecture students’ achievement rates were significantly higher than the students who received computerized instruction. Retention, persistence and success did not show any significant difference between the two groups.

Rosales, J. S. (2005) studied on ‘The effect of Computer Assisted Instruction on the Mathematics achievement of ninth-grade high school students in the lower Rio Grande valley’. The objectives of the study were to describe the effect of a Computer Assisted Instruction program had on the Mathematics achievement of ninth grade high school
students in the lower Rio Grande Valley as measured by the state assessment. The findings of the study were that there is a statistically significant difference between the Mathematics achievement of ninth grade high school students in the lower Rio Grande Valley who have participated in Computer Assisted Instruction and the Mathematics achievement of ninth grade high school students in the lower Rio Grande Valley who did not participate in Computer Assisted Instruction. The resultant analysis indicated that there was statistically significant difference between the Mathematics achievements of the two groups.

Ramazan Basturk, R. (2005) studied on "The Effectiveness of Computer-Assisted Instruction in Teaching Introductory Statistics". The focus of this study is to demonstrate and discuss the educational advantages of Computer Assisted Instruction (CAI). A quasi-experimental design compared learning outcomes of participants in an introductory statistics course that integrated CAI to participants in a Lecture-only introductory statistics course. Reviews of participants' identical midterm and final exams scores demonstrated that participants in Lecture-plus-CAI section obtained higher averages on midterm and final exams than participants in the Lecture-only sections and these higher averages likely were because of their better performance on concepts and practices that were taught in both regular lecture and CAI course. In addition, when the topics of the introductory statistics course moved from descriptive statistics to inferential statistics, the learning
gap between Lecture-only and Lecture-plus-CAI is increased. Findings suggest participants’ learning capacity of the introductory statistics could be improved successfully when CAI used as a supplement to regular lecture in teaching introductory statistics course.

Maria del Mar Camacho Martí (July 2006) studied on “Teacher Training In ICT-Based Learning Settings: Design And Implementation Of An On-Line Instructional Model for English Language Teachers”. The main objectives of the study were 1) To analyze the educational potentialities of ICT in the teaching of English as a foreign language, 2) To provide an overview of the current ICT training offer especially aimed at English as a foreign language teachers, regarding the incorporation of ICT from a pedagogical rather than technical perspective, 3) To create a blended instructional model dedicated to language teachers and facilitate tools, resources and strategies to integrate ICT and to encourage collaboration and co-operation among them, 4) To analyze the effectiveness of this instructional model through its contribution to improve the quality of teaching English through the use of new technologies and study its viability as Action Plan, 5) To prepare teachers to demonstrate fundamental technology competencies using technology as a tool for teaching and learning, enhance communication and reflection on their teaching, 6) To prepare teacher and teacher educators in the use of technology-rich environments by modeling and facilitating tools and resources as well as didactic strategies to be used.
Considering the present training offer addressed to teachers of English as a foreign language belonging to both Primary and Secondary School Education, it would like to point out that sometimes, the training offer exceeds the teachers expectatives and that in many instances there is a very low participation of teachers in training programs. Otherwise, teachers manifest that they do not find courses which suit their needs, considering this great paradox, there appears the need to find alternative solutions together with adequate and specific programs, whose contents really provide effective response to the teacher’s needs. The necessity to take the teachers training needs into consideration is urgent and it has to be done prior to the design and creation and implementation of teacher training programs.

Barnett, L. (2006) studied on “The Effect of Computer Assisted Instruction on the reading skills of emergent readers”. The objectives of the study were To examine the effect of Computer Assisted Instruction (CAI) in the reading skill of emergent readers in Kindergarten classes at select Reading First schools in the School District of Palm Beach Country, Florida. (ii) To analyzed teacher attitude towards the computer affected student reading achievement. The findings of the study were Students using Destination Reading (Riverdeep, 2001) did not benefit significantly from the use of the program compared to nonuser. The CAI group scored significantly lower on the initial sound fluency measure. Factorial ANOVA were used to compare DIBELS scores for
effectiveness of the treatment, pre and post test comparisons and interaction of treatment with test scores for the CAI compared with the nonuser group. T distributions were used to analyze data from the Reading Running Record and Word Recognition assessments. There were no significant differences between the CAI and comparison schools on these two measures. Teacher attitude toward computer did not affect students’ acquisitions of reading skills, as survey responses were in the positive range for all participants.

Dange, J.K. and Wahb, S.A. (2006) studied on “Effectiveness of Computer Assisted Instruction on the Academic achievement of Class IX Student’s Physical Science”. The objectives of the study were (i) To find out the effectiveness of teaching Physics for Class IX through conventional method; (ii) To find out the effectiveness of reaching Physics for Class IX through Computer Assisted Instruction. (iii) To find out the effectiveness of teaching Physics for Class IX through Computer Assisted Instruction package of “Universe”. The findings of the study were (i) There were no significant difference between mean gain scores of experimental and control group of pre post. (ii) There was no significant difference between mean gain scores of pre test and post test of control group. (iii) There was significant difference between mean gain scores of pre test and post test of experimental group. (iv) There was significant difference between mean gain scores of post test of control and experimental group.
Deck, Alan. Collins, David and McCrickard, Myra. (2008) studied on “Computer Aided Instruction: A Study of Student Evaluations and Academic Performance”. This paper describes the educational use of CAI in two different courses at a small, private university and the implementation and use experiences of the instructors. The objectives of the study were (i) To study the impact of using CAI on student evaluations of both the course and the instructor and on student grades. (ii) To evaluate, mean responses compared on questions influenced by the switch from traditional homework assignments to CAI-based homework assignments. The findings of the study were the means of the variables used in the regressions for the final exam score (FINAL EXAM). Of interest in this study, while the average FINAL EXAM scores are quite different (67.09 for microeconomics vs. 49.28 for financial accounting), the average CAI scores are almost identical (74.33 for microeconomics and 74.97 for financial accounting). This may suggest that the mechanics of using a CAI tool does not significantly impact the outcomes achieved by students. With the exception of SPRING, all of the variables tested are significant at the 1% level. The intercept terms for both courses (21.901 and 25.438) are consistent. The results for the CAI variable are, as expected, both positive and significant and indicate that the use of CAI improves final exam scores. For the microeconomics course only, the TIME variable is both positive and significant and added 4.846 points to the final exam score in year two compared to year
one. This indicates that with instructor experience, the use of CAI may be more effective over time. Regression results indicate that CAI was not significant in explaining the responses to any of the 10 student evaluation questions chosen. This suggests that the use of CAI, in and of itself, does not impact student perceptions of course quality. Alternatively, this may be due to the fact that the responses are not identified by student, so the aggregated data masks any effect of CAI on student perceptions of course quality. While the response differences are not large enough to be significant, at least for the microeconomics course, they generally are positive indicating a possible improvement from the use of CAI in student perceptions of course quality.

Conclusion:

The review of related literature presents a plethora of researches presently being conducted in India and Abroad. Based on the research studies, reported the researcher felt that there is a need to identify the perceptions of teacher educators towards problems of Teacher Education on the application of Computers in Teaching Learning Process in Krishna, Guntur and Prakasam districts of Andhra Prakesh. So that it will help in understanding their preparedness and suggest measures to overcome the problems of teacher education on the application of computers in Teaching Learning Process in Krishna, Guntur and Prakasam districts of Andhra Pradesh. The next chapter follows the Research methodology.