Chapter-2
Review of Related Literature
CHAPTER – II
REVIEW OF RELATED LITERATURE

Researcher takes the advantage of knowledge which has been accumulated in the past as a result of constant human endeavor. Research can never be taken in isolation of the work that has already been done on the problems which are directly or indirectly related to a study proposed by the researcher. One of the important steps in planning of any research study is a careful review of related literature from the journals, books, dissertations and other sources of information on the problem to be investigated. Therefore, review of related literature must proceed in a well planned manner.

2.1 LEARNING DISABILITY AND ACADEMIC ACHIEVEMENT IN RELATION TO EMOTIONAL INTELLIGENCE AND ANXIETY

Fisher, Allen & Kose (1996) compared the effects of low, medium, and high pretest anxiety levels on the social and nonsocial problem-solving performance of 45 boys with learning disabilities (LD) and 45 boys with no learning disabilities (NLD). Participants ranged from 9 to 11 years of age. Boys with LD reported significantly higher pretest trait and state anxiety on the State-Trait Anxiety Inventory for Children than did NLD boys, and their perceived state anxiety escalated over the course of the problem-solving session. There were no pervasive effects of LD status on problem solving by itself, boys with LD being as effective in problem solving as NLD boys. However, means for task solution suggest a tendency for an interaction between group and anxiety level, which should be examined using a larger, well-defined sample and an unstructured task.

Hawke, Olson, Willcut & Wadsworth (2009) studied that the prevalence of reading difficulties is typically higher in males than females in both referred and research-identified samples, and the ratio of males to females is greater in more affected samples. To explore possible gender
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differences in reading performance, data was analyzed from 1133 twin pairs in which at least one member of each pair had a school history of reading problems and from 684 twin pairs from a comparison sample with no reading difficulties. Although the difference between the average scores of males and females in these two samples was very small, the variance of reading performance was significantly greater for males in both groups.

The current study was an exploratory study to investigate the relationship between emotional intelligence and IQ scores in a research sample of students with learning disabilities. Emotional intelligence (EI) may provide information about non-intellectual factors in the achievement and adjustment of students with learning disabilities. The Emotional Skills Assessment Process (ESAP) and the Wechsler Intelligence Scales (WISC-III) were used to quantify emotional intelligence and IQ. Evaluating the relationship between emotional intelligence (experiential) and IQ was the major focus of the proposed study account at least in part for their higher prevalence of reading difficulties as well as for the higher gender ratios that are observed in more severely impaired samples.

Narimani, Sadeghieh, Homeily & Siahpoosh (2009) compared emotional intelligence and behavior disorders in dyslexic and non-dyslexic boys. A random sample of 15 dyslexic boys were compared with matched controls, all aged 11-15 years. A causal comparative research method was employed and data was collected through administration of self report measures of emotional intelligence and behavior disorders. Results of the study revealed that emotional intelligence is correlated with behavior problems \( r = -0.54, p<0.05 \). Furthermore, dyslexic children scored lower on emotional intelligence and higher on behavior problems than their normal counterparts. As well as being congruent with earlier research, the present findings point to the importance of emotional intelligence in school achievement and behavioral health.

William, Charles, Cory & Kouider (2009) conducted research to ascertain if an essay-writing strategy was effective at improving the achievement on essay tests for 7th- and 8th-grade students with reading and
writing disabilities. Students were assigned via a stratified random sample to treatment or control group. Student scores were also compared to students without learning disabilities nominated by teachers as average writers. A 6-step essay strategy was taught that included analyzing the essay prompts, outlining, writing a response, and reviewing the answer. On the posttest, intervention group students significantly outperformed control group students on essay measures related to strategy use, content, and organization. There was no significant difference between treatment group and students without learning disabilities on posttest measures of content and organization.

Saenz (2010) studied the relationship between emotional intelligence and IQ. The findings of the study identified key emotional intelligence skills that are essential to the academic achievement and personal development of students with learning disabilities.

The findings of the study showed there was no statistically significant relationship between total EI scores and IQ using a Pearson correlation. When using the Pearson correlation to determine a relationship between the 13 EI subtests of the ESAP and IQ there was no statistically significant relationship. These findings suggest that emotional intelligence as measured by the ESAP and IQ are two separate constructs. There was one ANOVA performed to investigate the difference between males and females on the EI assessment. When the ANOVA was performed for gender and EI there was no statistically significant difference.

In the current study there were no statistically significant findings in Verbal, Performance, and Full Scale IQ when compared to emotional intelligence. These findings suggest that emotional intelligence skills as measured by the ESAP and IQ are two different theoretical constructs. Special education personnel, counselors, and teachers may find important uses of EI in designing educational interventions for students with learning disabilities. A value of the study could be that educators could use emotional intelligence to enhance academic and career performance of students with learning disabilities.
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2.2 COGNITIVE STRATEGIES AND ACADEMIC ACHIEVEMENT

2.2.1 Self Instructional Techniques and Academic Achievement

Kurland (1989) investigated the effects of a self-monitoring technique on promoting changes in locus of control orientation, academic achievement, and classroom behavior of behavior disordered/emotionally disturbed children. Some researchers have showed that self-monitoring has a positive effect on both academic achievement and classroom behavior. One another study using a self-monitoring technique suggested that locus of control orientation of educable mentally retarded children could be changed from external toward internal.

A pre/post experimental control group design was conducted on 68 severely emotionally disturbed children ages 11 through 15 placed in 4 public and/or private day/residential schools for behavior disordered/emotionally disturbed children. Using the natural setting, all the children were randomly assigned by each school to experimental or control groups, and all testing and treatment was conducted during structured math classes. The possible influence of several demographic and personality characteristics on the outcome measures were investigated using correlations and t-tests. Significant relationships found were included in the final analysis as covariates or grouping factors. The primary hypothesis concerning the effect of the self-monitoring treatment was tested using analysis of covariance. Analysis of the data did not reveal any evidence that the self-monitoring technique promoted change in the locus of control orientation, academic achievement, or classroom behavior of emotionally disturbed children.

Zender (1991) studied varied amounts of practice and reminders in an computer assisted instructional (CAI) self-monitoring program to examine the effects on subsequent academic achievement. Specifically, a 5 to 7 hour CAI program was designed to teach 41 college students in business communications the following: goal setting; finding main ideas; self-questioning; and a memory-aid for list tasks. Training was designed according to the instructional design theories of O'Neil et al., Gagne, and Merrill. A secondary purpose was to explore differences in self-reported study skills and
anxiety related to different levels of practice and verbal reminders. All four groups received the same instruction in self-monitoring awareness and skills. However, group 1 was given minimum practice with no reminders of when to use self-monitoring techniques; group 2 received minimum practices with reminders; group 3 was given maximum practice with no reminders; and group 4 received maximum practice with reminders.

Maximum practice and reminder groups were hypothesized to report significant differences from the minimum practice and no-reminder groups on the following: researcher-designed tests; a midterm exam as a delayed retention measure; self-reported use of study skills on three measures; and anxiety. In general, no significant differences were found after extensive analyses of variance, covariance, and chi-square were conducted. The analyses controlled for differences in GPA, content knowledge, and reading comprehension. Therefore, this study failed to support the hypothesis that varied amounts of practice and reminders positively affect subsequent achievement in a CAI self-monitoring program. However, the following may have impacted results of the study: the maximum practice with reminder group scored significantly lower on content knowledge pretest, thus making the effect of practice and reminders unknown on subsequent analyses; time on task was uncontrolled; minimum practice was incorrectly defined; reminders were not operationalized to their full capability; and the program did not teach the full range of self-monitoring techniques due to time constraints.

Further subdivisions of achievement measures revealed practice and reminders had a positive effect on memorization tasks and two thirds of all students used self-monitoring techniques to study for exams.

Mathew (2000) revealed that the self-instructional materials focused on programmed learning and supervised learning module and the modern instructional strategy namely guided inductive inquiry model are definitely better than the traditional lecture demonstration method in the achievement of biology by the learning disabled (LD) and non learning disabled (NLD) students. There is significantly higher progress in the achievement of biology by the LD and NLD students. The superiority of self-instructional materials
and the modern instructional strategy is remarkable in the achievement of the different objectives namely knowledge, understanding, application and skill. The programmed learning and guided inductive inquiry are found to be better for the attainment of all the four categories of objectives. Supervised learning module was found to be good for the achievement of knowledge and understanding. Another important outcome of experiment was that the extraneous variables like achievement motivation, home learning facility, study habits and socio-economic status had no significant relationship with the achievement of the experimental and control groups of LD and ND students. It shows that if better methods are employed for teaching, better results will be produced despite the presence of extraneous variables. It also shows that in case of LD students, self-study approach is very effective in the achievement of biology.

Williams (2009) found that the fundamental purpose of this research project was to determine the interactions among components of self-regulated learning: self-efficacy, goal orientation, learning strategies; and the predictive effect of these, and grade level and sex, on academic achievement in a sample of high school students with learning disabilities. From the perspective of social-cognitive theory, self-regulated learning was defined as an active, constructive process whereby students incorporate feelings of competence acquired from previous performance, comparison with peers, and feedback from their learning environment to set goals for their learning while they monitor, direct, and control their knowledge acquisition. The sample for the study was 135 (87 male and 48 female) high school students with learning disabilities in grades nine through twelve enrolled in two suburban high schools in southern California. The students had been previously identified as eligible for Special Education services with a primary handicapping condition of specific learning disability. Participants in the research project were obtained from a convenience sample of seven Special Education English classrooms.

The students completed a 57-item questionnaire adapted from the Motivated Strategies Learning Questionnaire (MSLQ) and three goal
orientation scales. The results of the study indicated that components of self-regulated learning, sex, and grade level did not predict academic achievement. However, positive relationships were identified among the predictors. High school students with learning disabilities endorsed feelings of self-efficacy, use of varied and complex learning strategies, and a focus on learning for mastery, as well performance in comparison to their peers. These findings suggest that components of self-regulated learning may operate differently in high school students with learning disabilities. These students may report self-efficacy beliefs as a protective factor to mitigate years of academic failure. Deficiencies in metacognition due to learning disabilities may impair their use of learning strategies consistently and/or effectively. Finally, environmental feedback may have an effect on the learning goals these students adopt.

Khalil, Nelson & Kibble (2010) used qualitative and quantitative approaches in the study to evaluate the effectiveness of self-learning modules (SLMs) developed to facilitate and individualize students' learning of basic medical sciences. Twenty physiologies and nineteen microanatomy SLMs were designed with interactive images, animations, narrations, and self-assessments. Of 41 medical students, 40 students voluntarily completed a questionnaire with open-ended and closed-ended items to evaluate students' attitudes and perspectives on the learning value of SLMs. Closed-ended items were assessed on a five-point Likert scale (5 = high score) and the data were expressed as mean plus or minus standard deviation. Open-ended questions further evaluated students' perspectives on the effectiveness of SLMs; student responses to open-ended questions were analyzed to identify shared patterns or themes in their experience using SLMs. The results of the midterm examination were also analyzed to compare student performance on items related to SLMs and traditional sessions. Students positively evaluated their experience using the SLMs with an overall mean score of 4.25 (SD plus or minus 0.84). Most students (97%) indicated that the SLMs improved understanding and facilitated learning basic science concepts. SLMs were reported to allow learner control, to help in preparation for subsequent in-class discussion, and to improve understanding and retention. A significant
difference in students’ performance was observed when comparing SLM-related items with non-SLM items in the midterm examination (P less than 0.05). In conclusion, the use of SLMs in an integrated basic science curriculum has the potential to individualize the teaching and improve the learning of basic sciences.

2.2.2 Reciprocal Teaching and Academic Achievement

Griffin & Griffin (1995) found that the reciprocal peer tutoring (RPT) is a cooperative learning strategy that capitalizes on the benefit students receive from preparing to tutor one another. In this study, the effects of RPT on the academic achievement, academic self-efficacy, and test anxiety of 47 undergraduate students were investigated. Students developed a series of test questions, used these questions to quiz each other prior to unit examinations, and provided corrective feedback to the questions developed. Findings indicated that the RPT procedure had no statistically significant effects on either achievement or self-efficacy, but did increase test anxiety. Three tables present study findings. An appendix, with an additional table, provides information about the instruments used.

Janette & Sharon (1996) investigated the efficacy of two related interventions on the reading comprehension of 7th & 8th graders with learning disabilities, who used English as a second language. All 26 students participated in reciprocal teaching for 15 days and then were randomly assigned for 12 days 1 of 2 groups: reciprocal teaching with cooperative grouping (n=13) or reciprocal teaching with cross age tutoring (n=13). Though there was no statistical significant difference between two groups on two measures of comprehension, students in both groups made significant progress in reading comprehension. Analysis focused on understanding the performance of more and less successful students within groups. Findings revealed that initial reading ability and oral language proficiency seemed related to gains in comprehension that a greater range of students benefited from strategy instructions than would have been predicted on the basis of previous research, and that students in both the groups continued to show improvement in comprehension when provided with adult support.
Almanza (1999) found that the students who reach middle school with poor reading comprehension ability are at great risk of poor academic achievement at the middle school grades, given the manipulation of information and the reading of expository text required. In this study, a reading comprehension instructional method known as reciprocal teaching (Palincsar, 1982) was implemented with bilingual, native Spanish speaking, middle school students in Spanish. While reciprocal teaching has been documented successfully with monolingual English speaking students, few studies have documented this intervention with Latino students in Spanish. Implementing reciprocal teaching within a thematic context was focal in this study, in order to assure that strategy training has goals beyond the learning of strategies and that information read in the intervention have relevance to the summer program in which the intervention was implemented.

Reciprocal teaching was administered to fifteen students in three mixed ability groups using a changing treatment multiple baseline design. The majority of the research questions posed for this study examined the frequency of strategy contributions across the intervention for evidence of increased student and decreased teacher use, a feature that theoretically defines the intervention. The frequency of the strategies taught in reciprocal teaching was examined by using a repeated measures procedure. Multiple multivariate analyses of variance were conducted using one within-subject (segments one, two, and three) and one between-subjects (groups one, two, and three) design, using Spanish reading scores as a covariate. The frequency of assisted student contributions, clear questions, correct and complete statements and the levels of comprehension at which strategies were used were examined. The students’ reading comprehension ability was monitored pre-post and across the intervention using informal and formal measures.

The data analysis indicated: (a) a general lack of significant difference in the frequency of the strategy contributions across the intervention, (b) the use of non strategy and strategy related activities in the reciprocal teaching intervention, (c) no evidence of improvement on the informal reading
comprehension measures across the study, and (d) evidence of significant
effects for the pre-post Spanish and English standardized tests for within-
subjects.

2.2.3 Mediated Learning and Academic Achievement

Krapf (1986) studied that historically, for psychologists and educators
working with the deaf, the discrepancy between cognitive/intellectual ability
measures, linguistic development, and academic achievement has remained
a longstanding issue. The research is replete; nevertheless, with evidence
that most individuals possessing an auditory sensory loss are detrimentally
affected in the linguistic areas, however, this finding is not so predictable
when measuring the cognitive/intellectual features of this population.

In an attempt to differentially explain the causative nature of the
manifest cognitive functioning of the deaf Keane (1983) applied Feuerstein's
(1979) "Mediated Learning Theory" and instrumentation from his Learning
Potential Assessment Device (LPAD) to a sample of the deaf population. He
observed significant within treatment and post-test results concluding that the
deaf had abstract reasoning abilities that typically have not been observed
through traditional psychometric procedures. The purpose of this study was to
investigate higher-order analogical reasoning skills through the application of
Feuerstein's mediated learning construct by assessing the cognitive
modifiability of a sample of deaf adolescents. The sample consisted of 25
female and 20 male severe to profound prelingually deaf adolescents who
ranged in age from 12 to 18. The format of this study followed a pre-test- post-
test control group design. The subjects were randomly assigned to one of two
treatment conditions and a control group. The two treatment conditions
consisted of one experimental group, a "mediation" condition, and a
comparison group, a "standard" condition. The mediation and standard
conditions varied in the qualitative nature of the examiner-examinee
relationship while the control group received only the pre and posttest
instruments. Feuerstein's (1979) LPAD Variations B8-B12, Set Variations I
and II were administered within treatment and the Advanced Progressive
Matrices (APM) Set I and II were administered as the pre and posttest to assess transfer of learning.

The result of subject's performance on the LPAD tasks show that the experimental group (mediation) performed significantly ($p < .001$) better than the comparison (standard) and control group on three out of three figural analogic reasoning tasks. Further, the experimental group also showed significant ($p < .01$) improvement in out-of-treatment figural analogic post-tests on the APM Set II. In addition, there was no examiner effect across the two treatment conditions and the mediation group invested significantly ($p < .05$) more time on APM II post-tests than did the comparison and control groups.

Santiago & Ana (1993) studied cognitive processes of children with Down Syndrome (DS) and others without DS but with mental retardation (MR) were assessed first in a standard static form, followed by a session of mediated learning and reassessment. The cognitive processes that were assessed comprised planning, simultaneous and successive processing. The subjects were 30 typically developing children 5-7 years of age, 60 children with MR and 30 children with DS between 9 and 12 years of age. The groups were comparable on the Columbia Mental Maturity Scale. The children with DS were particularly poor in successive processing and planning. The dynamic assessment involving mediated learning improved the DS children's successive processing more than planning or simultaneous processing. This implies a greater learning potential for successive processing, even though children with DS are known to be deficient in this type of processing; a very brief mediated learning session could ameliorate their deficiency.

Klein & Arieli (1997) commonly used methods for developing math readiness in young children frequently does not meet the needs of children with various developmental disorders. Furthermore, children may learn to use skills (such as counting by rote memory) that may be misused and actually interfere with the future development of their mathematical thinking. This study presents a model for designing a remedial approach for a population of children with special needs, including children with severe problems involving the understanding of numbers. The Meditational Intervention in Math (MIM)
shifts the focus of training the auditory sequential mode to the visual simultaneous mode ("right hemisphere"). In addition, the MIM approach exemplifies the use of a meditational approach in math. Subjects were thirty children with Down Syndrome, 5 to 7 years old. The subjects were randomly divided into two groups. Group 1 received weekly training using MIM approach, Group 2 did not participate in the program but their parents participated in MIM counseling including general information about the development of math skills and the MIM. Group 3 included children who were involved in an ongoing language and math enrichment program for one to three years. The MIM training lasted about 6 months. Six months following the intervention, a significant difference in children's performance on the Key Math Diagnostic Arithmetic Test was found in favor of Group 1. The children in Group 1 demonstrated a better understanding of basic mathematical concepts and problem solving abilities than the children in both other groups.

Kaufman & Burden (2004) aimed to draw upon a socio-cultural perspective for elucidating the process and outcome of peer learning interactions between young adults with serious learning disabilities. A heterogeneous group of ten young adults between ages of 18 and 27 participated in the year-long cognitive program based on the principles of Feuerstein's theory of mediated learning and Instrumental Enrichment (IE) program. Six of the participants had Down's syndrome and the others suffered from various disabilities including brain damage, and cerebral palsy. The program included 178 hours of IE cognitive intervention. The peer mediation process was supplemented by an additional emphasis upon collaborative group discussion at the end of every session. A post-positivist research design similar to the design experiment of Russian Vygotskians was employed in order to evaluate both the process and the outcomes of the intervention programme. The results show that after one year the participants' learning self-concept was well above average. Moreover, their reflections about how they had changed as a result of their involvement in the programme and their descriptions of what was required to provide effective mediation demonstrated deep levels of cognitive, emotional and social development.
2.3 EMOTIONAL INTELLIGENCE AND ACADEMIC ACHIEVEMENT

Stottlemyer (2002) examined emotional intelligence and its relationship to student achievement. The subjects of the study included 200 eleventh and twelfth grade students from three school districts in South Texas. Each subject was asked to complete a self report emotional intelligence assessment measure. Additional data examined included Texas Learning Index (TLI) scores in mathematics and reading from the Texas Assessment of Academic Skills (TAAS), a standardized test created by the state of Texas as part of its accountability system; gender; ethnicity; and socioeconomic status.

A factor analysis was used to examine the scale items of the instrument since the measure of emotional intelligence is still in the development stages. Pearson correlation and standard multiple regression statistical procedures were applied to examine the relationship between emotional intelligence skills and academic achievement. Differences in achievement according to gender, ethnicity, and socioeconomic status were also investigated. The results of the study showed that there is a significant relationship between selected emotional intelligence skills and academic achievement. Results also suggest that gender differences in achievement may be influenced by emotional intelligence. The resilience of students who succeed despite environmental and economic deficiencies may also be related to emotional intelligence. Interpersonal communication skills were significantly related to achievement.

Chao (2004) examined the association between these two components among private college students who learn English as a foreign language in Taipei, Taiwan. The sample population for this study was 306 private college students who enrolled as freshmen or sophomores in English in fulfilment of their study requirements. Data for the study were collected by using questionnaires that determine levels of foreign language anxiety and emotional intelligence skills. Descriptive statistics, comparison of means, and Pearson correlation statistical procedures were applied to examine the
relationship between foreign language anxiety and emotional intelligence skills across gender and language anxiety level.

The quantitative findings indicated that there is a significant relationship between foreign language anxiety and total emotional intelligence skills. Results also suggest that gender difference has an impact on how emotional intelligence skills are employed. Although this study did not focus on comparable cross-cultural groups, analysis indicates that emotional intelligence skills can serve as a global indicator of academic achievement and language learning. This study was significant in that it provides valuable data to those who serve on the front line of education. The research results may serve as a guide for foreign language teachers in terms of helping them to increase their understanding of language learning from the learner's perspective. This study can also provide insights into how educators can develop interventions to decrease language anxiety among EFL students. In addition, by understanding students' emotional intelligence skills and their relationship to language anxiety (and thus academic achievement), strategies and interventions to improve learners' self-confidence and lower their language anxiety can prove beneficial to all stakeholders.

Gerber (2004) investigated the relationship between EI and success in school for a sample of 51 eighth grade students. EI was measured by using the BarOn Emotional Quotient Inventory: Youth Version (Bar-On EQ-I: YV; Bar-On, R. & Parker, J, 2000). Success in school was measured by achievement scores, grades, extracurricular activities, absences, tardies, and discipline referrals. Results showed no significant differences between the students' mean overall Bar-On EQ-I: YV scores from pre- to post-intervention. Significant differences (p ≤ .01) were found in the students' mean Writing, Math, Spanish, and Science grades, discipline referrals, and tardies. On the Bar-On EQ-I: YV Interpersonal scale, females scored significantly (p < .05) higher than males. Results showed that students with Average to Above Average EI do not consistently perform better on measures of success in school than students with Below Average EI. Significant (p < .05) correlations were found between teacher-ratings, parent-ratings, and student self-ratings.
Drago (2005) examined the relationship between emotional intelligence and academic achievement in non-traditional college students. Because students differ in cognitive ability, with some students being better prepared for the collegiate environment than others, the role of emotional intelligence in academic achievement must be better understood. Non-cognitive factors such as emotional intelligence may supplement or enhance student cognitive ability. In this study, emotional intelligence, achievement motivation, anxiety, and cognitive ability were predictor variables. The criterion variable was academic achievement as measured by student Grade Point Averages GPA. Data were collected using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), the State-Trait Anxiety Inventory (STAI), the Achievement Motivation Profile (AMP), the Wonderlic Personnel Test (WPT), and the Student Demographic Survey (SDS). Bivariate and multivariate correlation and regression analyses were used to test the study's statistical hypotheses. Results demonstrated that emotional intelligence is significantly related to student GPA scores, student cognitive ability scores, and student age. Additionally, student anxiety was related to certain emotional intelligence abilities. No significant relationship, however, was found between emotional intelligence and achievement motivation. Overall, the results suggest that academic achievement is related to students' ability to recognize, use, and manage their emotions. This suggests the need to incorporate emotional intelligence curriculum into college degree programs to help students increase their emotional intelligence.

Parker, Duffy, Wood, Bond & Hogan (2005) examined the impact of emotional intelligence (EI) on the successful transition from high school to university. The short form of the Emotional Quotient Inventory (EQ-i) was completed by 1,426 first-year students attending four different universities within the first week of classes (September). At the end of the academic year (May), the students' cumulative Grade Point Averages GPA was used to identify two groups of students: academically successful (i.e., GPA of 3.0 or
better; n = 590) and academically unsuccessful (i.e., GPA of less than 2.0; n = 289) students. Results revealed that academically successful students had significantly higher levels of several different emotional and social competencies. These findings suggest that emotional intelligence plays an important role in the successful transition from high school to university.

Barisonek (2006) examined the relationship between Emotional Intelligence, academic achievement and academic production in third and sixth graders to determine if emotional intelligence contributes to academic production beyond the effects of academic achievement. A sample of scores on an emotional intelligence measure, Terra Nova scores and classroom grades were collected from 44 third and sixth grade students. Findings indicated no overall relationship between emotional intelligence and academic production (grades) when controlling for academic achievement. Avenues for future research are discussed.

Cyr (2007) examined the relationship between emotional intelligence and cognitive ability in predicting academic achievement by using Mayer, Salovey, and Caruso's (1997) four branched model of emotional intelligence. The Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT) research version 2.0 was used to predict performance in college. The predictive ability of emotional intelligence as measured by the MSCEIT was assessed by correlating MSCEIT scores from 237 Rutgers University students with their cumulative Grade Point Averages (GPA). The relative predictive ability of emotional intelligence over SAT and the incremental predictive validity were explored using a multiple regression analysis. Results did not find any significant prediction of performance by emotional intelligence alone, or combined with SAT. Emotional intelligence also did not account for any additional variance in GPA beyond that accounted for by cognitive ability as measured by SAT. This study did not substantiate claims that emotional intelligence will predict success in college.

Holt (2007) explored the relationship between emotional intelligence and academic achievement in undergraduate students in a community college in Southern California. Participants were surveyed for their demographic
characteristics, Scholastic Assessment Test scores, Grade Point Averages, levels of emotional intelligence as measured by Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), and their perceptions on their educational experiences. The results of statistical analyses indicate that GPAs are positively correlated with the Emotional Management task score, Social Management task score, Managing Emotions Branch score, and Emotional Reasoning Branch score on MSCEIT. Students' satisfaction with educational experience was positively correlated with Social Management task score. This study confirms a relationship between emotional intelligence and academic achievement, as measured by GPA.

This positive finding confirms existing studies, which suggest that emotional intelligence contributes to and enhances cognitive abilities in college students. Previous research has shown, and this study confirms, that there are both academic and non-academic factors in student success, and that emotional intelligence contributes to and enhances cognitive abilities in college students. Confirming this connection suggests the need to incorporate emotional intelligence training into secondary education curricula, which, in turn, will empower educators in enhancing academic outcomes of their students. It may also be advisable to add assessments of emotional intelligence to the admissions decision process. This research is important because a better understanding of student learning outcomes using proven quantitative tools provides empirical data for analysis. It will also assist educators in developing programs to improve learning. Furthermore, heightened levels of self-awareness in students will enable them to be successful in multiple spheres of life not limited to academia.

Rice (2007) studied that while the stated ultimate goal of education is academic achievement, attainment of that goal remains elusive. Many educators are making choices that increase academic rigor, sometimes at the expense of programs that might be more effective in meeting the achievement goal. Correlations between factors that possibly relate to academic achievement, such as emotional intelligence, could at least initiate a
discussion about attaining the objective of substantial academic achievement through avenues other than repeated classes of the subject matter.

Much controversy exists in education regarding the balance of intelligence quotient (IQ) and emotional intelligence (EQ). That is, an intense debate persists in secondary education over the importance of learning to read, write, master the sciences and social sciences, and solve mathematical equations versus the importance of adapting to the environment, working cooperatively, responsibly, effectively, and with confidence and passion (Goleman, 1998). Students who are weak in adaptability, assertiveness, decisiveness, empathy, or commitment could also be inclined to be weak academically. On the other hand, taking time away from the academic schedule to build such skills could degrade academic progress.

The Personal Skills Map is used in this study to explore the relationship of the emotional intelligence it measures to academic achievement as defined by grade point averages. Ten of 11 personal skills, participation in service learning, holding leadership positions, and leader/planner learning styles were found to be significantly correlated with grade point averages.

Bradshaw (2008) investigated the relationship between emotional intelligence factors and academic achievement in academically successful African American female college students. A purposive sample of 60 successful undergraduate female African American college students at local colleges and universities in a mid-Atlantic area were asked to voluntarily participate in this research study.

Participants were asked to complete quantitative testing instruments which included: (1) the Subject Demographic Survey, (2) the Mayer-Salovey-Caruso Emotional Intelligence Test, (3) the Bar-On Emotional Quotient Test: Short and (4) the Kaufman Brief Intelligence Test, Second Edition. Next, in-depth qualitative interviews were conducted with twenty academically successful college-aged African American females to clarify understanding and supplement findings presented in the quantitative portion of the study. The methodology chosen solicited the students' perceptions about emotional intelligence as they relate to academic achievement.
Quantitative findings from the current study revealed: (1) no statistically significant correlation between African American female college students' emotional intelligence level and their academic performance (GPA); (2) a weak correlation between Stress Management [a component of emotional intelligence] and the academic performance (GPA) of African American female college students and (3) no statistically significant difference between African American female college students' emotional intelligence level and their academic level. Qualitative findings from the current study provided explanatory power behind the quantitative findings because the qualitative interviews captured the components of the Bar-On Emotional Quotient Test: Short. The qualitative data also provided explanatory power beyond the quantitative findings in four additional themes: (1) a sense of identity as a woman, (2) association with African American heritage, (3) family structure or responsibility within the family structure, and (4) community connectedness and obligations.

Colston (2008) studied the relationship between emotional intelligence and academic achievement based on the birth order of nontraditional adult learners in a private liberal arts university based in Phoenix, Arizona. For the purpose of this co-relational study, a convenience sample, of 115 male and female adult nontraditional undergraduate learners at Ottawa University-Arizona during or after the Proseminar class, was selected. Measures for emotional intelligence, gender, and age were operationalized by the Bar-On Emotional Quotient Inventory (Bar-On EQ-i) survey instrument. Birth order was operationally defined as the sequence in which children are born into a family, such as first born, middle child, last born, and including only children. Social rank was included in this definition. Grade point average was based on a 4.0 scale reflecting all semester hours attempted by students, including transfer credits within the last five years from other institutions from the point of entry to Ottawa University. The statistical findings showed that there was a weak positive relationship between emotional intelligence and academic achievement of the adult learner in that the higher the participant's emotional intelligence, the more likely the participant will have a high grade point average; similarly for the converse. Further analysis showed that the
relationship between EQ and GPA did not vary across individuals with different birth order. However, one test revealed that the measures for Birth Order and Emotional Intelligence were significantly related to the GPA measures for academic achievement.

Izaguirre (2008) investigated the relationship among emotional intelligence, academic achievement, and demographic characteristics in first-year community college students. A quantitative research methodology was designed for this research. This study utilized end-of-semester grade point average to measure academic achievement and the online Emotional Quotient Inventory (EQ-i) to assess emotional intelligence. A convenience sample of 199 students was used for statistical analysis. Data analysis included frequencies, percentages, mean scores, t-tests, one-way ANOVA with post-hoc tests, Pearson correlation, Spearman rho correlation, multiple regression, and logistic regression. The statistical data were computed by SPSS 16.0 for Windows at alpha levels of .05 or lower.

The findings in this research study do not support the existence of a relationship between overall emotional intelligence as measured by the EQ-i and academic achievement as measured by GPA. However, a relationship was found between academic achievement and the emotional intelligence subscales of Social Responsibility and Problem Solving. Differences in emotional intelligence and subscales were discovered among various demographic groups. Differences were found between age groups in Stress Management and Adaptability emotional intelligence scales. Differences were discovered between genders in the Interpersonal emotional intelligence scale. In addition, students with parental responsibilities scored higher in the Interpersonal and Adaptability emotional intelligence scales. Further, findings revealed significant differences between ethnic groups in Intrapersonal emotional intelligence scales. Students who had been divorced and students who were employed scored higher in Adaptability subscale. Moreover, the present study found differences between gender and marital status groups and academic achievement.
This study found a predictive relationship among academic achievement and Independence, Empathy, Social Responsibility, Flexibility, and Problem Solving emotional intelligence subscales. Further, a weak predictive ability of academic achievement was found for age, gender, and marital status.

Parnell (2008) conducted a research to find if emotional intelligence is relative to both the academic achievement and behavior of the students. Current research has shown a relationship between emotional intelligence and traditional school success measures of test scores and discipline referrals but is limited in its research among elementary school settings and whether or not emotional intelligence may be a relative factor in the Black-White achievement gap.

This study helps to close the gap in the literature concerning the emotional intelligence of elementary school students and the relationship that emotional intelligence may have on the Black-White achievement gap. The study sample was comprised of 76 second through fourth grade students in a school in Mississippi. Statistical descriptions as to the extent to which these relationships may exist were derived from bi-variate and multivariate regression analyses. Emotional intelligence was measured using the Bar-On Emotional Quotient Inventory: Youth Version and Mississippi Curriculum standardized test scores (MCT). Student discipline referrals were used as measures of school success. Results of the study showed a significant relationship between emotional intelligence and academic success and gender. A slight statistically significant difference was found between emotional intelligence and race, indicating that emotional intelligence may be a component of the Black-White achievement gap. Based on the results, implications for educational and social change are discussed.

Wraight (2008) elucidated the empirical and practical nature of emotional intelligence, cognitive style, and personality in relationship to college students’ academic achievement and life satisfaction. Significant differences across gender, race, grade level, academic major, and students’ emotional intelligence, cognitive style, and personality variants were also
examined. A sample of 243 undergraduate students volunteered to complete multiple self-report instruments for the data collection process. Data was then aggregated and analyzed using multiple regression, analysis of variance, and simple correlations. The results indicated that personality is the most powerful predictor of student's academic achievement and life satisfaction. However, emotional intelligence also had an important role in scholastic success. The study concludes with a discussion of results, limitations, and implications for research and practitioners.

Afolabi, Ogunmwonyi & Okediji (2009) examined the influence of emotional intelligence and need for achievement on interpersonal relations and academic achievement of undergraduates. Questionnaires were administered to one hundred and ten (110) subjects. The independent variables are emotional intelligence and need for achievement, while the dependent variables are interpersonal relations and academic achievement. Independent t-test and analysis of variance was used to analyze the data. Results of hypothesis 1 confirmed that emotional intelligence has a significant influence on interpersonal relations ($t = 1.83; df = 108$, p less than 0.05). It was also confirmed (hypothesis 2) that emotional intelligence has significant influence on need for achievement among undergraduates ($t = 1.51; df = 108$, p less than 0.05). Hypothesis 3 was partially supported as emotional intelligence $F(1, 106) = 4.61; p, 0.05$ and need for achievement $F(1, 106) = 5.03$ had significant influence on academic achievement. However, the interaction effect of emotional intelligence and need for achievement was not significant $F (1, 106) = 2.15; N.S.$

Alvarez & Jose (2009) studied correlation between emotional intelligence and academic performance of students in natural sciences from the University of Puerto Rico, Rio Piedras campus. The population is approximately 2,539 students, with a sample of approximately 337 students. The instrument used to calculate the IE is the TMSS-24 composed of three dimensions of the original scale: Attention, Clarity and Repair. It was validated by Fernandez, B. P., Extremera, N. and Natalio, R. (2004), with reliability in Attention of (0.86), Clarity (0.90) and Repair (0.86). The variables emotional
intelligence and its components with academic achievement (RA), Index of general application of the student, gender, age and studies concentration were correlated but it was founded no correlation between them. It was founded a difference in the attention on gender, where it is concluded that woman express better and more the feelings than men.

Wendorf & Kay (2009) determined whether a relationship exists between emotional intelligence and research-based school leadership practices. A random sample of 285 public school K-12 principals in the state of Wisconsin was surveyed using a valid, reliable, two-part instrument designed by the researcher. Part one of the survey measured principals' engagement in the 21 leadership practices. Part two of the survey measured principals' emotional intelligence. Correlation research was conducted using the two parts of the self-report survey and results were analyzed. Additionally, eleven principals from the survey sample, demonstrating high levels of emotional intelligence and high levels of engagement in research-based school leadership practices, were interviewed to gain further insight into their formation as leaders and their leadership practice.

Results of the study indicate that there is a strong, positive correlation between emotional intelligence and research-based school leadership practices and that the development of emotional intelligence is influenced by identifiable and replicable factors. Therefore, it is reasonable to conclude that districts that make an intentional effort to create awareness of emotional intelligence, as well as to hire, develop, and retain emotionally intelligent school leaders may be more likely to reach their organizational goals related to increasing the academic achievement of all students.

Kohaut (2010) examined the relationship between students' emotional intelligence and their academic achievement and to conduct an exploratory analysis of the data to examine differences in emotional intelligence between racial/ethnic groups. Students completed the Bar-On Emotional Quotient Inventory Youth Version. Students' final grades were taken from their final reports and standardized test scores. The number of discipline referrals was taken from school records. Analysis of the correlations between students'
emotional intelligence and their academic achievement revealed positive correlations between the total emotional quotients on the Bar-On EQ-i: YV and grades and total emotional quotient negatively correlated with number of discipline referrals. The stress management and adaptability scales of the Bar-On EQ-i: YV correlated or approached significance in relation to students' standardized test scores. Lastly, no differences were found between students' racial/ethnic affiliation and their emotional intelligence.

Nelson (2010) explored the influence of emotional intelligence on closing the achievement gap. A study of 142 eleventh grade students was conducted in a small urban school district, examining relationships between student scores on the Mayer, Salovey, and Caruso Emotional Intelligence Test: Youth Version and the Virginia Standards of Learning End-of-Course Reading Assessment. Multiple regressions and the parametric test, analysis of variance, were used to analyze the data and help to answer the research question is emotional intelligence a predictor of academic achievement. Insight into the role of emotional intelligence was gained through the finding that emotional intelligence plays a significant role in predicting academic achievement for all students but more specifically for at-risk students. The results of this study can be used to promote social change within public schools that have been focused primarily on cognitive skills without fully considering the role and potential of emotional development in promoting academic success. These results support the incorporation of instructional strategies that develop emotional intelligence and provide a basis for further inquiry in this area.

2.4 ANXIETY AND ACADEMIC ACHIEVEMENT

Pite (1996) investigated the relationships between language anxiety and achievement in oral English performance by Japanese students of English as a foreign language (EFL). Students' anxiety about situations requiring oral ability was measured using the Foreign Language Classroom Anxiety Scale, and compared statistically with a measure of their actual ability. Subjects were 67 students at a Japanese high school. Results indicate no
correlation between anxiety and oral English performance. Several explanations for this variation from findings in North America are considered. The instruments used in the study are appended.

Trimarco (1997) designed the study to measure anxieties, expectations, achievement levels, and the mastery of research and statistics prior to and after the completion of a research methods course by 109 graduate students (85 female and 24 male). Subjects completed surveys and pretests to measure anxiety, perceptions about research and statistics, and expectations related to research and statistics. Results were consistent with the expectation that subjects reporting a greater breadth of knowledge (self-efficacy) reported less anxiety. At the end of the course, 69.4% of female students reported expectations to learn statistics in comparison with 38.8% before the class. Female students gained enough confidence to conclude that they would be able to understand and use research. No significant relationship was found between anxiety levels and gender. Appendixes contain the course syllabus, reported levels of anxiety, and the pre- and post-questionnaires.

Hancock (2001) investigated the interactive effects of students' levels of test anxiety and teachers' evaluation practices (evaluative threat) on the achievement and motivation of graduate students randomly assigned to high or low evaluative threat conditions. All students, but particularly test-anxious students, performed poorly and were less motivated when exposed to highly evaluative classrooms. (SM)

Horwitz (2001) considered the literature on language learning anxiety in an effort to clarify the relationship between anxiety and second language learning. Suggests that anxiety is indeed a cause of poor language learning in some individuals and discusses possible sources of this anxiety.

Tsai & Tsai (2003) revealed that students with higher-order metacognitive skills in monitoring their comprehension, selecting main ideas, and using resources helpful for learning tended to have higher computer achievement, better computer attitudes, and lower computer anxiety.
Ma & Jiangming (2004) aimed to determine the causal ordering between mathematics anxiety and mathematics achievement. Results of structural equation modeling showed that, across the entire junior and senior high school, prior low mathematics achievement significantly related to later high mathematics anxiety, but prior high mathematics anxiety hardly related to later low mathematics achievement. Mathematics achievement was more reliably stable from year to year than mathematics anxiety. There were statistically significant gender differences in the causal ordering between mathematics anxiety and mathematics achievement. Prior low mathematics achievement significantly related to later high mathematics anxiety for boys across the entire junior and senior high school but for girls at critical transition points only. Mathematics anxiety was more reliably stable from year to year among girls than among boys.

Tanaka, Takehara & Yamauchi (2006) aimed at testing the linkages between achievement goals to task performance, as mediated by state anxiety arousal. Performance expectancy was also examined as antecedents of achievement goals. A presentation task in a computer practice class was used as achievement task. Fifty-three undergraduates (37 females and 16 males) were administered self-report questionnaire measures before and immediately following the task performance. As expected, results of regression analyses showed that performance-avoidance goals were positively related to state anxiety. State anxiety was related to poor task performance. The positive relationship between mastery goals and the task score was shown to be independent of anxiety processes. Performance expectancy was related to state anxiety through achievement goals.

Raju & Asfaw (2009) investigated the predictive nature of test anxiety on achievement in the presence of perceived general academic self-concept, study habits, parental involvement in children's learning and socio-economic status. From a population of 2482 Grade 6 students from seven government primary schools of a sub-city in Addis Ababa, 497 participants were randomly selected namely 248 boys and 249 girls. The mean age of the participants was 12.98 years. An adapted version of Sarason's Test Anxiety Scale (28
items), plus the General Academic Self-Concept Scale (18 items), and Parental Involvement (10 items), Study Habits (10 items) and Socio-Economic Status (10 items) scales developed by the authors were the instruments of the study. The findings of the study indicated: (a) test anxiety correlated with achievement with a weak correlation of -0.186; and (b) perceived general academic self-concept and study habits were positively and significantly related to achievement. Stepwise multiple regressions on achievement resulted in the selection of general academic self-concept, study habits and parental involvement as significant contributors to achievement in that order. Test anxiety was found to be a non-predictor of achievement in the presence of other variables.

Kyttala & Bjorn (2010) investigated the role and impact of prior mathematics performance, cognitive appraisals and mathematics-specific, affective anxiety in determining later mathematics achievement and future career orientation among Finnish adolescents. The basic ideas of the control-value theory, assumed to be culturally universal, and previous controversial results regarding the relationship between mathematics anxiety and mathematics achievement were tested in the Finnish cultural context with a longitudinal design. The key premise of the control-value theory is that control and value appraisals are significant determinants of both activity and outcome achievement emotions. Our results suggest that mathematics anxiety, a prospective outcome emotion, is determined by outcome expectancies (success or failure) and outcome value (the importance of performing well). They also suggest that anxiety as a negative affective emotion is a problem not only for those who perform poorly but probably also for certain pupils across all achievement levels. Compared with the performance level and with the boys, the girls exhibited inaccurately low outcome expectancies in mathematics. These low expectancies connected to the negative value of failure are a potential cause for their higher anxiety level.
2.5 SUMMARY OF RELATED LITERATURE

The summary of above studies related to learning disabled students in terms of cognitive strategies, emotional intelligence, anxiety and academic achievement is presented below.

Fisher, Allen & Kose (1996) studied that boys with LD reported significantly higher pretest trait and state anxiety on the State-Trait Anxiety Inventory for Children than did NLD boys, and their perceived state anxiety escalated over the course of the problem-solving session.

Hawke, Olson, Willcut & Wadsworth (2009) investigated the relationship between emotional intelligence and IQ scores in a research sample of students with learning disabilities. Emotional intelligence (EI) may provide information about non-intellective factors in the achievement and adjustment of students with learning disabilities.

Narimani, Ahari, Homeily & Siahpoosh, (2009) studied that emotional intelligence is correlated with behavior problems. Furthermore, dyslexic children scored lower on emotional intelligence and higher on behavior problems than their normal counterparts.

Saenz (2010) identified key emotional intelligence skills that are essential to the academic achievement and personal development of students with learning disabilities. In the current study there were no statistically significant findings in Verbal, Performance, and Full Scale IQ when compared to emotional intelligence. Special education personnel, counsellors, and teachers may fend important uses of EI in designing educational interventions for students with learning disabilities. A value of the study could be that educators could use emotional intelligence to enhance academic and career performance of students with learning disabilities.

positive effect of self monitoring technique on academic achievement. Mathew (2000) found self instructional material better than traditional method in case of learning disabled students as compared to non learning disabled students. Khalil, Nelson & Kibble (2010) found positive effect of self learning material on achievement.

Griffin & Griffin (1995) indicated that the RPT procedure had no statistically significant effects on either achievement or self-efficacy, but did increase test anxiety. Almanza & Estella (1999) found no evidence of improvement on the informal reading comprehension measures across the study after being subjected to reciprocal teaching. Zender (1991) found no significant effect of self monitoring technique on academic achievement. Williams (2009) found that self regulated learning did not predict academic achievement. This may be due to deficiencies in meta cognition due to learning disability.


Afolabi, Ogunmwonyi & Okediji (2009) also studied that the interaction effect of emotional intelligence and need for achievement was not significant F(1, 106) = 2.15; N.S.

Pite (1996), Raju & Asfaw (2009) studied that test anxiety was found to be a non-predictor of achievement in the presence of other variables.

2.6 EMERGENCE OF THE PROBLEM

The school as a whole and classroom in particular has so many students in it, that each student is different from the other because of individual differences. These individual differences can be due to various socio-economic factors, family background and environment and may be hereditary. These lead to difference in their intelligence level. The students who are close to each other can be bracketed together and put to same treatment in the form of teaching learning in education. But there are some students, which probably develop a special type of condition or learning disability which hinder their learning and need special treatment in education. It has been found that about 13-14% of the school population nationwide has a handicapping condition that qualifies them for special education. One-half of all the students who qualify for special education are classified as having a learning disability (LD) (6-7%). About 85% of those learning disable students have a primary learning disability in reading and language processing. Nevertheless, many more people — perhaps as many as 15-20% of the population as a whole — have some of the symptoms of dyslexia, including slow or inaccurate reading, poor spelling, poor writing, or mixing up similar words. People who are very bright can be dyslexic.

As high percentage of these learning disabled students have a primary learning disability in reading and language processing so the problem in language comprehension may affect the performance of the students in other subjects, such as, Science. Science is a cumulative and endless series of empirical observations which result in the formation of concepts and theories, with both concept and theories being subject to modifications in light of further empirical observations. Science is both a body of knowledge and the process of acquiring and refining knowledge.
According to Conant (1964), science is an interconnected series of concepts and conceptual schemes that have developed as a result of experimentation and observation and are fruitful of further experimentation and observations. Science has influenced every aspect of man's existence. Starting from the cells of human body to the biggest object of the universe everything is in the preview of science. The future of man on earth will be decided by advancements in science. Hence, science has found a respectable place in school curriculum all over the world. In India, Science has been made a compulsory school subject at every stage of school. According to Bloom (1956), the educational objectives of teaching of Science have been classified into three domains:

- Cognitive Domain
- Affective Domain
- Psychomotor Domain

According to revised Bloom's Taxonomy by Anderson and Krathwohl (2001), cognitive domain is further classified into six classes, that is, Remember, Understand, Apply, Analyze, Evaluate, and Create. Remembering is Retrieving, recalling, or recognizing knowledge from memory. Remembering is when memory is used to produce definitions, facts, or lists, or recite or retrieve material. Understanding is constructing meaning from different types of functions be they written or graphic messages activities like interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining. Applying is carrying out or using a procedure through executing, or implementing. Applying related and refers to situations where learned material is used through products like models, presentations, interviews or simulations. Analyzing is breaking material or concepts into parts, determining how the parts relate or interrelate to one another or to an overall structure or purpose. Mental actions included in this function are differentiating, organizing, and attributing, as well as being able to distinguish between the components or parts. When one is analyzing he/she can illustrate this mental function by creating spreadsheets, surveys, charts, or diagrams, or graphic representations. Evaluating is making judgments based
Review of Related Literature

on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation. In the newer taxonomy evaluation comes before creating as it is often a necessary part of the precursory behavior before creating something. Creating is putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way or synthesize parts into something new and different a new form or product. This process is the most difficult mental function in the new taxonomy.

To achieve these objectives instructional material in the form of books and other printed material are available at all levels. Child reads the material or listens to the teacher and tries to comprehend/understand the material to achieve the higher objectives. If child due to any difficulty or disorder fails to read or comprehend the material then his potential of achieving the higher objectives is restricted.

In case of dyslexic children, the basic reading skills are the problem area. They struggle in reading fluently and falter at spellings in the early stage of their life. Later the problem becomes more complex and grave. Due to the problems in basic reading skills their reading comprehension is affected to the greater extent. Generally, students with learning disability in reading comprehension read aloud but they do not understand or remember what they have read. They read words and phrases with no feelings, no change in tone or rhythm or pace. They have difficulty in understanding ideas in reading passages. Their phrasing and fluency are often weak. They frequently avoid reading and are frustrated with reading tasks.

Naturally, reading comprehension problems affect the achievement in the subject of science also. In-spite of having normal intelligence and educational opportunities, there is a significant gap between the expected level of performance and actual achievement in science. There may be other factors contributing to the low achievement but reading comprehension disorder contributes a lot towards it in the subject of science.
Science as a discipline includes facts, concepts, explanation, interpretation, translation, reasoning, analysis and many higher order learning and thinking skills. These areas relate to receptive and expressive part of language communication. The problems in these areas points towards learning disorder or learning disabilities. Researcher could not find any studies relating to science and learning disability.

It has also been found that emotional intelligence and anxiety affects the achievement of learning disabled students. Going through the related literature, the investigator found the studies showing different results related to emotional intelligence and anxiety. Gerber (2004), Barisonek (2006), Bradshaw (2008), Colston (2008), Izaguirre (2008) and Alvarez & Jose (2009), showed a no or a weak correlation between emotional intelligence and academic achievement. Cyr (2007) studied that there were no substantial evidence of emotional intelligence predicting success.


Afolabi, Ogunmwonyi & Okediji (2009) also studied that the interaction effect of emotional intelligence and need for achievement was not significant F(1, 106) = 2.15; N.S.


Pite (1996), Raju & Asfaw (2009) studied that test anxiety was found to be a non-predictor of achievement in the presence of other variables.

The prevalence of learning disability among the students and its presumed affect on science subject developed the interest of investigator in
Review of Related Literature

The contradictory studies about emotional intelligence and anxiety created further interest of investigator in the study. Thus the present study was undertaken.

2.7 HYPOTHESES OF THE STUDY

The study was conducted to test the following hypotheses:

- There is no significant difference in the achievement of learning disabled students exposed to three cognitive strategies.
- There is no significant difference in the achievement of learning disabled students with high and low emotional intelligence irrespective of cognitive strategies.
- There is no significant difference in the achievement of learning disabled students with high and low anxiety levels irrespective of cognitive strategies.

Interactional Hypotheses

First Order Interaction

- There is no significant interaction between cognitive strategies and emotional intelligence on academic achievement of learning disabled students.
- There is no significant interaction between cognitive strategies and anxiety on academic achievement of learning disabled students.
- There is no significant interaction between emotional intelligence and anxiety on academic achievement of learning disabled students.

Second Order Interaction

- There is no significant interaction among emotional Intelligence and anxiety and cognitive strategies on academic achievement of learning disabled students.