Chapter II
REVIEW OF RELATED LITERATURE

The investigator made an extension search for the existing literature with a view to finding links with the already existing findings. The review of related literature is an essential part of any investigation. The survey of the related literature is a crucial aspect of the planning of the study.

1. In the words of ‘Turney and Robb’ (1971) the identification of a problem, the development of a research design and discrimination of the size and scope of the care and intensity with which a researcher has examined the literature related to the intended research.

2. The advantages the related literature is to provide insight into the statistical methods through which validity of the results is to be established. According to the David (1969), the literature is review to create to content from the past for the new study to be conducted with new subjects and newly obtained data.

The analysis of related literature revealed that very few studies were conducted in the area of remedian in reading and writing in English language. The investigator has focused on only one aspect that is directly related to the present study. The literature available in the related area are summarized and presented under the following heads:

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**Agrawal, V.R. (1981)**, A study of reading ability in relation to certain cognitive and noncognitive factors in reading ability. The main aim of the study was to examine the role of some of the personal, cognitive and non-cognitive factors in reading ability. A sample of 400 grade IX students (200 males and 200 females) was selected. Personal data blank, Krishna’s Battery of Reading Ability Tests, Jamuar’s Study Habits Inventory, Mohsin’s Bihar Test of General Intelligence, Nafde’s Non-Verbal Test of Intelligence, Sinha and Krishna’s Revised Version of Comprehensive Test of Anxiety, Eysenck’s Personality Inventory (Hindi Version by Sinha), Bengalee’s Youth Adjustment Analyser and Worcel’s Self-Activity Inventory (Hindi Version by Prasad and Sinha) were used. Two-way analysis of variance was employed for data analysis. Some of the major findings were: 1. Males and females differed significantly in reading ability, study habits, academic achievements, neuroticism, extraversion, parental attitude and ideal self (females scored higher than males only on reading ability and academic achievement). They did not differ statistically in verbal and nonverbal intelligence, anxiety, and actual self dimensions. 2. Arts and science students among males and females differed significantly in terms of their frequencies on high and low reading ability scores. 3. High and low reading ability groups among males differed significantly in ordinal position, economic status and father’s or guardian’s educational level; and among females they differed significantly in father’s or guardian’s educational level. 4. High and low reading ability groups did not differ statistically in caste and father’s or guardian’s occupation. 5. ANOVA results indicated that the main effect of sex was significant in study habits, academic achievement, verbal and non-verbal intelligence, anxiety, neuroticism, parental attitude, actual self and ideal self. The main effect on reading ability was significant in study habits, academic achievement, verbal and nonverbal intelligence, anxiety, neuroticism, parental attitude and ideal self. The interaction effect was significant in study habits, academic achievement, anxiety, neuroticism, extraversion, and parental attitude. 6. The relationship between reading ability on the one hand and study habits, verbal and nonverbal intelligence on the other was significant and positive. Significant
and negative association was observed between reading ability and ideal self scores. 7. Personal and cognitive factors were more meaningful in the context of reading ability scores than the non-cognitive factors considered in the study.

Ahuja, G.C. and Ahuja, P. (1978), Demonstration of audio-visual and reading aids to school students and testing their reading speed in three languages – Kannada, Hindi and English. The main objective of the study were: (i) to acquaint school children with various reading skills and to make them conscious of their importance for future educational growth, (ii) to create interest in the environment from where they could learn many things, (iii) to break the unfounded fears about difficulties in learning a language by showing how it was not all that difficult, (iv) a general evaluation of the audio – visual aids either produced or purchased by the CIIL, Mysore, and (v) to measure the reading speed and comprehension in three languages – Kannada, Hindi and English. Forty students of Class VIII of an English – medium school of Mysore formed the sample of the study. The method of study consisted of a sandwich audio-visual demonstration programme of three hour’s duration which included (a) closed circuit television programme consisting of a film entitled Energy Crisis under the head ‘Learn from Your Environment’, produced by the CIIL, Mysore, (b) three films on Reading, purchased from an outside source, (c) a film on How to Learn a Language, produced by the CIIL, Mysore. The students were later tested for reading speed and comprehension in three languages, namely English, Hindi and Kannada. The reading tests in the form of informal checks were locally prepared. The major findings of the study were: (i) the CCTV programme was liked by the students and was found to be very effective both from the language and comprehension point of view by more than 95 percent of the students. (ii) The students were not much benefited by the three films on Reading purchased from an outside source. Many students who found the language difficult or could not follow it fully, could not grasp the message completely. (iii) More than 95 percent of the students found the film on How to Learn a Language very interesting and clear and could fully follow the message of the film. (iv) The reading speed per minute for Kannada, Hindi and English languages was found to be 95.93, 100.5 and 186.62 words, respectively, and the reading comprehension was 57.5 percent, 63.75 percent and 73 percent, respectively, for the three languages.
Aiello (1980) conducted meta-analysis of 115 studies comparing individualized instruction with traditional lecture instruction and found that in science the farmer approach was more effective.

Ajitha, et al. (1999) “Self learning instruction materials in the teaching of Biology. An Experimental study”. 40 secondary school students of class VIII participated in the experiment. Finding: i) The experimental group recorded a higher achievement score than the controlled which indicated that learning strategy of using self-learning instructional material was effective in improving the level of achievement. 2) SKIM was found effective on enhancing the performance of the experimental students. 3) The SLIM was more effective in attainment of higher order objective application and skill. 4) The difference of the scores with respect to knowledge and understanding was also significant. 5) No significant difference was shown with respect to the retention.

Alavandar, R. 1992. A study of selected variables relating to English reading competency of high school pupils. Problem: It attempts to study various variables relating to English reading competency of high school pupils and their manipulation for improving English reading competency (ERC). Objectives: (i) To construct and standardize the following tests in English for standard IX pupils, a) Spelling Test, b) Grammar Test, c) Silent Reading Comprehension Test, (ii) to find out the level of the English reading competency of high school pupils, (iii) to study the reading habits and interests of high school pupils, (iv) to find out if there is any significant difference between the sex and reading habits and interests of the pupils as well as their parents’ education, occupation and income on the one hand and their English reading competency on the other, (v) to find out if there is any significant relationship between the pupils’ reading habits, spelling ability, passive vocabulary and grammatical knowledge on the one hand and their English reading competency on the other. (vi) to determine the relative importance of the pupils’ reading habits, spelling ability, passive vocabulary and grammatical knowledge in the prediction of their English reading competency, (vii) to find out if there are any differences in the English reading competency among different groups of pupils such as English-medium and Tamil-medium class pupils, rural school and urban school pupils and pupils studying in private schools and those studying in
government schools, (viii) to develop a model of reading in a second language learning situation, and (ix) to suggest appropriate measures for the development of English reading competency of high school pupils. Major Findings: (i) The scores on ERC varied highly, (ii) The mean scores on silent reading comprehension and word recognition were less than 50%, (iii) The mean scores on grammar and reading habits were just below 50%, (iv) The mean spelling score was just about 50%, (v) Boys differed significantly from girls on ERC, (vi) English-medium pupils secured a higher mean ERC than Tamil medium pupils, (vii) Less than 10% of Tamil medium pupils had access to books in English other than their school texts, (viii) Urban pupils secured a significantly higher mean ERC score than rural pupils, (ix) Pupils of private schools secured a higher mean ERC score than those from government schools, (x) Pupils whose parents were educated had a higher mean ERC than those whose parents were illiterate (xi) Pupils with a graduate father and an undergraduate mother had a higher mean ERC than those who had a graduate father and illiterate mother, (xii) Pupils from different income groups did not differ significantly in their ERC, (xiii) The ERC scores of pupils differed consistently with respect to the occupation of the parents, (xiv) The interest pattern of standard IX pupils was the same regardless of their ERC, (xv) There was a strong and significant correlation between ERC and reading habits, ERC and spelling, ERC and vocabulary, and ERC and grammar, (xvi) The findings support the model of English reading in second language learning propounded by the investigator with the minor modification.

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Al-badr, Mohammad Saud (1993) “Presented on the computer in self-instruction course on micro-computer Application software”. The subjects of this study were 55 students who enrolled in the self-instruction sections of the software learning course. The results showed here was significant difference in achievement among the four learning style groups assimilators, accommodators, convergers, and divergers. Convergers achieved significantly higher than Assimilation.

Ambasna, Anil (2009), Utilization of CT in remedial instruction. Objectives of the study: (i) To develop a diagnostic test on unit light: reflection and refraction of science and technology subject of grade X. (ii) To find out the difficult content points of
light: reflection and refraction unit faced by students after receiving regular classroom instruction through traditional method. (iii) To find out the effectiveness of CAI programme as a remediation treatment by comparing the mean achievement scores of pretest and posttest. Results: On the basis of data analysis and interpretation of the results obtained CAI in remediation task was found to be successful as the students were able to overcome the difficult points in the content.

Ammal (1972) analyzed the linguistic difficulties in learning Hindi, on a sample of 600 secondary school pupils in Kerala. Linguistic analysis through a specially designed test revealed the relative difficulty among 27 different linguistic areas. The study revealed that the method of teaching Hindi language was inadequate and uninteresting. It also revealed that the majority of the school, children exhibited deficiencies in learning Hindi language.

Anand, V.S. (1985), A study of the factors that affect the orthography in Hindi and diagnosis of spelling mistakes in the writing of class V students of Hindi medium schools of Delhi, along with a remedial programme. The major objectives of the study were (i) to diagnose spelling errors in Hindi made by class V students of Hindi medium schools of Delhi, (ii) to study the factors responsible for those errors, and (iii) to develop a programme of remedial instruction and to demonstrate its effectiveness. The investigator analyzed written work done by 70 class V students and identified major areas of students’ difficulties. A sample of 143 words from the analyzed errors was selected and a battery of eight tests was developed. A sample of 203 students from five Hindi medium schools was selected for the administration of a battery of diagnostic tests. The data thus collected were treated statistically and reliability of tests was found out. Factors affecting spelling errors were studied analytically. Five groups of erring students were provided a remedial programme with the help of different teaching strategies. The same diagnostic test was administered ten weeks after the remedial programme. Major findings of the study were: 1. The largest number of mistakes were made in respect of the use of matras, closely followed by the use of incorrect words. 2. Most of the spelling errors were due to inadequate mastery of the most basic tasks in the process of spelling. 3. A large number of students were not able to learn till class V the sound-letter associations
required for correct spelling. 4. Ability to spell correctly did not automatically improve with age. The difference between the performance of older and younger students of the same class was not significant which indicated that it was the quality of instruction rather than age which accounted for the spelling error. 5. Use of the teaching-learning strategies which involved oral-aural-visual and motor experience of the word was most suitable for improving the spelling ability of students. The educational implications of this study are: (1) Specific instructional programmes should be undertaken so that students develop the insight into the rules and ways in which Hindi words are spelt prior to their third year in school. (2) Since pronunciation drill and reading practice alone do not help in remedying deficient spelling ability, these should always be accompanied by word-study and writing practice.

Anjaneyaler et al. (1998) conducted a study on the usability of a remedial multimedia tutorial, uses netscape in the context of a remedial teaching system in biology. The student is given fine grained diagnostic tests based on concepts on the human brain. Depending on the performance in these tests the student is allowed to browse through relevant material using netscape.

Ashok Pramila and Rajagopalan, S. (1995) “Peer group learning in remedial program: a pilot study”. The sample comprised 30 students, 10 in each of standard VI, VII, and VIII. The results showed that all but 4 made improvement, the students performed as better in oral work and writing than formed grammar and all the students liked working in groups.

Austic (1965) “Comparison between programmed Vs Conventional instruction in Algebra”. The experimental group was taught with a simple programme while the controlled with conventional class method. The experimental group scored higher and retained more on the test items actually covered in the programme but less well in applying learning to new questions not covered in the programme.

Banarjee (1993) assessed the students and teachers understanding of chemical equilibrium. A diagnostic test on chemical equilibrium was administered to collect necessary data. The study revealed that both teachers and students committed errors in
the following concepts in chemistry: Le Chatlier’s Principle, Rate and equilibrium, applications of equilibrium to acids, base and ionic solutions.

**Bartz (1989)** conducted a study in the use of writing and self-monitoring strategies by learning disabled eighth graders. Strategies in capitalization, punctuation sentence completion and self-monitoring were introduced and practiced. Results revealed significant improvement in vocabulary thematic maturity and head writing during the period of strategic instruction.

**Baskaran, Herbert S. 1989.** The impact of the remedial teaching programme on the common errors committed by the students of standard XII in written English. Objectives: (i) To identify and categorize the errors committed by the students of standard XII in written English, (ii) to design some suitable remedial teaching programmes for the students of standard XII to minimize these errors in written English, and (iii) to implement the designed remedial teaching programmes for the students of standard XII to minimize these errors in written English. Major Findings: (1) The students of the control group did not differ significantly with the experimental group in committing orthographical errors in written English in the pre-test, (2) The students of the control group did not differ significantly with the experimental group in their mean scores in the pre-test, (3) The students of the experimental group did not differ significantly with the control group in committing orthographical errors in written English in the post-test.

**Beebar (1998)** analyzed the difficulties experienced in learning science as revealed through their understanding of gas exchange in plants. The study revealed that during the interviews, the students in the group below median were often able to recall facts and apply knowledge, but they had failed to recall and apply the knowledge while responding to the written questions.

**Bhattacharya (1977)** conducted a study to diagnose the detailed patterns of disabilities in students in specific areas of algebra and to try out the teaching methods that would prevent development of learning disabilities in Algebra. The preventive measure included teaching through audio-visual methods. Results revealed that through audio-visual methods was effective and it helped in increased motivation and retention.
**Bhattacharya (1982)** conducted a study in diagnosing and preventing learning disabilities of primary school students in arithmetic. He found that learning through audio–visual methods caused prolonged retention that traditional methods.

**Bhattacharya (1985)** tried out a technological approach for alleviation of learning disabilities of the students in life science. Results of the study indicated that learning through audio-visual materials and techniques caused prolonged retention than by traditional methods.

**Boling and Carol (1996)** conducted a study with objective to determine which method individuals learning. Cooperative learning or interactive multimedia in addition to lecture based distance education was more effective and satisfying.

**Boon Gienda Lanetle (1999)** “Cognitive self - instruction to foster self regulation in regular education students”. The study involved a total of 80 participants. The results failed to support a treatment effect for the cognitive self instruction intervention in mathematics reading. However qualitative data revealed that instruction of attention focusing and study skills is a positive approach to increasing students engagement in school tasks.

**Bringhon (1992)** investigated memory enhancing effects of elaboration and mnemonic encoding of an information presented with maps to more traditional non-mnemonic maps on recall of locations of events and information associated with those events by students. Results revealed significant increase in the recall of locations although not in the recall of event information. Researchers highlight the importance of individualized methods for effective student learning. The studies reviewed in this chapter that remediation can be considered as an effective technique, self-instructional programme to improve teaching-learning process, an instruction for overcoming difficulties and misconception in various subjects. The studies revealed that remedial instructional material were effective in improving academic attainment of students. Analysis of the related studies helped the investigator in the preparation of diagnostic test, remedialional materials and in selecting suitable experimental procedures. The analysis of studies of related to diagnostic testing and remediation revealed that diagnostic testing in teaching can be used, as a technique for finding out the frequency
and types of errors committed by students, for the correction and elimination of individual weaknesses, as a tool for finding out the reason for committing errors, as a technique for prognosis and in guidance and counseling in academic dimension. It can also be used as a prevention technique for common errors and in identifying major hindrances in learning various concepts. The researcher, by reviewing the studies, became confident in his task of studying the diagnostic testing, remediation and the effectiveness of self-instructional material.

Brown (1989) studied the effect of mnemonic instruction upon retention of vocabulary with learning disabled children. Three methods were used (a) semantic mapping (b) semantic keyword and (c) self-selection which allowed students to choose their own memory strategies. It was revealed that semantic mapping key word recalled more vocabularies and the other groups improved in their vocabulary.

Bryan (1999) investigated the impact of planning pyramid on teachers and students with and without learning disabilities. This study examined (a) the lesson instruction and (b) learning behaviour and social studies content knowledge acquired by students with and without learning disabilities. This was a multiple case study consisting of three teachers and two students one with and another without learning disabilities in fifth grade general education social studies class. Results of the study revealed that all students with and without learning disabilities demonstrated gain in their ability to respond to explanation type questions and one student with learning disabilities increased his social studies content knowledge.

Bukatman (1981) conducted a study on the effects of computer assisted instruction for mastery of multiplication of facts on learning disabled elementary school children differing in locus control. Results revealed that students possessing an internal locus control were able to learn more independently with less teacher intervention and direction than those who possessed an external locus control. The study examined the effects of auditory presentation and rewriting stories in the literature content learning of secondary school children. Experimental group performed at significantly higher level in those written stories.
Bulter (1994) investigated the effectiveness of an intervention programme designed to promote self-regulated learning strategic content leaving. In strategic content learning rather than teaching student specific cognition strategies instruction focuses on supporting students to approach leaving tasks strategically. The study was composed of six parallel case studies of adults enrolled in post secondary education programme. Results of the study indicated that in all case student’s performance on their chosen task improved.

Burke et al. (1998) designed conceptual computer animations for remedial teaching to help students understand the basic concepts and principles of a dynamic chemical process. They argued that an animation sequence should be linked to a lecture demonstration, there key assisting in the presentation of three levels of representation: microscopic macroscopic and symbolic.

Burtz, (1965) “A study supervised and Non - supervised, Programmed instruction in the University Sitting.” The study compared a non-supervised method instruction with a supervised instruction method. The results indicated the non-supervised completion of the programmed text were less effective in terms of achievement than supervised instruction.

C. Shankar et al. (2010), “Identifying reading difficulties of English standard students in periyanaickenpalayam”. Objectives: (i) To find out the level of reading difficulties faced by 8th standard students with respect to gender. (ii) To know the reading rate of 8th standard students with respect to gender. (iii) To find the ability of reading comprehension of 8th standard students with respect to gender. (iv) To find the reading efficiency of 8th standard with respect to gender. Findings: 69.53% students possessed greater reading difficulties. 30.47% students possessed less reading difficulties. 51.55% boys possessed reading difficulties, 48.45% girls possessed reading difficulties.

Cale (1992) investigated the effectiveness of an instructional intervention which was designed to teach students with learning disabilities to write a sequential expository paragraph through strategic instruction and the use of a set of instructional writing framework. Sample consisted of twelve students of 3rd, 4th and 5th graders of Results
indicated that the three groups of students attained criterion performance levels in writing and increased fluency over the baseline levels.

Castro Acuna et. al. (1999) developed a logic puzzles as a remedial programme to solve the problems in chemistry easily and without many errors. These logic puzzles were field – tested with a diverse audience in the general chemistry classes at the University of Nebraska – Lincoln and were found to be effective for remedial teaching.

Chaudhary, M. (1985), Preparation and evaluation of programmed learning material in Geography for the secondary level. The main objectives of the study were (i) to prepare programmed learning material on selected items of the geography syllabus, and (ii) to evaluate the programme in terms of learning induced among the readers by reading the programme. The secondary objectives of the study were to evaluate the effectiveness of the programme for, (iii) the rural and urban students separately, (iv) for boys and girls separately, and (v) for the individual institutions separately. The study was experimental in nature and employed the single group, i.e. pretest/post-test design. The sample of the study comprises 300 students (223 male and 77 female) of classes IX and X drawn from ten secondary institutions (six boys’ and four girls’) of Faizabad city and rural areas in the neighbourhood. For collecting data the investigator prepared programmed material containing 226 frames (95 on ‘movements of earth’, 68 on ‘air pressure’ and 63 on ‘major land forms’) following the standard procedure; and an achievement test in geography on the content of the programmed learning material. The error rate of the programme was 4.5 percent. The coefficient of validity of the achievement test was 0.49. The reliability of the test found by the method of rational equivalence was 0.91. The collected data were tabulated and analyzed using suitable statistical technique. The findings of the study were: 1. Students gained significantly in the knowledge of the subject by reading the programme. 2. The programme was equally effective in producing learning among the rural and urban population. However, the girls gained slightly more than the boys on this programme. 3. The mean gains for the different institutions varied to a fair extent but all these gains were highly significant. The educational implications of the study are: (1) The findings affirmed the effectiveness of the programmed material in inducing learning among the students. (2) The programmed
material can be effectively used to teach the content to the students of classes IX and X without any fear of failure. It could be used with junior students as well. (3) In view of the dearth of effective geography teachers, a careful preparation of programmed material on the difficult contents of geography could be tried.

Chaudhry (1968) investigated into the difficulties of class X pupil of Delhi high schools and higher secondary schools in solving geometrical exercises and interpreting identified the following difficulties lack of understanding and interpreting geometrical exercises, reasoning and interpreting the geometrical figures.

Collumbos (1989) A study to compare constant time delay and prompt fading to teach multiplication facts to learning disabled students was conducted by Collins (1989). Three students participated in the study. For one subject acquisition of multiplication facts was a function of fading technique approach. For the 2nd and 3rd constant time delay produced better results.

Copper (1979) studied the effects of adopted materials and teaching techniques an content learning by secondary school learning disabled students. The study examined the effects of auditory presentation and rewriting stores in the literature content learning of secondary school children. Experimental group performed at significantly higher level in these of rewritten stories.

Courson (1989) compared the effectiveness of short and long form of guided notes on social studies performance by seventh grade. The results revealed high scores.

Creite (2000) described a modification of a BINGO game to chemical nomenclature and specific application to alkenes. The use of games in the chemistry classroom can provide instruction, feedback practice fun and avoidance of misconception and remediation.

Debi, Meena Kumari, 1989. Developing and testing the effectiveness of programmed learning material in the syllabus of principles of education in the B.T. course of Gauhati University. Ph. D., Phil. Gauhati Univ. Objectives: (i) construct and standardize a criterion test in the principles of education for B.T. students, (ii) to construct, develop and validate programmed material in the ‘Principles of Education’,
and (iii) to test the effectiveness of the programmed learning material (PLM) over the traditional method of class teaching. Major Findings: (1) The PLM was found to be effective compared to the traditional method of teaching, in achievement in ‘Principles of Education’ in sub-tests 1, 2, and 3. (2) PLM was found to be effective for both the higher-level and the lower-level objectives when compared with the class-teaching method. (3) There was a significant difference between the post-test scores of the experimental group and those of the control group.

Desai (1986) developed a remedial programme for improving the language ability of children in standard IV. The major finding of the study was that most of the defects committed the first three years of the primary school consisted of errors on spelling, missing letters and faulty pronunciation, which can be minimized by remedial instruction.

Desai, K.G. (1986). Diagnosis of defects in language ability of children studying in standard IV and a try-out of a remedial programme for their correction. This project was undertaken to diagnose the defects in language learning of pupils of grade IV based on their learning during the first three years and to try out a remedial programme to correct the defects. The investigator first analyzed the contents of the language textbook of grade III and prepared a vocabulary list of difficult words and phrases as also the points of functional grammar as evidenced in the exercises given at the end of each lesson in the textbook. A pilot achievement test based on the difficult vocabulary and functional grammar that the pupils were supposed to have learnt till grade III was prepared. It included exercises on reading, speaking and writing. After scrutinizing the pupils’ answers, the final version of the test was prepared which revealed the difficult points of language which the pupils could not master at the end of grade III. The sample selected for the experimentation comprised 162 pupils of grade IV of two municipal and two private schools of Ahmedabad City. One of these schools was a good and reputed school, two were average and one was below average. The same test (final form) was again administered to these pupils at the end of the remedial work and the results were analyzed. A control group of 40 pupils was also kept parallel to the experimental group. No remedial programme was given to this control group. The findings were: 1. Most of the defects in language learnt during the first three years of the primary school comprised
errors of spelling, missing letters while writing, bad handwriting, faulty pronunciation, wrong forms of tenses in verbs, and of participles, and lack of knowledge of how to transform sentences. 2. It was observed that weak teaching or total neglect of teaching in some schools by teachers was the main cause of wrong learning. Added to this was the apathy of parents towards their wards’ education, particularly in municipal schools.

**Desai, R.M. (1986)**, A study of effectiveness of programmed learning strategy in teaching of physics in the eleventh grade. The main objectives of the study were (i) to prepare programmed material on heat in physics for pupils studying in standard XI (Science) in the schools of Bombay and Greater Bombay, (ii) to try out the programme on a sample of pupils and test its effectiveness as auto-instructional material, (iii) to ascertain the achievement of the pupils after learning physics through a teacher-made test, and (iv) to find correlations between the achievement of pupils and their abilities and intelligence. The study employed the experimental design. The method of cluster sampling was used for the selection of 200 pupils from four science classes of standard XI in Bombay and Greater Bombay. A pretest was administered on a small sample to ascertain the pupils’ previous knowledge. The difficulty level and items having ambiguous structures were modified and then a post-test was administered on the same sample of the population. The performance of the sample pupils on pretest and post-test was tested against their performance on the science attitude scale and their performance on the intelligence, etc. The tools employed in this study were (i) a Questionnaire for pupils to ascertain the pupils’ previous knowledge in science, prepared by the researcher, (ii) Dr. Ahuja’s Group Test of Intelligence, (iii) Science Attitude Scale, and (iv) S.S.C. marks obtained by the pupils in the subject of science at the S.S.C. examination of March 1984. The data were analyzed by using analysis of variance, F-ratio, product-moment coefficient of correlation and percentile ranks. The major findings of the study were: 1. Pupils took active interest in reading and learning through programmed material. 2. Pupils solved examples on conversion of scales and on coefficient of linear and cubical expansion of solids. 3. They found the programmed learning approach easy and interesting as each pupils had an opportunity to learn at his/her own speed and capacity. 4. The programmed learning approach proved better than the lecture method in the study of physics. 5. It was found that the pupils scoring high on the intelligence test also scored
high in the post-test and pretest and those having low scores on the intelligence test scored low on the post-test. The results were quite consistent with the concepts of intelligence and achievement. 6. The scores on the post-test had no bearing on the performance of pupils on the science attitude scale. Attitude to science had no direct effect upon the achievement of pupils in science.

Dhall, G.D., 2000 “Effective of the slow learner”. Sampling was selected from five schools. Finding: The teaching of students with low achievement with materials increased their achievement.

Dhanya (1999) conducted a diagnostic study to identify the difficulties experienced in learning algebra at the secondary level. The study revealed that the majority of the students faced difficulties in the case of items having more than one variable. Majority of the students had not understood the meaning of like terms and errors in concepts of like and unlike terms.

Dholakia, B.J. (1986), A study of the effectiveness of various strategies for improving reading comprehension in English of pupils of class IX in the context of certain variables. The objectives of the study were (i) to implement various strategies like (a) ReQuest procedure (b) Guided Reading Procedure (GRP) (c) REAP-technique (Read, Encode, Annote and Ponder technique) in teaching English to pupils of class IX in order to compare their effectiveness on reading comprehension, (ii) to compare the effectiveness of ReQuest strategy in developing reading comprehension of pupils with those pupils who did not study with any such strategy, (iii) to compare the effectiveness of GRP in developing reading comprehension with those pupils who did not study with any such strategy, (iv) to compare the effectiveness of REAP technique in developing reading comprehension with those pupils who did not study with any such technique, (v) to study the effectiveness of ReQuest procedure in developing reading comprehension in the context of study habits, I.Q., SES and entering behavior, (vi) to study the effectiveness of GRP in developing reading comprehension in the context of study habits, I.Q., SES and entering behavior, (vii) to study the effectiveness of REAP in developing reading comprehension in the context of study habits, I.Q., SES and entering behavior, and (viii) to compare the effectiveness of ReQuest procedure, GRP and REAP technique.
in developing reading comprehension in English of pupils of class IX. The experiment was carried out in four schools of Cambay. One class of each school was selected for the purpose of the experiment. In such class there were 40 students. The reading material was prepared keeping in view the language material of English for class IX. The entering behavior and terminal behavior tests were prepared. They served as pretest and post-test. The other tests that were used for collecting data were Study Habits Inventory by B.V. Patel, General Ability Test by M.T. Patel and SES scale by C.C. Pathak. Four equivalent groups were prepared on the basis of the score on pretest. The analysis of variance technique was used for testing the significance of difference between two means. Some of the findings were: 1. The ReQuest Strategy did not prove effective in improving reading comprehension. 2. The GRP proved to be effective in improving reading comprehension. 3. The REAP also proved to be effective in improving reading comprehension. 4. Pupils having good study habits and poor study habits did not differ significantly in reading comprehension when taught through ReQuest procedure. 5. Pupils having high I.Q. and low I.Q. did not differ significantly in reading comprehension when taught through ReQuest strategy. The ReQuest strategy group did not have a definite advantage over the traditional control group. 6. Pupils having good study habits proved better in reading comprehension when taught through GRP than pupils having good study habits and taught through the traditional way. 7. Pupils having low intelligence did not achieve significantly more through GRP than pupils with low intelligence and taught through the conventional method. Similarly, pupils having high intelligence did not achieve significantly more through GRP than pupils having high intelligence and taught through the conventional method. 8. Pupils belonging to the low SES group getting GRP did not achieve significantly more than pupils of the low SES group getting no such treatment. The same was the case with high SES pupils. 9. Pupils who scored high on entering behavior and who took GRP did better in the reading comprehension test than pupils scoring high on entering behavior and who received no such treatment. 10. The REAP technique did not prove superior to the conventional method in the case of students having poor study habits as well as in those having good study habits. 11. The REAP technique did not prove superior to the conventional method in the case of pupils having low intelligence, but proved superior in the case of pupils
having high intelligence. 12. The REAP technique did not prove superior to the conventional method in the case of pupils having low SES, but it proved superior to the conventional method in the case of pupils having high SES. 13. The REAP technique proved superior to the conventional method in the case of pupils scoring high on entering behavior but did not prove superior to the conventional method in the case of pupils scoring low on entering behavior. 14. The guided reading programme and the REAP techniques proved superior to the ReQuest strategy for improving reading comprehension.

**Donalson (1982)** studied the effect of verbal rehearsal and visual imagery on the performance of learning disabled and normal students. The sample consisted of 120 age matched LD and normal learners. The major finding was that neither trained treatment significantly enhanced student performance. The attempt to impose strategies was simply less effective than the learners' native strategies.

**Dubey, Om Babu, (1990).** A comparative study of a play-way self-learning technique and the traditional method of teaching Hindi at initial primary stage. Objectives: (i) To develop useful self-learning material for illiterate children, and (ii) to compare self-learning and traditional methods. Major Findings: (1) The experimental group of children was found to be superior to the control group in recognition of alphabets, in reading sentences and writing, (2) In the experimental group children from higher SES groups were found to be superior to children from low SES groups in the recognition of letters of the alphabet, (3) Age and sex were not found related to academic achievement in the experimental group, (4) Experimental group was more interested in learning, (5) Experimental group was not in need of help from teachers. This group took much less time in learning, (6) Play-way self-learning method of teaching Hindi was found to be much better than the traditional method.

**Duchovic (1998)** in his diagnostic study discussed two techniques, which have been utilized for five semesters in general chemistry courses. The techniques used were repackage system and writing exercises based on the laboratory portion of the course.
Both the techniques were found to be equally effective for learning chemistry at undergraduate level without any misconception and difficulties.

**Elias (1966)** conducted a study to identify the common errors committed by the pupils of standard VI in fractions using a diagnostic test. The major findings revealed that a great majority of students experienced difficulty in division of fractions especially with mixed fractions and multiplication and division.

**Fairbrother (1980)** conducted a study to compare different methods of teaching. Programmed instruction and two conventional approaches of instruction involving use of text. Materials and the lecture method were found to exhibit equal effectiveness in teaching the principles of general semantics to students of educational philosophy.

**Fajeta (1989)** a study was conducted to compare two instructional techniques sentence writing versus tutorial in teaching college students identified as learning disabled. Sample consisted of twelve colleges fresh students. Results revealed that sentence writing leaving strategy was effective in teaching college students.

**Francisco et al. (1998)** in their diagnostic study incorporated three teaching strategies such as discussions, concepts maps and co-operative learning to a fresh men chemistry cause, instead of usual lecture format. The study revealed that integration of the teaching strategies well be more beneficial for overcoming difficulties in chemistry.

**Garofalo, Denise A. (1992)** “Breaking the language barrier with audio”. A audio offers easiest and most efficient language instruction medium currently available to libraries. A number of self-learning foreign language audio programmes are listed.

**Gautam, P. (1986),** Development of programmed instruction in linear and branching styles and studying the performance in relation to creative thinking and level of aspiration. The objectives of the study were (i) to develop two programmes, one in linear and the other in branching format, in a segment of science, (ii) to study the performance of students on the criterion test in the selected unit of science, in relation to creative thinking and level of aspiration, (iii) to compare the efficacy of the linear and the branching programme formats with reference to performance on the criterion test, and (iv) to study the interaction effect of creative thinking, level of aspiration and style of
programming on the performance on the criterion test. The study was conducted by employing 2 X 2 X 2 factorial design. It involved two levels of creative thinking, two levels of aspiration and two styles of programming. The dependent variable was represented by scores measured through the criterion test. The study was conducted for a target population of class IX students studying in Hindi medium schools of Mandi district of Himachal Pradesh. A sample of 477 students was drawn from five randomly chosen higher/high schools of Himachal Pradesh. Out of these 477 students, 200 students were selected for eight treatment conditions so that each condition included 25 students. Linear and branching programmes on ‘Structure of Seed’ were developed. The programmes were prepared while keeping in view the subject matter, the learners’ entry behavior, and terminal objectives. The criterion test consisted of 92 items of varying formats and difficulty levels. The coefficient of reliability by K-R formula was 0.96. The validity of the criterion test was established by examining the test and the representativeness of the content structure in relation to the behavioural objectives. The other tools used in this study were Mehdi’s verbal and non-verbal tests of creative thinking and three levels of aspiration tasks, namely, letter cancellation test, digit symbol substitution test and computation task. The data were analyzed by employing ANOVA and ANCOVA. Some of the major findings were: 1. High creative performed significantly better than low creative on the criterion test. 2. Level of aspiration as a factor did not affect the performance of the students on the criterion test. 3. Both the programme formats were equally good in terms of their effect on the performance of the students on the criterion test in a segment of science. 4. High creatives performed significantly better than low creatives on the criterion test irrespective of level of aspiration. 5. The difference between the performance of high and low creatives on the criterion test was approximately the same when they were taught either through the linear programme or through the branching programme. 6. The level of aspiration did not affect the performance of students when they were taught either through the linear or the branching styles. 7. Creative thinking, level of aspiration and styles of programming did not interact mutually, hence the effect of creative thinking on the performance of students on the criterion test was independent of the level of aspiration and style of programming.
**GCPO (1981)**, A diagnostic study of the errors committed by the students of grade VI in oral reading of Hindi language and the remedial measures to improve upon them. The main purpose of the investigation was to diagnostically study the errors committed by Grade VI students in oral reading of Hindi language and to suggest possible remedial measures so as to improve upon the errors. The sample of the study consisted of ten students of Grade VI who had scored very low in the oral reading examination. Data were collected with the help of records of the students’ scores in half-yearly stages and appendices from the textbooks for Grades III, IV, V and VI which included content for all ability levels. The students’ oral reading ability was tested on the basis of results of tests for speed, fluency, punctuation, pronunciation, meaning, emphasis and stress, accent, and the like. The findings of the study were: (i) Twenty percent of the students had oral reading ability equivalent to that of the students of Grade V, 10 percent students had oral reading ability equivalent to that of the students of Grade IV, and the rest of them (70 percent) had oral reading ability equivalent to that of the students of Grade VI. (ii) There was no complexity in the use of the refined tests.

**Geetha (2002)** conducted a study to test the effectiveness of remedial programme to improve the word-recognition skill and reading comprehension skill of low achievers. The effectiveness of the remedial programme was studied by survey-cum-experimental method. The remedial programme developed in the study were found to be more effective than conventional lecture-demonstration methods.

**Gilberts (1999)** investigated the effects of self-monitoring instruction delivered to students by peers on the participation of students in general education setting. Peer tutor’s delivery of self-monitoring strategies was found to be accurate and effective and did not disturb the classroom environment.

**Gilchrist Peter James (1996)** “Improving Narrative coherence with learning-disabled and low achieving”. The present study investigated the effects of combining story grammar training and regulation procedures, on the narrative writing of grade five and six learning disabled and low-achieving students. Results indicated significant improvements in both the completeness and local conference of the student’s narratives.
Gomathy Ammal, M.S. (1982), A diagnostic study of the difficulties in Hindi spelling of High school pupils of Kerala. The aims of the study were: (i) to locate the areas of difficulty in spelling in written Hindi, (ii) to diagnose specific spelling errors committed, (iii) to suggest remedial measures to overcome the difficulties. Data for the study were obtained through the administration of graded spelling tests, speech recordings and observations. The sample comprised 500 pupils of secondary school classes drawn from all over Kerala. There were 250 boys and 250 girls in the sample drawn from urban and rural schools. Frequencies of errors were tabulated and compared. The main findings of the study were: (i) The major areas of difficulty were in conjuncts and in letters having similar shapes. (ii) Less mistakes were made in vowels, soft sounds and two-letter words. (iii) Most commonly misspelt words were dha, dya, dhya, khya and gha. (iv) Pupils found it difficult to differentiate between the kharas and atikharas and, therefore, mistook one for the other and committed mistakes. (v) Pronunciation and spelling errors were related.

Goraya (1979) conducted a diagnostic study in mathematics at primary level. The study revealed that most of the errors committed by students reflect the poor formation of decimal concepts due to inadequate background. The study also revealed that carrying in addition and borrowing in subtraction were considered difficult due to the present of decimal points.

Granth and Russel (1999) developed a card game for remedial teaching of nomenclature of the elements and their symbols in the first laboratory session of General chemistry. The game helped the students to learn and review the symbols of the element without much error.

Greene Erik Bryan (1999) “Effects of self instruction with the academic and related performance of middle school students with mild disabilities”. The purpose of the present study was to evaluate the effects of a self instructional procedure combined with the academic performance related behaviors of middle school students with mild disabilities. Four students from public middle schools were selected by teacher nomination and direct observation of behaviors. Results indicated that a functional relationship was established between on-task behaviour and the training procedure, and
was suggested between the teacher checklist performance in the general and special education setting improved for all students after training.

**Grill (1965)** “A comparative effectiveness and efficiency of the teaching of spelling by the use of programmed instruction method and a conventional textbook method”. The study was conducted in standard IV. The programmed text book method was efficient than the conventional text book method. More adequate provision for individual learning was provided in the programmed text.

**Guiler (1946)** identified the difficulties faced by new students in colleges in the use of sentence structure. The study revealed that the remedial instruction is effective in learning sentence structure.

**Gupta, Sheetal (1983)**, Factors underlying achievements in first language (Hindi), related classical language (Sanskrit) and a foreign language (English) with their implications for instructional methods, 1983. The aims of the study were (i) to prepare and standardize tests on three abilities, viz. comprehension of Hindi, English, and Sanskrit passages through reading and listening, ability to speak and spell words in these languages correctly and ability to know the rules of grammar of these languages, (ii) to study the distribution of scores of the tests of three languages separately, (iii) to study the degree of relationship between the different tests in each language, and (iv) to find which of the three abilities was responsible for the relationship between the tests. Four linguistic skills were selected for all the three languages, viz. (i) reading and understanding, (ii) hearing and understanding, (iii) speaking correctly, and (iv) writing correctly. A set of 15 tests, four each for English, Hindi and Sanskrit was prepared which comprised (i) a test on reading and understanding, (ii) a test on hearing and understanding, (iii) a test on speaking correctly, and (iv) a test on writing correctly. The last test had two parts – a spelling test, and a test on grammar and composition. The reliability and validity of these tests were estimated. The decile norms of all the tests were also calculated. Four hundred class X girls were randomly picked up. They were studying all the three languages from the educational institutions of Jammu province. The major findings were: 1. The distribution of scores in all the tests of English, Hindi and Sanskrit showed deviation from normality. 2. The relationships between the tests of each language were found to be
statistically significant. 3. In case of English language, the extracted two factors were identified as ability of comprehension through reading and skill of correct pronunciation. In case of Hindi language, the two factors were spelling and comprehension through reading. In case of Sanskrit language, the two dominant factors were grammar, and comprehension through reading. 4. The language abilities and skills influencing the achievement in the three languages taken together showed that hearing and understanding, and pronunciation played a dominant role. The first and second factors were identified as ‘comprehension through reading’, and ‘spelling’ respectively.

Gurber, Jorge (1990) “The influence of objective Self-awareness and Self-instruction on Human behaviour in task performance”. The experiment was conducted to explore the influence of objective self-awareness and self - instruction on behaviour is task performance with negative expectations. But people with objective self - awareness who used self - instruction showed significantly longer persistence that people who did not work self - instructionally.

Gyamani, T.C. (1996) “Promotion of spelling and peer – tutoring”. The sample comprised 20 girls in class XI. The result showed that the paired students performed better in spelling and the mean score of the experimental group significantly higher.

Habel (1950) studied the errors committed by new comers to colleges in arithmetic application and provided remedial teaching to overcome the errors.

Habel (1950) studied the errors committed by newcomers to colleges in Arithmetic application and provided remedial teaching to overcome the errors.

Harris (1981) investigated the effects of cognitive training and self-speech on task performance during problem solving among learning disabled and normally achieving children. The sample consisted of thirty learning disabled and thirty non-disabled children. The major finding was that the proportion of self-speech that was task relevant was significantly higher in cognitive training group.

Haslam and Treagust (1987) constructed a two-tier multiple choice treatment for the secondary school students. The result of the study revealed that a high percentage of
secondary students do not comprehend the nature and function of respiration and have little understanding of the relationship between photosynthesis and respiration in plants.

**Herbert Baskaran, S. (1995)** “developing a remedial instructional package to reduce the errors in sentence structure committed by the students in written English at the higher secondary level”. The sample comprised 165 students drawn from 95 urban schools and 70 rural schools. 45 formed the experimental group and 50 the control group. The result showed that students who had undergone the remedial treatment committed significantly less number of error percentages in all the five basic sentence patterns than the control group students. The experimental group subjects' percentage of errors in the post-test was significantly less than their percentages of errors in the pre-test.

**Herbert Baskaran, S. (1995)** developing a remedial instructions a package to reduce the errors in sentence structure committed by the students in written English at the higher secondary level”. The sample comprised 150 students drawn from 95 urban schools and 70 rural schools. The results indicated that the experimental group committed less number of errors than the controlled group and the remedial instructional package was very effective.

**Higgins (1982)** investigated the effects of peer – tutoring and independent study on increasing the spelling performance of eight adolescents in a self – contained class for students with learning disabilities significantly increase in spelling performance was found during treatment when retention was measured.

**Huges and MC Namaza (1970)** “Comparative study of Programmed and conventional Instruction”. The programme book classes took less time to complete the book then the conventional classes. The experimental classes scored significantly higher than the controlled grow.

**Inamdar J.A. (1981)** studied the effectiveness of the programmed learning strategy in subject of mathematics for standard VII. The result indicated that the mean achievement of the score of the boys and girls both from rural and urban areas were found superior in achievement to the students who were taught, by conventional method.
Indapurkar (1968) conducted a diagnostic study of errors in learning English of middle school pupils of Chandrapur district. The study revealed that verbal inflection errors were frequent in standard VI, VII and VIII.

J.M. Sharma (1966) developed programme on set High Secondary Board and compared its effectiveness with the lecture method of teaching of the same unit. He found that difference was not significant.

Jacob (1965) studied the errors committed by the students of standard VIII in addition and subscription Algebra. The study revealed that majority of students under study had difficulty with terms and unlike terms and showed difficulty to follow the symbolic representation of Algebra.

Jain (1984) conducted a diagnostic study of language errors in Sanskrit. The study was intended to identify the types of errors in Sanskrit, the causes, and to prepare a programme of remedial teaching. The study revealed that remedial programme was effective in reducing the errors in Sanskrit.

Jain, P.C. (1984), The diagnosis of language errors and a programme of teaching in Sanskrit. The study was intended to identify the errors in Sanskrit, their types, the causes of the errors, and to suggest a programme of remedial teaching. The objectives of the study were (i) to find out the nature of errors committed by students in Sanskrit in class X, (ii) to prepare tools for diagnosing the errors, (iii) to find out the fundamental causes of the errors, and (iv) to suggest a remedial programme on the basis of the nature and causes of diagnosed errors. Examination papers in Sanskrit of the Rajasthan Secondary Examination Board, Ajmer, for the years 1974 and 1975 were critically analyzed to find out the number of main objectives covered. After examining for defects, suggestions were given for improving question papers, for assessing students’ knowledge in Sanskrit. Answer scripts of students who appeared in the 1974 and 1975 examinations were examined and classified on the basis of marks and also on the basis of sex, location of school (rural/urban), type of school (government/private) and category (coeducational/ single sex). Ten diagnostic tests were tried out and opinions of headmasters, teachers and students taken for causes of errors after which ten remedial work exercises were constructed and administered for improving knowledge of Sanskrit. All tools were
developed by the investigator. They were ten diagnostic tests, students’ questionnaire to find out the causes of errors in Sanskrit, teachers’ questionnaire to find out the causes of errors committed by students in Sanskrit and a questionnaire for headmasters for finding out the causes of students’ errors in Sanskrit. The major findings were: 1. Since teaching of Sanskrit as a third language was not according to the syllabus, the objectives were not achieved. 2. The question papers did not cover all units and the emphasis was not proportionate; though there was great emphasis on translation of Sanskrit prose into Hindi, written expression was not adequately tested, with undue emphasis on recall in grammar. 3. Students’ knowledge of grammar was at an elementary level and, therefore, their mistakes were mainly in grammar; they were able to analyse but not synthesize. 4. Since most Sanskrit teachers were untrained, they were not able to create students’ interest in the subject either through their teaching or other activities in the school. 5. Lack of practice in pronunciation in the class, absence of homework and inadequate home support also resulted in poor performance. 6. Adoption of the translation method and poor techniques adopted by teachers of the subject, and inadequate study by students resulted in low achievement. 7. The duration and total time allotted for the teaching of Sanskrit was inadequate. 8. Since marks obtained were not included for awarding grades, students did not take much interest in the subject. 9. The headmasters and teachers felt that co-curricular activities were not organized because of the students’ lack of interest in the subject and consequently a suitable environment for learning the language could not develop.

Jaleel (1975) conducted an experimental study to test the effectiveness of diagnostic approach in teaching mathematics in standard VIII. The study conducted on a sample of 440 students revealed that diagnostic approach in teaching mathematics was effective for the total sample and sub samples.

Jasmine (1994) studied the difficulties experienced by the pupils of standard III in computation, by a diagnostic test. The study revealed that the level of attainment of students was very poor for the division of four digit numbers with one digit number.

Jayaleksmi (1994) studied the difficulties in computations experienced by the students in standard IV. The study revealed that out of the fifty teaching points studied,
level of attainment is very good in the case of six teaching points, good in the case of twenty three teaching points, satisfactory in the case of fifteen teaching points, poor in the case of five teaching points and very poor in the case of only one teaching point due to the lack of understanding the basic concepts of computation.

Jayasree (1997) identified the difficulties experienced by the pupils of standard VIII in expending algebraic expression using identities with the help of a diagnostic test. The study revealed that the level of attainment is poor in the case of classification of open and closed sentences, finding the always true sentences and product numbers using identities. The study also revealed that there is no mastery of the rules of signs and many pupils do not seem to have a clear grasp of the identities.

Johnson, Leannallen (1993) “The Effects of goal setting and self-instruction on the Acquisition, Maintenance, and Generalization of Reading Comprehension Strategy by Learning disabled studies”. Two self - regulatory procedures that are hypothesized to foster maintenance and generalization are goal-setting and self-instructions. This study examines the unique and combined contributions of these two procedures with reading comprehension strategy fifty-two S D students were randomly assigned to four instructional groups. (a) Strategy instruction (b) strategy instruction with goal -setting (c) strategy instruction with self-instruction (d) Strategy instruction with both goal setting and self instruction while retelling scores significantly improved for all groups following instruction and gains were maintained after four weeks the expected differential effects were not found likewise all groups showed similar significant gains on generalization to the classroom.

Jose (1990) studied the difficulties experienced by vocational higher secondary students of Kerala in learning Botany. The study revealed that VHSE students experienced difficulty in the skill of hierarchical learning and in attaining concept of Botany.

Joshi, V.G. (1975), A study of errors in written English among pupils of standards V to VII. The main objectives of the study were: (i) to find out the typical errors committed by pupils in written English, (ii) to diagnose the causes of these typical errors, and (iii) to formulate remedial measures for preventing the typical errors. The
study was confined to pupils studying in Marathi-medium schools in Ahmednagar district. The written work scrutinized was limited to answer scripts of the annual examination. The sample of schools selected included both girls’ and boys’ schools. Answer scripts of pupils of Standards V, VI and VII in these schools were selected through the random sampling procedure. The answer scripts were closely scrutinized and the errors were listed under twelve different categories. The frequency of errors under each category was calculated. Probable causes of errors were arrived at through discussions with the concerned teachers in respective schools. The major findings of the study were: (i) Errors concerning speech, number and spelling were committed by 90 percent, 48 percent and 45 percent pupils, respectively. (ii) Errors of conjunction and case were committed by 2 percent and 6 percent pupils, respectively. (iii) The three categories of errors having the highest frequency were those of spelling, tense and number. (iv) Out of the four types into which the error category ‘spelling’ was divided, errors of omission and replacement were the most frequency. (v) Among the errors of tense, almost all were caused by irregular verbs. (vi) Errors regarding number gradually decreased as the pupils progressed from Standard V to Standard VII. (vii) Among the errors related to the use of preparation, 86 percent were caused by the use of wrong preparations while the remaining 14 percent were due to the non-use of preposition.

Joshi, V.G. (1985), Scrutiny of errors in written English and remedial programme. The major objectives of the study were (i) to make a historical review of the position of English in India since the establishment of the East India Company in 1600 A.D., (ii) to make a review of the position of English in India after the attainment of Independence, (iii) to make a historical review of the teaching of English in Maharashtra since 1815 A.D., (iv) to make a historical review of the teaching of English in Maharashtra after Independence, (v) to decide the general importance of the English language at the international as well as the national level, (vi) to observe the present position of the teaching of English in Maharashtra, (vii) to study the influence of socio-economic and educational status of the families of pupils under investigation on the achievement of pupils, (viii) to locate from their answer-books common errors in English committed by pupils of standards V to X, (ix) to classify errors with their sub-types standardwise, (x) to find out the frequency of each sub-type of each error from answer-
books standardwise, (xi) to find out the number of pupils committing each sub-type of each error in each standard, (xii) to prepare and execute the remedial programme for the pupils of standards V to X as the sample selected for the action research programme, (xiii) to verify the effect of the remedial programme and to decide whether the errors in writing were reduced, (xiv) to compare the achievements of boys and girls in respect of minimizing the errors, and (xv) to decide whether there was any difference in the benefit accruing from the remedial programme in the case of different pupils belonging to various socio-economic cultural groups. Pupils learning English as a third language in the Marathi medium schools and coming from various strata of the society were selected for the action-research programme. The classes were boys’ classes, girls’ classes and mixed ones. All the pupils of grades V to X were selected from different schools. This was an action research programme. The nature of data collected by the researcher included historical review, survey of pupils, study of syllabi of English and study of question papers and answer-books in English. The sources of data collection included surveys of educational research and reports of various committees and commissions. In the case of each grade, the answer-books of a particular examination were first collected, errors analyzed and recorded, and a remedial programme prepared and executed. The effect of the remedial programme was studied. The influence of socio-economic and cultural conditions of the family background of the students was studied. The general conclusions were: 1. Pupils belonged to the middle class group of the society. Some pupils had to help their parents in their occupations. Some of the pupils were first generation learners. 2. The number and quality of errors were reduced after the introduction of the remedial programme which included correction of spelling, syntax, written expression and drilling.

Joshy (1985) conducted a study to classify errors with their sub-types and to develop the remedial programme. The study revealed that the number and quality of errors were reduced after the introduction of the remedial programme which included correction of spelling, written expressions and drilling.

Joy (2002) conducted a study on diagnosis of errors and development of radical materials for teaching chemistry at vocational Higher Secondary Level. The investigator administration a two –tier diagnostic test and developed remedial teaching materials on
selected difficult topics based on the Diagnostic test. Effectiveness of remedial teaching materials was tested by Experimental cum-survey Method. The study revealed that Remedial teaching was superior to lecture method in immediate post-test and delayed memory achievement in chemistry.

**Kagathala, A.B. (1986),** Investigation into the effectiveness of linear programmed material and branching programmed material in the subject of commerce – Standard XI, in relation to certain variables. The objectives of the study were (i) to develop programmed learning material in commerce for higher secondary students of standard XI, (ii) to compare the achievement in commerce of students learning through linear and branching programmed learning material, and (iii) to study the achievement of learners through the linear and branching programmes controlling personality traits such as emotional stability, suggestibility, radicalism, and self-dependency; adjustment such as social, vocational, family, and personal; social maturity, socio-economic status and general ability. The investigator prepared linear programmed and branching programmed material on two units of commerce, viz. transport service and banking service. The equivalent group technique was adopted with 138 given branching programmed material. The sample was selected from the nine different schools at random. The same students were given the Test of General Ability by Pallavi Patel, SES Scale by Patel and Vora, Social Maturity Scale by J.I. Vora, Personality Inventory by A.S. Patel and Adjustment Inventory by Patel and Parikh. Analysis of covariance was used for the purpose of testing the hypotheses. Some of the major findings of the study were: 1. The branching programmed learning material (PLM) produced better results than the linear PLM. 2. The branching programmes, on controlling pretesting and SES, proved superior to the linear PLM. 3. The branching programmes, on controlling pretesting and social maturity, proved superior to the linear one. 4. The branching programme, on controlling pretesting and I.Q. proved better than the linear PLM. 5. The branching programme, on controlling pretest and emotional maturity was found better than the linear PLM. 6. The branching programme on controlling pretest scores and suggestibility proved superior to the linear PLM. 7. The students who read the branching programme were found significantly superior to the group of students who read the linear PLM when the groups were controlled on pretesting and self-dependency. 8. When the groups were controlled on
pretesting and radicalism, the group taking the branching programme was found superior to the group who took the linear PLM. 9. When the groups were controlled on pretesting and social adjustment, the group taking the branching programme proved superior to the group taking the linear PLM. 10. When the groups were controlled on pretesting and vocational adjustment, the groups did not differ significantly. 11. The group taking the branching programme did not differ significantly in achievement from the group taking the linear programme when the group were controlled on pretesting and educational adjustment. 12. The achievements of the groups taking the branching programme and the linear PLM were at per when the groups were controlled on pretesting and personal adjustment. 13. The branching programme was more effective than the linear one when the independent variables pretesting and family adjustment were controlled. 14. The girls were benefited more by programmed learning material than the boys when pre-achievement was controlled. 15. The matched group on pretesting did not differ significantly in achievement when they studied through the branching programme. Sex did not influence learning through the branching programme. 16. The male students did not differ significantly in achievement when they learnt through the two different programmes. 17. The girls did not differ significantly in achievement when they learnt through the two different programmes.

Kalacherry, K.A. (1987), Preparation and experimental try-out of programmed instructional material in the syllabus of chemistry prescribed for class VIII (SSC) in Maharashtra State. The major objectives of the study were (i) to prepare programmed lessons on the prescribed topics of the chemistry syllabus, (ii) to try out the programmed instructional materials, (iii) to find out the error rate and time factor, (iv) to finalize the programmed material for actual use, and (v) to determine the effectiveness of the programmed instructional material on the basis of the error rate. The programmed instructional material was developed in the linear style for the chemistry syllabus of grade VIII, consisting of 11 units for the whole year. The developed instructional material was tried out on five students of grade VIII representing both the sexes. The material was modified on the basis of the feedback received through this individual testing. The edited programmed instructional materials were tried out on 105 students of class VIII of St. Anne’s Girls High School in the classroom situation. On the basis of
group testing, the error rate, programme density and time taken by the students to go through the programme were estimated. Finally the programmed instructional materials were tried out in four schools in the natural setting. The sample for the field testing consisted of 200 students out of which 40 were boys and 160 girls. On the basis of the field testing, the error rate, time and programme density were studied. The effectiveness of the materials was judged against the external criterion for validation (90/90 standard on the criterion test). The major findings of the study were: 1. About 83 percent learners were able to respond correctly to 83 percent of the frames. Through 90/90 standard could not be reached, the attainment was considered to be satisfactory. 2. The value of measure of density (T.T.R.) for the whole programme was found to be 0.36. It was found that a few students who scored usually below 50 percent in the traditional system, scored above 85 percent through the use of programmed material.

Kapadia, S.T. (1988). Development and try-out of programmes for remedial teaching in English for the post HSSC level. Objectives: (i) To identify grammatical errors in the written expression of students who have passed the Higher Secondary School Certificate (HSSC) examination and who were studying in the first year degree class of arts, science or commerce faculties (post-HSSC level), (ii) to locate areas of high frequency of errors in English, (iii) to select areas of errors for remedial teaching in English on the basis of frequency and suitability, (iv) to develop programme learning material (PLM) for remedial teaching in the selected areas of errors in English, (v) to observe effectiveness of the programmes for remedial teaching (PRT) in English on subgroups from urban and rural areas in terms of their scholastic ability, and (vi) to observe effectiveness of PRT in English in respect of time factor. Major Findings: (1) Programme I (pronoun) was found very relevant and had the instructional potential as aimed at. (2) Programme II (concord) consisting of 100 frames was more difficult to learn than the first one, concord could be mastered not only through the production of the language but more so by listening and reading. (3) Programme III (tenses) having 108 frames – the largest chunk of the programme material – required revision and restructuring of the frames. (4) Programme IV (sequence of tenses) was the most complex of all the four programmes. (5) From pre-test to post-test, the mean score always increased.
Kaur, R. (1981), An inquiry into the effectiveness of self-instructional audio cassettes in developing teaching skills among student-teachers in a three phased study. The objectives of the study were: (i) to develop instructional materials for the skills of probing, questioning, explaining and illustrating with examples, (ii) to prepare audio cassettes of the instructional materials prepared by the investigator for the above-mentioned teaching skills, (iii) to develop the skills of probing, questioning, explaining and illustrating with examples through self-instructional audio cassettes, and (iv) to examine the effect of self-instructional audio cassettes on the general teaching competence of student teachers. The sample consisted of thirty-two student-teachers taken from Dev Samaj College of Education for Women, Ferozepur City. The tools used were Raven’s Standard Progressive Matrices, Socio-Economic Status Scale (Kuppuswamy), Junior Index of Motivation (Frymier), a questionnaire for study-teachers, self-instructional audio cassettes, Baroda General Teaching Competence Scale prepared at the CASE, and observation schedules for the skills of probing, questioning, explaining and illustrating with examples. The important findings of the study were: (i) Teachers of both the experimental groups made continuous progress component-wise and as a whole in the skills of probing questioning, explaining and illustrating with examples. (ii) The traditional techniques of teaching also helped continuous progress in the performance of student-teachers. (iii) Both the techniques of training – traditional and micro-teaching – were effective in improving general teaching competence of student-teachers. (iv) The experimental groups exposed to both the treatments showed better performance than the control group exposed to the traditional technique only. (v) The student-teachers could effectively integrate the teaching skills acquired in simulated conditions into their actual classroom teaching. (vi) The self-instructional audio cassettes were effective for developing different teaching skills. (vii) Immediate, pinpointed and self-feedback through audio cassettes was an effective way of improving the performance of student-teachers in the use of different teaching skills.

Kim (1998), compared two instructional methods for teaching spelling to elementary students with learning disabilities to find out the most effective and expedient way to increase the overall spelling performance. The treatment group was taught using rule based strategy instruction focusing on teaching students in spelling rules. The control
group was taught in the traditional way that provided an array of spelling instructions. The overall performance indicated that rule-based strategy instruction focusing and teaching students in spelling rules was significantly effective in increasing the spelling performance.

Kullick (1982) conducted meta-analysis of 48 studies of to integrate the findings. Results indicated that programmed instruction was equally effective to conventional methods.

Kumar, S. (1978), To prepare programmed learning material in Hindi grammar and to investigate into its effectiveness. The study was an attempt to prepare programmed learning material (PLM) in Hindi grammar covering the course prescribed for high school examination of the Board of High School and Intermediate College, U.P. The objectives of the study were: (i) to prepare PLM in Hindi grammar for high school classes, (ii) to teach Hindi grammar to high school classes and to enable the students to recognize, define, analyse, synthesize and apply the matter thus learnt through PLM, (iii) to compare and contrast the achievement of students learning through the PLM and the traditional ways, and (iv) to generalize the results on the basis of students’ achievement and to see the efficacy of PLM. The sample of the study was 400 students taken from rural and urban population. Control and experimental groups were formed on the basis of their previous achievement. A three-dimensional design was prepared. Dimension A represented the two treatments, programmed versus traditional. Dimension B represented the sex of the learner. Dimension C represented the population on which the experiment was conducted, urban and rural. Thus, eight groups were formed for conducting the experiment. PLM was prepared along with the criterion test and five topics were covered, namely, Noun, Adjective, Number, Samas and Sandhi. The findings of the study were: (i) The performance of the experimental group in all the five programmes was significantly high in comparison to that of the control group. (ii) Results ensured that PLM had a direct bearing on the learners, they understood things more clearly with the programmes. (iii) The group treated with PLM had superior performance in comparison to the group which was given the traditional treatment. (iv) The sex factor had almost no impact on students’ learning. (v) Girls and boys had the same ability to understand whether they learnt by
PLM or from the teacher in a traditional way. (vi) The students of rural area did better than those of urban area.

**Kumar, Surender and Susumu Harizuka (1996),** “Metacognition and achievement through cooperative learning”. The sample of the study comprised 60 students of Grade VI. The finding indicated that the effectiveness of cooperative learning based approach the improvement of metacognitive knowledge of the students was more than of conventional approach of teaching learning.

**Kumari (1964),** studied the difficulties experienced by the pupil of standard VII in fundamental operations with decimals. The study revealed that many of the common type of errors committed by students were either due to lack of mastery of concepts or due to insufficient practice in operation with decimals.

**Kumari, Nanda P. (1992),** A diagnostic study of errors in written Hindi of secondary students of Central schools in the Madras region. Objectives: (i) To identify major errors in written Hindi of Central school students in standard X, (ii) to classify the errors into major functional grammatical skills, (iii) to study the relative proportion of the errors with a view to classifying and arranging the major areas in order of their importance, and (iv) to determine the source and cause of errors identified. Major Findings: (1) Percentage incidence of errors above 75% (very high) in the total sample was found in six grammatical areas, viz. parsing (97.5%), punctuation (88.7%), clauses (84.07%), one word (81.69%), analysis and synthesis (80.86%) and compounds (77.65%). (2) Significant difference existed in the mean scores of incidence of errors between Kerala students and Tamil Nadu students, Hindi students and non-Hindi students, high-SES, average-SES, and low-SES students (taken in pairs), high-achievers; average-achievers and low-achievers in Hindi (taken in pairs), under achievers, normal achievers and over achievers in Hindi (taken in pairs), and boys and girls. (3) Percentage of errors had significant negative correlation with Hindi language achievement, intelligence, and socio-economic status.

**Kumary (1983)** conducted a study on the procedures adopted and the difficulties experienced by pupils of standard VI in solving verbal problems in arithmetic. The study
revealed that the pupils experienced difficulty in understanding the verbal problems: meanings of items in the problem and solving problems having more than one part.

**Kwan-Ching, Jane Yinleng (1993)** the Effects of pairing training and Gender on Second Grader's content mastery of Hypermedia Science lesson: A Factorial Experiment*. Results from the 2x2x2 A N C O V A showed that untrained subjects who worked alone scored equally as well as trained subjects who worked alone or with a partner on a test of content - knowledge. Untrained subjects who worked in pairs score significantly lower when compared to all the other groups. It was concluded that individual subjects in this study did not require training to learn content in a hypermedia science programme. However when subjects matter presented on the computer and laserdisc.

**Lee (1992)** investigated the effectiveness of novel teaching method for helping students solve one step mathematics word problem. The sample for the study consisted of 4th, 5th, and 6th grades of mathematics. The result revealed significantly better scores in the skill of choosing correct operations in subtraction and addition word problems.

**Lenz (1983)** conducted a study on the effect of advance organizer on the learning and retention of learning disabled adolescents within the context of a cooperative planning model. The investigator examined whether advance organizers important versus unimportant information on selected tasks. The sample consisted of 105 LD 114 ND students. Results indicated that advance organizers could exert a positive qualitative influence on the learning of L.D. adolescents.

**Lowe (1992)** investigated the effectiveness of a peer mediated constant time delay procedure to teach spelling to college students with learning disabilities. Results indicated that peer mediated constant time delay procedure was effective in teaching spelling to the tutors. The tutoring experiences were less effective in teaching spelling than the direct instruction model.

**Luke (1970)** studied the difficulties faced by Xth standard students of Kollam district in learning English Grammar. A diagnostic test was administered to 1600 pupils.
of standard Xth. The study revealed that the majority of the students under study had
difficulties with English Grammar.

**M. Shah (1966)** prepared programmed instructional for standard VII and studied
the effectiveness under classroom conditions for high and low achievers. Results
indicated the superiority of programmed method over the conventional method both in
terms of learning time and achievement scores.

**M.M. Sharma (1966)** applied the technique of programmed learning in teaching
Algebra to a class with the help of roll up board and compared the programmed text.
Finding showed that the achievement of both groups were equally good.

**M.M. Sharma (1966)** of Government Jury School Rajasthan compared the
programmed method with conventional method in teaching Algebra. The programme
proved effective as compared with conventional method, experimental group showed
better retention than the controlled group.

**M.S. Shalis (1963)** developed a programme on solving equations for class vi and
compared the results against conventional lecture method. His finding confirmed the
effectiveness of the programme. The students who learnt with the programme alone
achieved more in less time.

**Maccini (1998)** investigated the effects of an instructional strategy within a
graduated sequence involving the use of algebra lab gear on the representation and
solution of the representation and solution of problem solving skills encompassing
integer number for secondary students with learning disabilities. Results showed that the
abilities to apply problem solving skills involving following instruction at the concrete
semi – concrete and abstract levels.

**Mahajan (1994)** investigated the effects of enhancing cognitive function through
training in verbal-nonverbal tasks. The sample consisted of thirteen students of grade IV.
Results of the study revealed that training in verbal and nonverbal task had positive
significant effect on enhancing cognitive functions. Use of verbal prompts and cues
helped the fourth grade children improve their performance from pretest to post test in
classification and categorization.
Malaikkani (1992) developed a remedial package for the teaching of English consonants at Higher at Higher Secondary level. He studied the effectiveness of remedial teaching package over traditional method. It was found that English consonants using the remedial package was more effective than traditional method of teaching.

Mathew (1985) identified the difficulties in learning chemistry experienced by educationally backward students at pre-degree level. The result of the study revealed that the pre-degree students experienced a high level of difficulty in learning chemistry and this is acute in the case of educationally backward students.

Mehring (1981) investigated the interaction among three cognitive styles and aptitude variables, (vocabulary, field dependence-independence and locus control) and a learning strategy that employs self questioning to teach main ideas and relevant details of reading passages, written and reading achievement to junior high school LD students. The self-questioning strategy was effective at improving the ability to recall the main ideas and details regarding reading achievement.

Mohammad (1986) conducted a study to identify the errors committed by the pre-degree students in written English and found that the majority of the students committed errors in tenses, preposition, nouns and relative clause, passive voice and auxiliary verbs.

Mohammed, T.K. (1986), A diagnostic study of errors in the written English of pre-degree students. The objectives of the study were (i) to identify the major errors in the written English of pre-degree students, (ii) to classify the errors into major functional and grammatical areas, (iii) to study the relative proportion of errors with a view to classifying and arranging them into the major areas in the order of their importance, (iv) to determine the source or cause of the errors identified, and (v) to suggest corrective measures and remedial programmes. Data required for the study were collected using the Diagnostic Test of Basic Language Skills which was developed by the investigator, Intelligence Test and General Data Sheet. Besides these tools, teachers and experts in the field of teaching English were interviewed and consulted. A sample of 700 subjects was selected from the population of the second year pre-degree students (+2 stage) of the colleges affiliated to the University of Calicut. Proportionate stratified random cluster
sampling technique was used to ensure greater representation of various categories of the total population. The whole sample was divided into 29 subgroups on the basis of 12 variables which were hypothesized to influence the proportion of errors. Hence, the subjects were divided into three categories, high, low and average, on the basis of the scores of achievement, socio-economic status, and domestic facilities for learning English by using statistical techniques. The three categories of discrepant achievers (over, normal and under) were also identified using the regression equation method. The major findings were: 1. The total sample committed errors in 17 grammatical areas. They were (i) tenses (82.28 percent), (ii) prepositions (81 percent), (iii) noun and relative clauses (79.14 percent), (iv) passive voice (69.28 percent), (v) auxiliary verbs (62.85 percent), (vi) concord (57.42 percent), (vii) auxiliaries in interrogatives (51.14 percent), (viii) adverbials (48.57 percent), (ix) adverbial clauses (48.28 percent), (x) spelling (46.42 percent), (xi) quantifiers (46.28 percent), (xii) punctuation (46.14 percent), (xiii) adjectives (43.28 percent), (xiv) verb patterns (42.28 percent), (xv) articles (41.42 percent), (xvi) conditional clauses (39.28 percent), and (xvii) pronouns (25.71 percent). 2. Significant differences between the following subgroups taken in pairs were found to exist in the mean scores of errors in all the grammatical areas taken together: (i) High SES and average SES, (ii) good and average colleges, (iii) high achievers and average achievers, (iv) high achievers and low achievers, (v) English medium and Malayalam medium, (vi) first grade and second grade colleges, (vii) good and poor colleges, (viii) non-science and science, (ix) high SES and low SES, (x) government and private colleges, (xi) over-achievers and normal achievers, (xii) high facility and low facility, (xiii) co-educational and women’s colleges, (xiv) over-achievers and under-achievers, (xv) rural and urban colleges, (xvi) high facility and average facility, (xvii) average facility and low facility, (xviii) average achievers and low achievers, (xix) boys and girls, and (xx) average and poor colleges. 3. Twenty-two out of 29 subgroups taken in pairs were found to have significant differences in the percentages of the incidence of errors in different grammatical areas. 4. Significant differences in the mean scores of errors existed between each of the 21 pairs of the subgroups in some grammatical areas. 5. It was found that there existed negative correlation between errors and achievement in English (r = -
0.49), errors and intelligence ($r = -0.45$), and errors and domestic facilities for learning English ($r = -0.15$).

**Moses (1998)** conducted a study on the structural drill in remedial teaching. The study identified that the most frequently occurring grammatical error in the written work of students is the error concerned with subject verb agreement. The study concluded that structural drill have an important role in remedial teaching and the structural drill must be suitably modified to individual learners needs and specific pedagogic contexts.

**Nair (1980)** conducted a diagnostic study of the difficulties of university entrants in the use of chemical equations. The necessary data were collected by administering a diagnostic test in chemical symbols, formulae and equations. The study revealed that the nature and extent of errors committed by the students in the learning of chemical symbols, formulae and equations is influenced by certain selected socio-personal factors.

**Newben (1998)** investigated the effect of service delivery alternatives on the efficiency of instructional strategy taught to students with learning disabilities. A paraphrasing strategy was implemented. The result indicated that strategy instruction improved the performance of students with learning disabilities. Peer tutoring is considered as one of the effective techniques of helping students in their studies. Would the learning disabled be benefited?

**Newman (1998)** conducted a study on diagnosing maths leavening disabilities and recommended practices to overcome the disabilities identified. The study is concerned with the diagnosis Primary School children experiences in Mathematics. The study revealed that aside of reading difficulties, in mathematics represent the greatest single source of learning difficulty experienced by Primary school children.

**Oad (1980)** conducted a diagnostic study of language errors and developed a programme for remedial teaching Hindi at school level. The study revealed that the number of errors decreased from class VI to VIII and increased in class IX and X. The study also revealed that the errors can be rectified by effective remedial teaching programmes.
OAD, L.K. (1980), The diagnosis of language error and a programme of remedial teaching in Hindi. The major objectives of the investigation were: (i) to identify the errors in written Hindi, (ii) to classify the errors, linguistically, (iii) to analyse the influence of local dialects on such errors, and (iv) to examine the effect of remedial instructional material. Five independent random samples for each of the five dialectic regions of Rajasthan were selected for the study. Nine main categories of errors were selected for indepth study. There were matras, nasal consonants, vowels and consonants, punctuation, syntax, grammar, etc. Each dialectic group showed its own characteristic errors. The study covered about 2,500 answer-books of Classes VI to X in Rajasthan. Tools for pretesting and grading the errors were developed. Remedial materials for different types of errors were also developed. One major finding of the investigation was that the number of errors decreased from Classes VI to VIII and then increased in Classes IX and X. The pretest and posttest scores were compared separately for errors related to vowels, consonants and sentence construction. The remedial material was found to be effective in reducing the frequency of errors.

Owen and Hall (1965) “A comparison of programmed instruction and lectures in teaching of Electric cardiographic”. The study found that the programme benefited better low achievers and those students whose mother tongue was not English. It was also noticed that women learned better from lectures and men from the programme.

Patel, B.N. (1983), An investigation into the readability levels of different writing styles of the passages and the reading ability of pupils studying in different grades as predictors of cloze scores. The objectives of the study were (i) to select the appropriate reading passages to be used in grades VII and IX, (ii) to determine the writing style of the passages selected on a judgemental basis, (iii) to assess the readability of the selected passages by using Aukerman’s formula, (iv) to select reading passages from different writing styles having uniform readability levels, (v) to rewrite the selected passages into ‘easy’ and ‘difficult’ versions, (vi) to prepare cloze tests of the passages having different writing styles at three readability levels, (vii) to administer the cloze tests to good and poor readers of grades VII and IX, (viii) to test the effect of four independent factors – writing style, readability levels, grades, reading ability – and their interactions separately.
in relation to cloze scores, (ix) to assess the functional relationship between the writing styles of the passages and the cloze scores of the pupils, and (x) to assess the functional relationship between the readability levels of the reading passages and the scores of the pupils on the cloze tests. The reading ability test standardized by Satish B. Jain for pupils of class VII and the reading ability test by Trivedi and Patel for pupils of classes VIII, IX and X were used. Besides these, Cloze Tests were prepared on the paragraphs selected by keeping in view the writing styles, namely, narrative, descriptive and expository. The reliability of the tests used for collecting data were 0.94 and 0.91 and 0.89 and 0.71 respectively. Initially the data were collected from 1580 pupils of classes VII and IX. In all, 790 students from each grade were selected as the sample. The passages of different levels of readability – easy, average and difficult, were written and 2 x 2 x 3 x 3 factorial design was used. Analysis of variance was used for testing the significance of the difference between means. The major findings were: 1. Writing style was one of the important predictors of the pupil’s cloze scores. Narrative style was comprehended more freely than the expository style. In fact, expository style was the toughest of all the three styles. Good readers did better across the writing styles. 2. Among the different levels of readability, ‘easy’ level was most suited to both the categories of the readers. Between easy and average difficulty there was no significant mean difference. 3. The grade of the pupils was one of the important predictors of pupils’ Cloze scores. Grade IX pupils were found to be better in comprehending the reading material than grade VII pupils. 4. Reading ability turned out to be the most powerful and dominant predictor of the cloze score. Reading ability even surpassed the other two important predictors of grade and writing style. 5. Out of seven predictors of cloze score, three turned out to be of an interactive nature. These were readability levels X grade X reading ability accounting for 9.36 percent of variance, readability levels X reading ability accounting for 5.26 percent of variance, and writing style X reading ability accounting for 3.51 percent of variance in the structure of cloze scores. The educational implications are: (i) The reading ability and the grade of the pupils should be taken into account while editing the reading materials for the text-books, (ii) The writing style of the reading materials should be selected in such a manner as would result in greater comprehension on the part of the pupils. In the lower grade, narrative style is most preferred while in the upper grade, expository style is
recommended. (iii) The reading materials of the textbook should be commensurate with the reading ability of the pupils. A single textbook in a subject in any grade would prevent its comprehension by poor readers. More than one textbook in the subject should be prepared at different levels of readability.

Patel, L.P. (1985), Impact of reading improvement programme in Gujarati on reading comprehension of pupils of class VII in the context of some psychosocio variables. The objectives of the study were (i) to prepare a reading improvement programme in Gujarati for pupils of class VII, (ii) to study the impact of the reading improvement programme (RIP) on reading comprehension of pupils coming from different SES groups and with different mental ability and (iii) to study the impact of the reading improvement programme on reading speed of pupils coming from different SES and different mental ability groups. The equivalent group technique was adopted for studying the impact of the reading improvement programme on reading comprehension and speed of reading. The groups were equated on the basis of scores made by pupils on the reading comprehension test in Gujarati having reliability 0.85 by the test-retest method and 0.87 by the split-half method. The test had a good concurrent and concept validity. The experiment was carried out on 247 students of six experimental schools and 264 students of six control schools. Analysis of covariance was used for comparing the means. Analysis of variance was used for studying the impact of the reading improvement programme on reading comprehension in the context of SES and I.Q. The reading improvement programme had exercises on letter perception, word perception, vocabulary, sentence comprehension and paragraph comprehension. The major findings were: 1. The mean difference of the reading comprehension scores of students of the experimental and control groups was highly significant and it was in favour of the experimental group. There was an increase of 32.19 percent in reading comprehension scores of pupils of the experimental group as a result of RIP. Similarly, the mean difference of reading speed of students of both the groups was significant and it was in favour of the experimental group. The gain in reading speed was 23.90 percent in students of the experimental group. 2. The reading improvement programme was found to be effective in the case of students with high I.Q. as well as low I.Q. 3. The reading improvement programme was also found to be effective in the case of students coming
from high SES as well as low SES. 4. The improvement in reading comprehension depended upon the reading ability and reading improvement programme because the interaction between two levels of reading ability and the reading improvement programme was significant. 5. The reading improvement programme was also effective for increasing the speed of reading and students with high I.Q. as well as low I.Q. Similarly, it also proved to be effective for increasing the speed of reading of students coming from high SES as well as low SES.

**Patrikar, M.S. (1981)**, *A linguistic analysis of the errors in written English students of B.A. Classes*. The study was concerned with the causes of the deterioration in the usage of English Language to be analyzed by critical examination of errors in language performance of students and suggestions for improvement in the teaching-learning process in schools and colleges. The investigation was limited to written expression in English. In all 1,500 written scripts (valued answer-books) of candidates from urban centres of Nagpur, Akola and Amravati appearing at B.A.-I, B.A.-II, and B.A.-III examinations of the university were collected for analysis. In addition, 400 scripts from colleges in these cities were also obtained. These scripts contained free composition and not memorized matter. Out of the 1,900 scripts, 300 were sorted out after careful scrutiny. In order to judge the errors in their proper context, one hundred sentences from these were examined for description and explanation of the errors committed in each category. These were classified into four categories in linguistic terms: (i) Lexical errors – 83 percent of the errors were due to omission of lexical items, 10 percent due to wrong use of lexical items and 7 percent due to addition of unnecessary lexical items. Further, 56 percent errors occurred due to absence of control over vocabulary, 17 percent due to false analogy and 27 percent due to the interference of mother tongue. (ii) Orthographical errors-Spelling errors were found to be occurring mainly due to faulty pronunciation, confusion in similar sound of words, double vowels or consonants, false analogy and lack of knowledge of rules governing morphological changes. (iii) Morphological errors – 28.4 percent were errors of derivational affixes, 33.7 percent of verbal inflexions, 22.8 percent of noun, pronoun and adjective inflexions and 15 percent of concord. (iv) Syntactical errors – Of these, 40 percent were due to wrong word order or concord, 33 percent due to wrong selection and use of function
words and 27 percent due to wrong formation of phrases. Interference of mother tongue was found to be a powerful cause behind the syntactical errors. The study revealed that students’ knowledge of the English vocabulary, morphology and syntax was very confused. Use of wrong items, omissions and wrong substitutions, lack of knowledge and control over the structure of the language, interference of the mother tongue and lack of fundamental grounding for the receptivity of students from psychological and environmental points of view were the major causes in deficient achievement. Even after the completion of secondary education, the objectives of teaching English were hardly achieved. Proficiency in a language could be attained only through constant practice and this our schools and colleges had failed to provide.

**Pepper Barbarav. (1998)** “A career development Guidance unit for academic able Girls”. The data provided only limited support for the 8 week career development unit with the ninth grade girls. The data provided only limited support for the 8-week career development unit with the ninth grade girls. Peer led groups appear to have been effective in enhancing self- efficacy for education requirement and job tasks.

**Peter (1970)** “Attitude and learning in perform of programmed and conventional materials”. The finding indicated that the programmed text was more preferred to conventional text.

**Peterson et al. (1989)** studied the misunderstandings of grade II and grade 12 students in chemistry using a diagnostic instrument. The results of the study indicated that the two-tier diagnostic instrument provide a feasible approach for evaluating students understanding in the chemistry.

**Pinto (1998)** conducted a study for finding out the effective use of sports for teaching the difficult concept in chemistry like chemical bonding and atomic structure.

**Rabindradas, B. (1984),** The development and try-out of self-instructional materials on health education for high school students with special reference to communicable diseases. The objectives were (i) to d3velop self-instructional materials which would be helpful to high school students to acquire scientific knowledge about health with special reference to communicable diseases, (ii) to validate the developed
self-instructional materials by using an opinionnaire prepared for this purpose, (iii) to try out the developed self-instructional materials in terms of improvement in the knowledge level, (iv) to find out the effectiveness of the self-learning materials developed, as compared to the conventional method of teaching, and (v) to find out the attitude of high school students towards learning health education through self-instructional materials. A sample of three Anglo-Indian schools was selected by using the random sampling method. Students of classes IX and X were taken as subjects for a try-out of the self-instructional materials. The sample was divided into three equal groups by matching the means and standard deviations of pre-test scores. The first two groups were used as experimental group in two different learning situations – self-learning technique in the absence of a teacher and self-learning method under a teacher’s supervision. The third group was the controlled group where instruction on health education was imparted by a classroom science teacher. The investigator developed a self-instructional package on ‘communicable diseases and their preventive measures’ with the criterion test and an opinionnaire. A pre-test, post-test control group design was adopted. The major findings were: 1. The self-instructional materials succeeded in enhancing the learning capacities (gain in knowledge) of the student when self-administered by the students as well as administered under the supervision of the teacher. 2. The self-learning techniques were found superior to the other modes of learning. The self-instructional material administered under a teachers’ supervision was found very effective. 3. The relative superiority of the self-instructional material in terms of the retention level was established over the conventional classroom teaching. 4. The self-instructional material had no differential effect by sex of students so far as learning was concerned. 5. A very high proportion of students showed a favourable attitude towards the prepared self-instructional materials.

Raizada (2002) conducted a study on evaluation and Remedial Teaching in Commerce subjects at the Sr. Secondary level. In the course of study the Remedial steps adopted were personal attention, tutorial classes, re-teaching the micro concept and changing the method of teaching.
Ramamoorthy, V. (1992), Common spelling errors in English committed by standard VI students of matriculation schools and remedial teaching programme. Objectives: (i) To identify common spelling errors in English committed by standard VI students of matriculation schools and to develop a remedial teaching programme, and (ii) to study whether the length of word, similar sounds, words with silent letters and consonants are factors for misspelling. Major Findings: (1) Matriculation students improved in their learning of spelling after the remedial teaching programme. (2) A remedial teaching programme involving the techniques such as oral drill, intensive writing practice, gesticulations, dramatizations, correlation, mimicry, pictures and flash cards, and phonetic methods, was found effective in teaching of commonly misspelt words. (3) The common causes for poor spelling were, the length of the word, words with silent letters, words with similar.

Rani (1996) investigated the causes of difficulties experienced in teaching English poetry at the secondary level. The study revealed that the difficulties experienced by pupils were due to the inadequate library facilities, illiterate parents and uninteresting themes of poems and ineffective method of teaching.

Rath (1995) examined the differential efficiency of verbal self-instructional training on reflective and impulsive reading disabled tribal and non-tribal children and those having reflection cognitive style but failed to yield desirable result for the tribal and impulsive children.

Reddy and Kumar (1997) developed a remedial package for learning the spoken skill in English in standard IX and measured the effectiveness of remedial package with special reference to low achievers. The results obtained showed that the instruction through remedial package was more effective than traditional lecture method in teaching spoken skill in English and it enabled the low achievers to cope with the normal students to a significant extent.

Rogan (1988) conducted a study on concept mapping as a diagnostic aid and concept maps were prepared and tested the effectiveness as diagnostic aid. The study revealed that concept mapping is appropriate for remedial teaching in any area of study.
Rogers (1932) studied the grammatical errors committed in free composition by Junior High School pupils. It listed some of the typical errors made by pupils and provided guidelines for developing remedial instructional programmes.

Ryan (1989) compared the achievement levels, skill mastery rates, learning strategies and attitudes of 16 learning disabled and 16 non-learning eighth graders of similar intelligence. The course was individualized so that each subject had access to a set of materials. The results indicated that the learning disabled with reading disability could master computer literacy skills in the regular classroom environment if given the opportunity to ask questions to teachers and peers. They apparently seek responses that provide them with information and reinforcement. The video group performed better in oral recall and application of target words than the non-video group.

S.P. Mullick (1964) studied the effectiveness of programmed learning material in correspondence course situation. The programmed material proved more useful than conventional material generally used for the purpose.

Sabharwal, V.K. (1978), A study of the comparative effectiveness of programmed auto-learning vis-à-vis other methods of teaching English as a second language in relation to L-1 and L-2 achievement. The main objectives of the study were: (i) to assess the relative efficacy of the four different treatments of TESL, viz., the bilingual method, the audio-lingual method, the grammar-translation method and programmed auto-learning, (ii) to find out whether higher or lower achievement in L-1, namely, Hindi, helped or hindered achievement in L-2, namely, English, (iii) to find out which of the experimental treatments for TESL yielded better L-2 achievement results with learner groups of differential L-1 and initial L-2 achievement, and (iv) to find out whether or not exposure to practice sessions brought about differences in L-2 learning by learner groups using programmed instruction material. Four mother tongue medium higher secondary schools of Jaipur were selected as experimental schools. All the students of grade VII in these schools served as experimental sample for the study. The entire sample was administered L-1 and L-2 achievement tests constructed according to the accepted principles of test construction. Two independent reference groups, each of 100 subjects, were selected through quota sampling. The entire experimental sample was
divided into nine factorial groups for each experimental school. Each of the experimental schools was randomly assigned one of the four experimental treatments. Associate teachers for experimental instruction were selected on the basis of willingness to participate in the experiment, and rating in terms of competence in TESL by the principal of the concerned school. All associate teachers were oriented to the experimental treatment. At the end of the experimental teaching, all the subjects were administered a posttest. The findings of the study were: (i) Learners’ groups of differential L-1 and initial L-2 achievement learned L-2 in different measures. (ii) The bilingual method and programmed auto-learning based on the bilingual method were more effective instructional strategies for teaching English as a second language for Hindi-speaking learners studying in upper primary classes in mother tongue medium schools. (iii) Learner achievement in L-1 and L-2 language proficiency correlated with subsequent L-2 learning. (iv) Achievement in L-1 and L-2 was independently and per se correlated with subsequent L-2 learning. (v) Achievement in L-1 and L-2 contributed directly as well as differentially to subsequent L-2 achievement. Of the two, earlier achievement in L-2 made a relatively greater contribution to subsequent L-2 learning. (vi) Exposure or non-exposure to practice in using programmed self-instructional materials did not help or hinder second language learning through such materials. (vii) The past achievement in L-2 was the best single index of subsequent L-2 learning through the grammar translation and the audio-lingual method. There did not exist any such predictor for effective forecasting of L-2 learning through the bilingual method and the programmed auto-learning. (viii) Other things being equal, learners taught by teachers exhibited consistently better achievement than those learning on their own through programmed self-instructional materials.

Salí, P.H. (1984), A diagnostic study of the difficulties of pupils in the learning of Arabic in the secondary schools of Kerala. The objectives of the study were (i) to identify the difficulties experienced by pupils in learning different aspects of the Arabic language, and (ii) to obtain opinions of teachers on causes of the difficulties. The sample for the study comprises 515 pupils for administration of a diagnostic test, 600 pupils for administration of questionnaires and 100 teachers. The techniques applied were linguistic analysis, textbook analysis, observation and interviews. A questionnaire and a diagnostic
test were also prepared and administered. The conclusions were: 1. The areas of difficulty for pupils were different types of conjugation, word order, paraphrasing, prepositions, adjectives, objectives, pronouns, verbs, auxiliaries, numerals, application of numerals, reconstruction of sentences, translation, and expression. 2. The areas of moderate difficulty were participles and comprehension. 3. The areas which were easy for pupils were identification of subjects, correction of sentences, interrogatives, plurals, nouns, adverbs, genders, and tense. The areas where the majority of pupils made mistakes were substitution, addition, omission, disjunction, conjunctives and product errors. 5. Pupils had a positive attitude towards Arabic. 6. The teachers were of the opinion that the periods allotted for the teaching of Arabic were not sufficient, the textbooks prescribed and the evaluation procedure adopted were satisfactory, the aids which could be used were not made use of, and only a few teachers adopted modern teaching techniques. 7. Special emphasis was laid on the attainment of different skills by teachers. The implications for education were: (1) In-service education for teachers was essential. (2) Modern methods of teaching had to be applied in the teaching of Arabic. (3) Emphasis had to be laid on spoken Arabic.

Saly (1984) studied the difficulties experienced by pupils in the learning of Arabic in the secondary schools of Gujarat. The areas of difficulty identified were different types of word order, paraphrasing preposition, adjective and verbs and reconstruction of sentences.

Saly (1984) studied the difficulties experienced by pupils in the learning of Arabic in the secondary schools of Kerala. The areas of difficulty identified were different types of word order paraphrasing preposition, adjective and verbs and reconstruction of sentences.

Sankara (1967) studied the difficulties experienced by pupils of standard IX in factorization. The study revealed that a great majority of the pupils experienced difficulties in dealing with negative numbers, applying rules of signs factorization of polynomials and in recognizing common factor.

Sansanwal D.N. and Seri Sonia (1995) “Comparative effectiveness of lecture method, programmed - learning material in terms of achievement in organic chemistry of
class XI students”. The sample comprised 90 conversing 27 female and 63 male students selected from three English medium schools. Major findings: the students of the group taught 4 rough PLM achieved significantly higher than those through lecture method. I was found that the lecture with PLM was superior lecture method PLM and lecture with PLM both are found equally effective as far as achievement was concerned.

Sansanwal D.N. and Suri, Sonia (1995) “Comparative effectiveness of lecture method programmed learning material in terms of achievement in organic chemistry of class IX students”. The sample comprised 90 students. The results indicated that the experimental group achievement was significantly higher than that of the controlled group.

Sarma (1997) used programmed instruction to teach Sanskrit grammar (Karaks). He found that the programme learning group obtained a higher mean. Their performance was better than the group taught through conventional method.

Sarma, V.B.B. (1989). Designing a course in written English for the high school stage: A communicative approach. Objectives: (1) To find out selectively from the learners, teachers, parents, and well-informed citizens of the society the following (Stage I): (a) the present achievement levels in written English of the learners of classes VIII to X (Telugu medium); (b) the needs of high school students in respect of written English; (c) the types and frequency of composition exercises offered to students and the nature of teaching methods and evaluation procedures adopted by the teachers, and (2) to find out the effect of the following (Stage II): (a) the communicative syllabus designed to develop writing skills among the students of class IX (Telugu medium); (b) reading a passage – analyzing it for writing skills – solving communicative writing tasks, as a procedure for developing writing skills; (c) evaluate (not grade) – comment – ask for revision – discuss in a session – procedure as a mode of correcting the written English assignments. Major Findings: Stage I – (1) A large number of students were poor in written English in comparison to their proficiency in the other language skills. (2) High school students needed written English for both academic (note-taking, writing answers for home assignments and tests, etc.) and certain specified social activities (like letters to friends). (3) Frequency of writing compositions was very low and a large number of students
needed many writing exercises. (4) Further, the teachers used ‘impressionistic method’ in their evaluation of assignments and were unaware of the reference material that could improve their own knowledge of teaching writing skills. Stage II – (5) The second stage of the investigation confirmed that the use of communicative language teaching strategies can bring about an improvement in the use of skills which they sought to develop. (6) A well-designed communicative syllabus incorporating the needs of the students can in a tension-free, interactive classroom, create a satisfying and positive attitude towards learning writing and enhance the skills of writing and revising.

**Schunk & Cox (1986)** compared the effects of different forms of verbalization among students during mathematics instruction. Continuously verbalizing a strategy while solving problems led to higher self-efficacy and skill compared with discontinued verbalization or non-verbalization.

**Scott (1988)** studied the effectiveness of a computerized diagnostic inventory on basic mathematical skills, a computerized designed parallel to the commercial paper and pencil inventory published by McGraw Hill. Analysis of the findings revealed that it requires significantly less time and fewer questions then that of the paper and pencil inventory.

**Scott (1993)** examined the effectiveness of the instructional generalization model in facilitating elementary students to successfully generalize a newly learned strategy to novel conditions and with novel tasks. The result indicated that an instructional model could be developed which is effective comprehensive and practical in school setting.

**Sebastian (1985)** studied the difficulties experienced by educationally backward students at pre-degree level in learning battery. The major causes identified were lack of pre-requisite knowledge, knowledge in related subjects, ability in concept attainment and comprehending abstract knowledge. The study revealed that the low achievers have more learning difficulty than high achievers.

**Shah, S.G. (1984)**, Development and tryout of programmed learning material on population education for the students of class IX, Deptt. Of Education. The major objectives were (i) to develop programmed material on population education for the
students of class IX, (ii) to find out the effectiveness of the programmed material, and
(iii) to assess the opinions of students about the programmed learning materials. The
nature of the present investigation was an experimental one, where the effectiveness of
the programme was to be measured in terms of the achievement. The sample comprised
40 students of class IX of a secondary school. The research design was pre-test, post-test
single group design. The experiment was replicated on another group of 40 students of
class IX of a different school. The programmed material was preliminarily tested on the
students of class IX. All the students were successfully pre-tested and post-tested as
scheduled by the researcher. The retention test was conducted three months after the
experiment. All the students were available for the retention test. Tools used were a linear
programme on population education, a criterion test of the linear programme based on the
content of population education, and an opinionnaire to know the opinions of learners
regarding the programmed material. The major outcomes and findings were: 1. The
programmed material prepared for the present study was simple, self-instructional and
easily understandable. It required only three hours of learning. 2. Study of the programme
could bring tangible changes in student’s knowledge in the area. The programmed
learning approach adopted held a promise for the successful use of educational
technology in the area of population education. 3. Opinions of the participants regarding
the quality of the programme were very positive. They found the programme very
interesting and useful. They also showed their willingness to study such programmes if
available. The programme was found to be self explanatory and on external help was
required by the participants. They felt no difficulty in ‘self study’ of the programme.

Sharma, A.R. (1978), A study of programme in English sentence structures in
relation to sequencing and prompting. The study aimed at analyzing the variables of
sequencing and prompting and their interaction effects on a programme in English
sentence structures. The specific objectives were: (i) to study the effectiveness of Ruleg
and Egrul sequencing with regard to pupil response on the criterion test, (ii) to study the
effectiveness of formal and thematic prompts with a sequence, and (iii) to find out the
interaction between sequencing and prompting. The target population for the study
consisted of all the undergraduate students. However, the accessible population
comprised the undergraduate students of two colleges of Agra. Out of this accessible
population, the sample was drawn randomly. The size of the sample for developing the four sets of the programme, namely, Ruleg Formal (RF), Ruleg Thematic (RT), Egrul Formal (EF) and Egrul Thematic (ET), was 4, 48 and 120 at the individual, small group and field tryout stages of their development respectively. The tools used in the study were the programme sets modeled on the linear format given by Skinner and the criterion test. It was validated on the basis of individual, small group and field testing. The error rate in the final draft was 0.35, 0.41, 0.55 and 0.52 for RF, RT, EF and ET sets, respectively. The programme density was 0.35 for each of the sets. The programme was validated for the progression of sequence against the criterion test which was used to evaluate the programme. The design of the study was 2x2 classification of the factorial design. Sequencing and prompting were the independent variables and performance of the students on the criterion test was the dependent variable. The data were analyzed using analysis of variance. F-test was used to determine the significance of the main effects of sequencing and prompting along with their interaction effects and t-ratio was also calculated. The main findings of the study were: (i) The main effect of sequencing was significant showing the superiority of the Ruleg over the Egrul sequencing. (ii) The prompting effect did not show any statistical significance implying that the formal and the thematic prompts were equally good. (iii) In the absence of any significant interaction between sequencing and prompting neither the formal nor the thematic prompts affected the sequencing Ruleg or Egrul. It meant that the interactions between them did not yield significant results.

Sharma, H.L. (1969), “Development of self-instructional materials in educational statistics for M.Ed. programme through distance mode”. The main aim of this study was to develop a SIM for M.Ed. students in distance mode. Objectives of the study: (i) To develop a self-instructional unit in print in the area of statistics pertaining to ‘sampling’ for M.Ed. distance learning. (ii) To study the reaction of learners towards SIM and bring out possible modifications therein. Results: This SIM on sampling was beneficial for distant learners as well as to researchers who do not have access to formal system of instruction and want to pursue academics in the field of statistics as a subject.
Siddheshwar, S.S. (1989). Study of the effectiveness of the self-learning method adopted for teaching prose in Marathi textbook to standard VIII students. Objectives: (i) To decide the components to be included in the self-learning method, (ii) to analyze the prose chapters to be given for self-learning, (iii) to test the effectiveness of the self-learning method, and (iv) to encourage students in the experimental group for self-evaluation. Major Findings: (1) Students in the experimental group obtained a higher mean in the final test than the control group. (2) Almost all the students in the experimental group secured higher marks in the final test.

Sie (1969) constructed a diagnostic test in basic skills in arithmetic computation for pupils of standards V, VI and VII and to provide remedial measures. When the mistakes were diagnosed and provided remedial teaching, the students progressed well in mathematics.

Sindhu (1996) studied the difficulties experienced by the fifth standard pupils in learning fractions. The study revealed that many of the common errors made by pupils were due to lack of understanding of principles involved in the addition, subtraction and multiplication with fraction and inadequate practice in doing problems in fraction.

Singh (1981) studied this problem by investigating the effects of peer tutoring in Mathematics skills of learning disabled students. The major question the study attempted to answer was whether the learning disabled who received peer-tutoring made significant gains in Mathematics computation and in the application of Mathematics concepts over the learning disabled pupils who did not receive peer tutoring. Results indicated that peer-tutored group of I.D. students made significant gains in both Mathematics computation and Mathematics concepts application scores over the non-peer tutored students.

Singh and Srivastava (1960) conducted a diagnostic study of common errors committed by students of standard VIII in written English, their prevention and cure. The study revealed that lack of remedial and preventive techniques in English is one of the major reasons for committing errors in English.

Skanthakumari, S.K. (1987), Development of strategies for improvement of reading skills in English at middle school level. The main objectives of the study were (i)
to identify the tasks involved in reading and comprehension, (ii) to develop strategies which would help students perform the tasks involved in reading and comprehension, (iii) to develop the skill of reading and comprehension through these strategies, and (iv) to find out the effectiveness of the strategy by an experiment. A survey-cum-experimental design was adopted for the study. A stratified random sample of 937 students of both sexes, drawn from 11 schools from both urban and rural areas was used for the survey to determine the level of reading and comprehension ability. The sample for the experimental study consisted of 58 top ranking and 56 low ranking students in the reading and comprehension test. The tools used for the study were Mental Ability Test, Part 1, (NCERT), Kuppuswamy’s Socio-Economic Status Scale, Achievement Test in English and Reading and Comprehension Tests (I to VII) constructed by the investigator, based on Barrett’s taxonomy (literal comprehension, reorganization, inferential comprehension, evaluation and appreciation). One of the important strategies used for the development of reading skills was ‘easification’, others being schemation presentation, intermittent comprehension, use of short form and motivating through puppet show and dramatization. In addition, the investigator prepared a text-book of reading material for the 12 lessons conducted during the experiment and a teacher’s handbook for the same. The major findings of the study were: 1. There was a significantly higher reading ability score for boys, students with English as the medium of instruction, and students from urban areas. 2. The intervention strategy helped to improve the reading ability of the students of both the high and low groups, the increase in the low group being higher than that in the high group. 3. The increase in the achievement of reading ability as a result of intervention strategy was significantly high in literal comprehension and in inferential comprehension for both high and low group students. 4. The increase in the achievement of reading ability as a result of intervention strategy was significantly high in appreciation and reorganization levels in the low group students. 5. The percentage of increase in the achievement of reading ability of the students and the mental ability scores of the students of the high and low groups were significantly related.

Srinivasa Rao, R. (1982), Diagnostic study of reading disability among school children. The main objectives of the study were: (i) to investigate the main causes of reading difficulties, (ii) to identify and analyse the psychological, sociological and
educational factors affecting growth in reading performance, (iii) to relate reading difficulties with achievement in certain school subjects, and (iv) to make case studies of school children with special type of reading difficulties. A sample of 300 students studying in classes V, VI and VII of ten schools of Andhra Pradesh were selected following the stratified random sampling procedure. Due representation was given to the sex of the individual location and management of the school. The major findings of the study were: (i) The correlation matrix revealed that the subtests of reading skills, namely, test 1-word meaning in isolation, test 2-word meaning in the context, test 3-word meaning with antonyms, test 4-word meaning with prefixes and suffixes and test 5-word meaning with roots were interrelated. There was high correlation between vocabulary and comprehension and also between total reading skills and language achievement (0.64). It also highly correlated with general knowledge test, composite score of social studies and general science. But the correlation with arithmetic test was comparatively low (0.34). All the correlation coefficients were significant at 0.01 level of confidence. (ii) Among the personal characteristics studied, visual discrimination, auditory discrimination, general health condition and general mental ability of children showed high positive relationship. (iii) Reading skills of children were mostly dependent on the socio-cultural background of their families. Students from highly developed and culturally advantaged families performed better on the reading tests when compared to those children who hailed from backward and culturally disadvantaged families. (iv) Reading achievement of school children in total was normally distributed. Students performed fairly well on the subtests of word meaning in isolation, word meaning in the context, and word meanings in antonyms, but were poor and below average achievers in the subtests of word meaning with prefixes and suffixes and word meaning with their roots. (v) Children from socially and culturally backward families suffered from language deficiency and lagged behind in the reading skills.

Stuart (1940) studied how innovative techniques can be used to make remedial teaching classes interesting and novel. The study revealed that the use of daily newspapers and magazines can be used as effective practice material in remedial classes.
Stuart (1940) studied how innovative techniques can be used to make remedial teaching classes interesting and novel. The study revealed that the use of daily newspapers and magazines can be used as effective practice material in remedial classes.

Sudarsanam, R. (1980), A diagnostic study of reading comprehension of the undergraduate students studying English under Part II in colleges in Coimbatore. The main objective of the study was to construct and administer a diagnostic test of reading comprehension for undergraduate students and to develop a suitable approach for remedial instruction. A proficiency-cum-diagnostic test of reading comprehension consisting of two parts, one for macro diagnosis (factual, referential), inferential and evaluative comprehension) and the other for micro diagnosis (rhetoric, use of words, sentence structures) was constructed and questionnaires for teachers and students were used to collect the required data. Adopting the stratified random sampling technique, 716 students from the three years of the undergraduate (BA/BSc) courses were selected as a sample for the study. For the experimental study to validate the remedial programme suggested, the paired group method was followed and 28 students in the experimental group were paired with 28 students in the controlled group on the basis of the marks scored in Part I of the diagnostic test. The remedial programme was carried out over 15 classes each of one hour duration. The main findings were: 1. The mean comprehension score of the sample was only 72.29 against a maximum of 170.2. Second year students (M=34.14) significantly differed from first year (M = 31.04) and third year (M = 30.84) students in their comprehension ability. 3. First and third year students did not differ in their comprehension ability. 4. A significant difference was observed between arts and science students only in the first year. 5. Students (third year) who studied English under Part III (Major) did not differ from students (third year) who studied English only under Part II. 6. Tamil and English medium students did not differ in their comprehension ability in English. 7. Rural and urban students differed only at the second year level. 8. Students in government and private colleges differed at the first and the third year levels. 9. Men and women students differed at the first and the second year levels. 10. The teaching of English did not contribute to the improvement of students’ comprehension performance. 11. Educational and occupational status of parents correlated significantly with the comprehension scores of the students. 12. Students devoted greater attention to
reading the opening and closing paragraphs of long texts. 13. The remedial programme suggested was effective in significantly raising the comprehension score of the experimental group students. Implications of the study are: (1) A rhetorical approach to teaching comprehension may be adopted. (2) The syllabi, materials and methods of teaching English in colleges should be related to using English as a source language for further and advanced learning of one’s subject.

Suhm (1999) analyzed the factors affecting reading difficulties of the students of school of Micronesia. The study revealed that the factor contributed to the problems fall in the following areas: language, educational background, culture, motivation, learning and reading strategies of the students and the teaching methodologies, institutional policies and sociological conditions of the school.

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Sunder and Ekdote (1994) developed and validated tape slides programmes (PLM). They found that the programmed material had positive impact on students’ performance. Students also expressed positive response to the programme.

Thaker (1994) undertook Ph. D. work to find out effectiveness of linear and branching programmes. He taught economics to class XI studens and found that linear programme was more effective than the branching one, but branching programme was more effective for textbook materials which found to be least effective.

Tharakan (1998) conducted a study on diagnosis and remediation of certain common grammatical errors committedly secondary school students in written English. The major tools and techniques used were teacher made diagnostic test. Teacher made pre-requisite test and achievement test. The study revealed that the number of errors committed by the pupils in written English can be reduced though remedial practice with in the limited time.
Thirunvenkatachary (1967) conducted a remedial teaching programme to measure the pupils ability to write with speed without loss of legibility and accuracy. The study revealed that speed in writing in English could be enhanced to about forty six per minute after providing remedial teaching.

Treagust (1988) developed diagnostic test in chemistry and biology to evaluate students misconceptions and errors committed in science. Analysis of the results of the tests revealed that diagnostic tests were very much effective for identification of errors and misconceptions of both teachers and students in chemistry and biology.

Trehan (1994) studied for her Ph. D. work relative effectiveness of individualized and group instructional modules for teaching biosciences to class XI students. GIM was of three types: one having visual media (GIM-1), another having audio commentary (GIM-2), and the third with printed component (GIM-3). It was found that GIM-1 was most effective, followed by GIM-3 and GIM-2.

Trehan Nee Kaushal Shashi (1994) “Relative effectiveness of individualized and class IX”. The sample of the study comprised 198 students. The finding indicates that group instructional modules were more effective the individualized instructional modules for improving scholastic achievement of the students.

Trivedi, I.U. (1980), Use of branching variety of programmed learning materials as diagnostic and remedial tools. The major objectives of the study were: (i) to develop programmed learning materials of the branching type in mathematics for classes V, VI and VII, (ii) to compare the achievement of the students studying by the traditional methods of teaching with that of the students studying through programmed materials, (iii) to diagnose students’ weakness in mathematics, and (iv) to use programmed materials as remedial measures. It was an experiment using experimental control group design. The subjects in the two groups were selected on a random basis. For each class, there were 40 students in the experimental group (20 boys and 20 girls) and an equal number in the control group. The two treatments were the use of programmed learning materials of the branching type and the conventional method. Two-way analysis of variance was used for data analysis. In the design, pretest score and intelligence were used as the covariates. The tools of research used were programmed materials developed
for the selected units of mathematics, pretest, posttest and the Bhatt Test of Intelligence. The experiment was conducted by the teachers who were trained to use the programmed materials. The major findings of the study were: (i) For class VI, the programmed learning material was more effective than the conventional method of teaching whereas for classes V and VII, both the methods were equally effective in terms of pupils’ achievement. (ii) In the case of class VI, girls learnt better than boys through the use of programmed materials, whereas in the case of classes V and VII, there was no significant difference between the mean scores of boys and girls learning through programmed materials.

**Type (1969)** constructed a diagnostic test in square root for pupils of standard IX. The difficulties experienced by the pupils in different operations were the following: fundamental operations especially in manipulation and division and units of measurements.

**Unisa (1994)** identified the difficulties experienced by lower primary school children in learning science. The study was intended to prepare a diagnostic test in LPS science so as to identify the difficult areas of knowledge, understanding, application and to arrange the various categories of difficult areas on the decreasing order of difficulty. The study revealed that the most difficult area in the cited categories is application.

**Urvashi R. Desai (1966)** applied the technique of programming in teaching IX standard. The finding tended to point out that programmed learning approach is more effective than the conventional teaching approach for the students ranging from high 1QS to low 1 Qs.

**Utay (1992)** undertook a study to examine the effects of combining cross age tutoring peer tutoring co-operative learning and computer mediated writing together referred to as peer Assisted Learning disabilities. Though the treatment groups did not score significantly higher than the control groups they seemed to enjoy working with the partners. They asked their partners help before asking their teachers.

**Uzhuvathu (1985)** studied the difficulties experienced by educationally backward students at pre-degree level in learning physics. The study revealed that pupils
experienced great difficulty in learning physics at first year pre-degree level and this was acute in the case of educationally backward students.

Varghese (1991) studied the difficulty in learning fractions by pupils of standard VI. The study revealed that the following areas are difficult for the majority of students due to the lack of understanding of fundamental concepts; changing the whole number into a fraction; changing on improper fraction into a mixed fraction and addition and subtraction of improper and mixed fraction.

Vasanthi (1994) developed a remedial programme in mathematics for IXth standard students. The study revealed that teaching through the remedial programme was found to be effective over the traditional lecture method.

Vasudevan (2003) conducted a diagnostic study to identify the difficulties experienced by pupils studying in standard VIII, in the computation of negative numbers. The study revealed that majority of the students faced difficulty in carrying out the fundamental operations involving negative numbers due to the lack of clarity on rules of fundamental operations.

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Verma (1986) constructed a diagnostic test in chemistry and identified the reasons for committing errors in chemistry. The investigator prepared remedial materials on selected topics and tested the effectiveness of remedial material prepared.

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Vijay Kumar (1982) conducted a study on a diagnostic remedial approach to some select portions in B.Sc. Chemistry. The main objectives of the study were: to analyse the nature and frequencies of errors committed by students in select concepts in
organic chemistry and to analyse the different types of difficulties existed in the
development of the select components. The study revealed that the errors were very high
even in the very simple aspects of chemical terminology, formulae, structure and
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the select components. The study revealed that the error were very high even in the very
simple aspects of chemical terminology formulae, structure and information associated
with chemical symbolism.

Walker (1987) investigated the effectiveness of two different methods of
teaching learning school students how to solve one step addition and subtraction and
mathematical story problems, this study also compared the generalization of the two
instructional methods to problems written in syntax that required the performance of two
mathematics operations subtraction and addition.

training Programme on the Mathematics Performance of children with learning
Disabilities”. The study investigated the effectiveness of a computer based self
instruction training programme for teaching math's problems to children with learning
disabilities. Six children ranging in age from 7 to 11, participated in this study. Following
a variety of five to eight training sessions during the intervention phase students
demonstrate the competence to solve arithmetic problems at a high level of accuracy. The
performance of problem solving on the computer also generalized to the questions in
paper pencil test and to a vertical format of the tests.

verbal retelling abilities in adolescents for social studies lectures. Verbal retelling abilities
were examined and compared in 20 adolescent boys of 5-12 and 7-14 ages. Results
indicated that the comparison discourse structure facilitated more substantive and
elaborate retellings.
White (1998) reviewed the research on cognitive learning strategy interventions in two topical areas of reading and mathematics. Overall interventions in both topics were effective with students. The results revealed that the interventions were most successful at the elementary and junior and senior levels in mathematics.

Wickenden (1999) conducted a study based on the developmental speech, language and communication difficulties. The main objective of the study was to develop understanding of the range, nature and causes of developmental speech, language and communication difficulties and to develop suitable remedial programmes to overcome the difficulties identified.

Wilson (1998) investigated the ability of general education middle school students to prompts and reinforce skill acquisition of peers with moderate in the context of content area co-operative learning instructional settings. Results indicated that the general, education students learned to provide the identified opportunities reinforcement and prompt sequences to their peers with learning disabilities. The tutors and tutees felt positive towards the participation.

Xin (1993) investigated the effects of using video – technology as a tool for facilitating disabled students vocabulary 4th, 5th and 6th grade learning disabled students receiving reading instruction in special education resource room were randomly assigned to a video – wards far a period of 6 weeks instruction.

Yadav and Govinda (1975) studied the relationship between intelligence attitude towards programmed learning academic motivation and reading comprehension through linear program. 35 B.Ed. students were selected as samples. The result revealed that intelligence, attitudes towards programmed learning were positively related to the achievement.

Zakari (1982) found that study questions led to greater increase in learning than students receiving only behavioral objectives. However, combination of the two variables resulted in more learning than either of these variables alone.