CHAPTER – 2
REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

Research takes the advantage of the knowledge which was accumulated in the past as a result of constant human endeavor. It can never be undertaken in isolation of the work that has been done on the problem which is directly or indirectly related to a study proposed by a research. A careful review of research journals, books, dissertations, theses and the other sources of information on the problems to be investigated is one of the important steps in the planning of the research study. A review of the related literature must precede any well planned research study. As SELLITZ (1962) has written: “Each study rests on earlier one and provides basis for future ones. The more links that can be established between a given study and other studies or a body of the theory, the greater the probable contribution”. Review of studies have been presented under following heads.

1. Studies related to slow learners and computer Based Teaching.
2. Studies related to Academic Achievement and Intelligence.

2.2 STUDIES RELATED TO SLOW LEARNERS AND COMPUTER BASED TEACHING.

(STUDIES CONDUCTED IN INDIA ON SLOW LEARNERS)

1. Mishra (1977) Studied “the Science and Mathematics at delta (See level area) at various” in science and math. He took a sample of 1060 students of 8th class and found that in all 23.58% students where Slow learner or educationally backward in science and mathematics. The level of achievement in mathematics is same among boys and girls both in urban and rural areas. Potential was the important cause of backwardness.
2. **Khan. S. A. (1983)** Conducted “A study of the personality characteristics of educationally backward pupils,” and the objectives were, the significant variables of personality responsible for low achievement and the relationship between these variables. And findings where, Educationally Backward pupils were more reserved and they were more introverts, tender minded, subdued, and had more anxiety and poor adjustment.

3. **Saxena. R. R.(1991)** “Intellectual and non-intellectual characteristics of slow learners”. Problem - studied in at exploring the main intellectual and non-intellectual characteristics of slow learners. So that they can be identify properly and suitably programmed. Objectives i) to explore the level of growth among slow learner and deviation from norms with regard intellectual factor. ii)to explore their persistent problem and expectations.iii) to develop a guidance programs for slow learner. Methodology-the sample compare 400 slow learners of class 9th IQ below 90 of the sample were male and female. Slow learners having IQ between 80 to 89. In the second category 100 male and 100 female slow learners. Again IQ between 70 to 79 were chosen. The tools used included cattells, culture fair, intelligence test, Jalotas, Journal mental ability test, Deprencial aptitude test, ability test. The collected data were treated with the Mean, SD, T-test, and ANOVA. Further graphical representation were also used. Major findings i) slow learners of both sex under the first category displaced much better learning speed, then their counter parts in the second category. The learning speed of the slow learner increased with the practice. ii) slow learner had a lower level of intellectual development than the norms on all the six intellectual factor. iii) the male slow learner had lower level of growth than the normal on some intellectual factor that is achievement, motivation,
maturity, temperament and suggesting and suggesting that there is retardation in learning speed. iv) male and female slow learners had poor level of vocational interest. This suggests the retardation of learning interest. V) male learners had a lower level of values, than normal, theoretical and economic value but higher social aesthetic values, female slow learners had low level or religious and economic values only.

4. **Soundraraj Rao and Rajaguru (1995)** Studied “Effectiveness of video assisted instruction on the achievement of slow learners” and the objectives are i) the investigator have adapted effectiveness of video assisted instruction on the achievement of slow learners in learning Science concepts. ii) to make a comparative study of the achievement of slow learners in terms of the variables are sex, difference, socio-economic difference, management of school, parents educational status and family size of slow learners iii) After the research investigator considered relationship between achievement of slow learners and their intellectual capacity led to the findings are; i) Slow learners of control land experimental groups, where he found immediate retention. The investigator has found video assisted instruction group performed better in immediate retention then the conventional learning group ii) Irresponsible type of school managed by different bodies, the slow learners of those groups were unlike in immediate retention.

5. **Reddy and Ramar (1995)** Undertook a study assess the “Effectiveness of assisted instruction in teaching Science to the slow learners”. The investigator adapting experimental group, then the control of slow learner group. But the authors are silent over the faciability of CAI in Indian school, setting, where most of the schools don’t have even a single computer.
6. **Reddy and Ramar (1996a)** conducted a study “On relative effectiveness of video instruction in teaching Science and Social science to slow learners”. There was better rate of progress in social science than in science. This strategy enabled the experimental group slow learner to copy with normal students to a considerable extend.

7. **Reddy and Ramar (1996b)** “Assessed impact of modular approach on achievement of slow learner in Social Science”. The approach to the study concluded that modular approach was very effective in reaching out to all the students. He enables the slow learners to cope with normal student to a considerable extent.

8. **Reddy and Ramar (1996)** have described certain procedures to identify slow learners which have been successfully used in Indian school setting. This process incorporates both informal measures like observation, educational assessment etc. And formal assessment measures like standardized tests. They point out that sandra’s Checklist can be used to counter check the initially identified slow learners.

9. **Reddy , Ramar and Kusuma (1997)** “The learning problems of slow learning children and they expound how to teach language and mathematics to slow learners”. They have furnished a variety of educational programmes for slow learners. The investigator have set out to give the intellectual grounding and practical strategies, to the present and tomorrow teachers to make them become more effective instruction of slow learner.

10. **Reddy and Ramar (1997a)** assessed “Effectiveness of multimedia based modular approach In teaching English to slow learners”. The study found this strategy to be effective in teaching English to the slow learners. They suggested how this strategy could be used to boost
up the achievement of slow learners so as to diminish wastage and stagnation in our school.

11. **Reddy and Ramar (1997b)** undertook an experimental study to “Verify the effectiveness of multimedia instructional strategy in teaching Science to slow learners”. The results showed that the multimedia instructional strategy was more effective than the traditional lecture method in teaching science and it enabled the slow learners to cope with normal students to a considerable extent. The study also point out the applicability and feasibility of multimedia instructional strategy in Indian school setting.

12. **Reddy and Ramar (1998)** studied the “Effect of video Instruction on achievement on slow learners in mathematics”. Video instructional programme in mathematics were develop for the slow learners. So slow learner of 7th standard were divided in two groups. Namely control and experimental group. Normal group was also selected to assess the extent to which the video instructional method enabled the slow learners to cope with normal students. The slow learner of standard 7th to learn mathematics was in feared.

13. **Ramalingama (1999)** conducted a study on “Development and effectiveness of a strategy training programmed for cognitive learning. (Memory, comprehension, and problem solving) among the learning disabled, non-learning disabled and slow learners. Objectives of the study, to develop strategy training programmed. Methodology – The study was based on a sample for slow learners students. And Major findings of the study. The result has positive significant effect on the test on the cognitive learning among all the groups.

14. **Reddy and Ramar (1999)** research “Investigated the effectiveness of multimedia instructional strategy in teaching Science to slow learners”. The study was undertaken with the following objectives i)
to develop multimedia packages for 8th class slow learners ii) to measures the multimedia instructional strategy with special reference to slow learners. Students were also formed in to in order to assess how for multimedia instructional strategy enabled the slow learners to cope with normal students. Major findings of the study, i) the obtained result showed that the multimedia instruction strategy was more effective than the traditional lecture method ii) teaching science and it enabled the slow learners to cope with normal students to considerable extent.

15. Ramar (1999) “Studied the effectiveness of multimedia based modular approach with special response to slow learners”. The aim of study is to develop multimedia based modules for English, maths, social science, and science subject of 8th class. This study results showed that, there was significant difference between the pre-test and post-test scores of experimental group of slow learners. When the subjects were taught through multimedia based modular approach. The findings of the study showed the multimedia approach to be more effective for slow learners.

16. Priti Rana and Sheela Sangwan (2000) “Assessed the memory of slow and average learner”. She took pre-school children 4-6 years old. She adopts Stanford test intelligence scale was used to identify slow learner and average children. Whereas the memory of the children was assessed by a standardized cognitive test. Among the slow learners girls performance was better when compare to their counter parts. Whereas average learner boys surprised, average learner girls only in objective performance. In other subject test object recalling sequestional memory ad numerical memory average learner girls were though not significant than the boys.
17. Reddy and Kanchanmala (2000) Attempt to study the “Investigated the effectiveness of the multimedia based modular approach in learning Botany by the Slow Learners”. He selected 60 slow learner students of VII standard where selected. They were put in to two groups, namely experimental group and control group. Average was also selected. The 60 slow learner students were divided into 2 equal groups of 30 students each. The experimental group slow learners were thought through multimedia modular based module or approach and another group was taught through traditional lecture method. The result of the study proved that multimedia modular approach was more effective than lecture method in teaching Botany.

18. Sangawan. S. and Sangwan. S. (2003) “The effect of stimulation programme on mental ability of Slow Learner”. Objectives are: i) to assess the mental ability of slow learner ii) to assess the impact of intervention training mental ability on slow learners. The study was based on a sample of 40 slow learners 5-6 years old Hisar Haryana State. The slow learners were divided into two groups, control group and experimental group. The mental ability of slow where assessed with MCCarthy scale of children’s ability. Major finding of the study where; i) In verbal ability majority of slow learners, reach up 4 SD(Standard Deviation) above mean 60 percentage, where in perceptual performance, 45 percentage of slow learner reach up to 3 D above mean. ii) In qualitative ability of slow learners 90 percentage of reach from 5 SD below mean to 4 SD. While in memory the slow learners reach up to 1. SD above mean.

19. Mundhe Rajeshwari (2003) Developing “Self- study package in computer education for slow learner in Pune University”. Has take study as a review through this study to develop self -instructional package of video programme and printed material in models in
material test of developed package by trying out on slow learner. Research investigator has used experimental method, he conclude that, use of self- study packages developed by the researcher for teaching programme of computer education to slow learner. She found effective even the video programme for world star was not found significant. It was conclude that video programme did not show a significant improvement in the achievement of slow learner for teaching programme.

(STUDIES CONDUCTED IN ABROAD ON SLOW LEARNERS)
Quite a number of studies have been conducted abroad with regard to slow learner.

1. **Duccan, J. (1942)** believed that higher performance quotients showed that the sub-normal children should be taught by methods based on thinking and problem solving the practical activities. The low attainment of slow learners is due to an educational approach through the medium of words, their weakest factor. He laid stress on practical activities and concrete experiences. A special attack on language backwardness of sub normal children is required, both indirectly through the concrete and practical and directly through the medium of language and verbal experiences.

2. **Burt (1946)** States that one of the most frequent complaints about backward children is the weakness of their memory. Of all the special disabilities that hamper educational progress, the most frequent is a weakness in what may be termed long distance memory. Dull children seem to need to go over the material more times before it is fixed in their minds and more frequent revision is required to prevent forgetting.
3. Willot’s (1953) study on secondary school slow learning children revealed the importance of orientation, family background, adoption to studies and particularly the method of teaching for their academic success.

4. Cleugh., M.F. (1957) points out that the wide ESN umbrella is in danger of being misused to provide a haven for pupils who should have been provided for in other ways. Pupils like slow learners, who are generally not mentally retarded, could be provided for in ordinary schools where adequate facilities are widely available. There must be some comprehensive provision for a special educational treatment in such ordinary school. Meanwhile, there is a danger that some children whose limited capacities really merit the support and the preparation for living given in the ESN school may be overlooked, while others whose immediate difficulties call attention to them are being admitted to ESN schools.

5. Tansley and Gulliford (1962) remark that one of the causes of poor memory in slow learners is weakness in attention. What is to be learnt must be attended to and its main features observed. Failure in this may be due to factors in the child such as restlessness and distractibility. Also, attention may be poor because the material to be learned is unsuitable—too difficult or outside the child’s experience. It may be that it is presented in a way that does not facilitate accurate perceptions of it.

6. Ross. (1977) in his book entitled “Psychological Aspects of Learning Disabilities and Reading Disorders” outlined clearly in what way the learning disabled are different from the mentally retarded, the physically handicapped, the emotionally disturbed and the culturally disadvantaged.
A learning disabled child is not mentally retarded. He is a child whose intellectual capacity is below the normal range. His or her difficulty almost always affects every area of behavior which involves learning. Such a child would have been late in acquisition of language, slow in learning certain motor skills. In school, such a child will have trouble in all subject areas, be it writing, spelling, reading or arithmetic.

7. Michel (1973) Carried out a study on the development of a unit of study and related teacher’s guide on structure and function of living things for use with slow learners at the secondary level. Students and teachers involved in the research study, subject matter and to the students activities. This was particularly evident for the laboratory activities and demonstrations; however students have a strong aversion to reading even though the reading activities were short.

8. Mildred Alice (1974) carried out the effects of two levels of over learning the motor tasks on the retention of fast and slow learners, and major finding of the study were; (i) There were significant differences in relation between slow and fast learners for the retention measures of recall, relearning and saving score. (ii) There were significant differences in retention between subjects with 0% over learning and 100% over learning for both ability to groups when the methods of re-learning, saving scores, and percent of saving were used to measure retention. (iii) There were significant differences in retention between subjects with 0% and 200% over learning and 100% and 200% over learning for both ability groups for all measures of retention.(iv) There was a significant interaction between speed of learning and over learning when retention was measured by the relearning method.
9. Faber (1975) studied the conceptual tempo of elementary age learning disable, slow learning, and regular class boys. Major finding of the study were; (i) the impulsive dimension is not as strongly related to the learning disability syndrome, and in fact, the learning disabled boys were slower to respond than either the regular class or slow – learning boys. (ii) The slow – learning group does not improve by increasing response latency nor by decreasing errors in the fourth to the sixth grade level as they continue to be the impulsive. (iii) The reflective dimension is a prevalent style among regular class boys at both grade levels.

10. Swenson (1975) Carried out a study on the effects of peer tutoring in regular elementary classrooms on sociometric status, self-concept and arithmetic achievement of slow learning tutors and learner in a special education resources programme and no significant differences were found among experimental and control groups on sociometric self-esteem or arithmetic skills. On post hoc comparisons, the sociometric ratings of the total sample of students were found to gain significantly over test times, but the pre-to –post-sociometric rating increases were also significantly different for the entire peer group.

11. Haines (1977) investigated in his study of the construct validity of the woodcock reading mastery test with underachieving and slow learning fourth, Fifth, and sixth Grade pupils. Major findings of the study were; (i) On the basis of significant relationships between the Woo dock Reading mastery Test and other measures relating to reading achievement, the construct validity of the Woodcock reading mastery test is validated for diagnosing reading abilities in these grades. (ii) On the basis of significant relationships between the woodcock reading mastery test and other measures related to reading achievement the construct validity of the woodcock reading mastery tests is validated
for slow learner in grades four, five and six and the test can be recommended for diagnosing reading abilities in these grades. (iii) No significantly different relationships were found between the group of underachievers and the group of slow learning subjects on scores on the woodcock reading mastery tests. However no attempt was made to match these groups across the variables of race and sex. Any conclusions drawn from these data concerning differences in scores between group I and group II on the woodcock reading population of slow learners in grades four, five, and six.

12. Griffin (1982) Studied the effects of finger math, or chisabop upon the mathematical computational ability and mathematical attitudes of ninth grade general mathematics slow learners with attention given to the variables of sex and learning styles. Conclusion was that finger math instruction does not enhance mathematics computation ability or attitude towards mathematics for any of the eight comparisons made; therefore, Finger math is not powerful as promoters have claimed in the surveyed literature.

13. Moyofu (1984) Studied the effects on achievement relation and attitude of using expository and discovery approaches in teaching factoring to adult slow learners. The findings of the study did not reveal conclusive evidence that discovery methods are superior to the expository method of teaching adults in college.

14. Bruist (1984) Investigated – Observation and rule effects on slow learners using a computer and concluded the students who demonstrated poor achievement were able to learn a computerized task through computer presentation and through observation and the learning was facilitated by concise generalization statements.
15. Scott (1987) examined the reading and spelling skills of slow learners. No gender differences were found, but there was evidence that those non-right-handers in slow learners and learning disabled groups had more impaired phonology than did right – hander.

16. Williams (1991) Studied comparative analysis of the slow learner with other students in regular education and found that the slow learner group received significantly lower achievement scores. There were significant interactions between the groups arithmetic, language and reading achievement scores. The slow learner group received significantly lower academic grades than did the comparison group. The slow learner group was not absent from school more frequently than were the comparison group. Each year a significantly greater proportion of the slow learner group was retained to comparison group over a six year span a greater proportion of the slow learner had experienced multiple retentions that had the comparison group. In addition, a greater proportion of the slow learner group was referred for special education interventions than the comparison group.

17. Hamphries and Bone, (1993) conducted a research on use of IQ criteria for evaluating the uniqueness of the learning disability profile. Beyond predetermined performance scale differences, a group of 24 children with learning disabilities having a lower verbal, higher performance IQ profiles on the WISC – R and 33 slow learners were not found to be otherwise distinguished by their individual WISC – R subtest scores or subtest scatter. The majorities of children were males, while of lower to middle socioeconomic status and ranged in age between 6 to 13 years.
2.3 STUDIES RELATED TO ACADEMIC ACHIEVEMENT AND INTELLIGENCE.

1. Zacharia (1977) found that the pupils’ intelligence was a major factor in influencing their achievement in Social Science and observed that pupils’ attitude and intelligence scores were more or less equally correlated with their achievement in Social Science.

2. Alegaokar (1981) noticed that high achieves in physical achievement had higher I.Q. than low achievers. High achievers in jump and reach, as well those in long jump and throw ball, had higher I.Q. than low achievers.

3. Kumari, Indira (1990) found that children with high intelligence achieved conservation of mass, weight and volume easier than those who were of low intelligence.

4. Dhall, Taruna C. and Salni, Madhu (2008) found that children of working mothers having similar intelligence, receiving high cognitive stimulation exhibited higher academic performance as compared to those receiving low cognitive stimulation. Children of non-working mothers having similar intelligence, receiving high cognitive stimulation were found to exhibit higher academic performance as compared to those receiving low cognitive stimulation.
CONCLUSION

This chapter presents literature referred concerning the problem at hand. This made the researcher well conversant with relevant theories in the field and researches conducted. The research studies were categories into two categories and first and second were based on technology used that is audio-visual, computer aided instruction. The reviews make aware about the innovation research findings, methodology of research adopted by the researcher. The review gave an information that there are very few studies pertaining to development of programmes may be because of lack of resources and time. The review also gave idea that there is no study which compares two methods at a time. This also gave insight into the strategy to be adopted in the present study.