Chapter II
REVIEW OF RELATED LITERATURE

The research scholar has gone through the available related literatures, which were relevant to the present study. The relevant studies found in the various sources, which the researcher has come across, are given in this chapter. The search for causative factors and methods of remediation has ranged over widely diverse areas. However, the core subjects, such as mathematics and science, have remained the major focus of academic achievement research. Much of the literature concerned with the utilization of various techniques to improve scores on standardized tests. Despite the amount research on academic achievement in schoolchildren, this researcher found little attention given on low achieving children’s areas of competency.

Sook Hee (1996), conducted a study to investigate the relationships among K-MIDAS, intelligent quotient and scholastic achievement and compared the students from academic high schools and from other types of high schools. The subjects were 560 students in total from academic high school and other types of high schools. Out of 560 students 200 were selected for from academic schools the analysis of the relationships of intelligent quotient and scholastic academic achievement. The results show that Logical-Mathematical, interpersonal, spatial, and linguistic Intelligence of multiple intelligence showed significant positive correlations with intelligence and academic achievement. In addition, Logical-Mathematical, Intrapersonal
Intelligence showed significant positive correlations with the academic achievement of almost all of the subjects. Intrapersonal Intelligence had shown significant positive correlations with academic achievement when the effects of intelligence quotient were partially ousted. The students from academic high school got relatively high scores in all intelligences. The results showed that academic high school and other types of high school students have different types of intellectual ability in general. Therefore, it is necessary to take into account the various levels of intellectual abilities of students in school and academic achievement. A significant positive correlation with intelligence quotient and scholastic achievement may predict that scholastic achievement to some extent as well as traditional intelligence.

Kim (1999), conducted a study to investigate the relationships in multiple intelligence, intelligence quotient and school achievement. The subjects were 1165 students in elementary, middle, high schools. Among them, 82 students in middle school were selected for analyzing the relationship with intelligence quotient and school achievement. The spatial intelligence showed a relationship with intelligence quotient and school achievement. Linguistic intelligence and interpersonal intelligence showed affirmative correlations with school achievement. In relation to ranks of multiple intelligence, roughly, intrapersonal intelligence was the highest in all grades and bodily-kinesthetic intelligence was the lowest. The ranks in spatial intelligence logical-mathematical intelligence, intrapersonal intelligence have changed according to
increase of grade. These trends were different in each sex. The standard deviation of female was larger than that of male. In all sex, intrapersonal intelligence was the highest and bodily-kinesthetic intelligence was the lowest. Musical intelligence was higher in female. In both sexes, largely the standard deviations increased according to the escalating grade. The sex difference in the profiles and ranks of multiple intelligence was larger in elementary and middle school than other school grades.

Ramin & Hosseini (2008), did a study on multiple intelligences and language learning strategies: Investigating possible relations. Ninety subjects participated in the study. In the literature dealing with variables affecting the rate route of second language learning, no explicit reference is made to the effect of intelligence on the process, and if there is any reference, the intention has been to downgrade the importance of the construct. The important point to be borne in mind is that most studies have maintained the traditional view of intelligence and employed the traditional intelligence quotient tests as the instrument to measure participant’s intelligence. The co relational analysis of the results indicated significant relations between the use of language learning strategies and intelligence quotient scores of the learners. Musical intelligence, however, did not correlate with any aspect of strategy use, and bodily-kinesthetic intelligence correlated only with memory learning strategies.

Haffman (1995), did a study on the impact of special placement on the socio-emotional factors and academic achievement among male students in
special education placements. Many children with learning disabilities experience low social status, low self-concept and have significant difficulties in their behavioral conduct. These deficits could be either primary or secondary to their problems. Unfortunately, it is difficult to know just how many of these significant problems are a function of the class placement, or is due to other extraneous factors. Utilizing hypotheses adduced from social comparison theory and group reference theory, this study was designed to evaluate the impact of special placement up on the socio-emotional factors of academically handicapped students. The subjects were 36 high school male students, ranging in age from 16 to 18 years of age, who have been referred to the committee on special education. Data analysis, utilizing 3x2 repeated measures MANOVA, indicated that a significant interaction effect was apparent for the 3 placement groups; on their academic grades, as well as the clinical maladjustment and externalizing problems scale. These results indicated that the special placement seem to significantly affect the student emotionally, as well as academically.

Lin, Ryue, & Kim (1999), conducted a study to identify the effectiveness of interpersonal and intrapersonal intelligence program among multiple intelligence.

The contents of the study were as follows:

1. What are the contents and model of interpersonal and intrapersonal intelligence program?
2. Is there any effectiveness of interpersonal elementary schools from whole country? The procedure was proceeded in order as follows; development the models of program and contents, pre-test program execution and post-test. The results of the study were as follows:

3. The model of interpersonal and intrapersonal intelligence program must include two points; first is the development of capacity to deal appropriately intellectual and personal strengths and weakness of self and other person, second is the development of the as capacity to deal and meet appropriately emotion, intention and desire of self and other person. It showed the effectiveness of interpersonal and intrapersonal intelligence program.

Doss (1992), conducted a study to understand the relationship between low achievement test scores and motor ability. Fifty students were drawn from two metropolitan school districts based on their fourth grade scores on the Iowa Tests of Basic skills. No gender difference was found in the sample. The resulting data were subjected to t-tests and chi square analysis. The t-test analysis yielded no significance at the 0.5 level, except for one small sub-group, which was judged an anomaly. The chi square yielded significance of 9.9 at 3 degrees of freedom, which is significant at .0194. Therefore, an inverse or negative relationship was established for these subjects between their verbal and computational achievement scores and motor ability scores. This correlational study found that low achievers as a group, identified by achievement
test scores, scored above the mean on a measure of motor ability. For children who are struggling to achieve in school, it would seem prudent to explore their strengths in other areas of intelligence.

In an article about intelligence in Microsoft Encarta (2008) Detterman, stated that many studies have examined whether gender differences exist in intelligence. The question is a very complicated one. One problem is that test makers sometimes eliminate questions that show differences between males and females to eliminate bias from the test, therefore, may not show gender differences even if they exist. Even when gender differences have been explicitly studied, they are hard to detect because they tend to be small. Many studies have been examined whether gender difference exists in mathematical ability, but the results have been inconsistent. In 1990, American researchers statistically combined the results of more than 100 studies on gender differences in mathematics using a technique known as meta-analysis. They found no significant differences in the average scores of males and females on math tests. Research also indicates that the average girl’s grades in mathematics courses equal or exceed those of the average boy. Other studies have found that boys and girls perform equally well on math achievement tests during elementary school, but that girls begin to fall behind boys in later years. For example, male high school seniors average about 45 points higher on the math portion of the SAT than do females.
If gender influences account for between 40 and 80 percent of the variation in intelligence, then environmental influences account for between 20 and 60 percent of the total variation. Environmental factors comprise all the stimuli a person encounters from conception to death, including food, cultural information, education, and social experiences. Although it is known that environmental factors can be potent forces in shaping intelligence, it is not understood exactly how they contribute to intelligence. In fact, scientists have identified few specific environmental variables that have direct, unambiguous effects on intelligence. Many environmental variables have small effects and differ in their effect on each person, making them difficult to identify.

Educators have focused much attention on explaining why some ethnic groups perform more poorly than others on measures of intelligence and academic achievement particularly Asian Americans, perform so well academically. One explanation points to Asian cultural values and family practices that place central importance on academic achievement link success in school with later occupational success.

Dr. Lok David (2008), investigated the relationship between individuals’ achievement strategy adopted in academic setting, their Big Five personality, and their academic achievement. This study also examined whether achievement strategy groups (i.e., optimism, defensive pessimism, self-handicapping, and learned helplessness) could be identified in the Hong Kong education context, and how these achievement strategies may be related to personalities. Methods:
Participants were three groups of students at different educational level (lower secondary school, upper secondary school, and university undergraduate). They completed questionnaires that assess their achievement strategy in academic context, their personality dimension, and their achievement outcome. Results: The present study found consistent patterns of relationship between personality, achievement strategy, and academic achievement across the three educational levels. The personality dimension of conscientiousness has the strongest relationship with academic achievement. Cognitive and behavioral achievement strategies were also related to academic achievement across the educational groups. Discussion: This study demonstrates the importance of the relationship between personality, achievement strategy, and academic achievement. Educators may have a better educational planning in the future.

Dr. Lok David Ping Pui, (2008), Achievement strategies and big five personality: Relationship with academic achievement. Applied social studies-undergraduate final year projects-psychology City University of, Hong Kong.

Susan Vogel (1990), did a study on gender differences in intelligence and found that a substantial body of research confirms higher verbal ability in normally achieving females and higher visual-spatial and mathematical abilities in normally achieving males. However, the specific nature of these differences varies by age, specific measure, magnitude, and variability within the groups. Re-analysis of earlier research showed that, although differences in visual-spatial ability were larger than verbal ability differences, gender differences did
not account for more than 1% to 5% of the group variance. In the population with learning disabilities (LD), research must be interpreted cautiously because learning disabilities. Samples were drawn mainly from the system-identified population and may reflect selection bias. Findings indicate that system-identified females with learning disabilities are lower in intelligence quotient, have more severe academic achievement deficits in some aspects of reading and math, and are somewhat better in visual-motor abilities, spelling, and written language mechanics than males with learning disabilities. In mathematics, however, it is difficult to document consistent differences in computational skills in the elementary school ages. More consistent findings, however, indicate superiority in mathematical reasoning in males with learning disabilities. A limited number of studies on research-identified samples indicate that findings from studies of school-identified learning disability samples must be interpreted cautiously because females with learning disabilities identified in the schools may not be representative of females with learning disabilities in general.

Miller (2009), conducted a study about geographical centrality as an explanation for Racial Differences in intelligence. He found that intelligence is affected by many different genes. It has also plausible been subject to unidirectional selection. Calculations show that favorable mutations would move at a rate that was slow relative to the time since modern human symbolic culture emerged. This makes it very likely that geographical differences in the
frequencies of various intelligence related genes exist. With unidirectional selection in a polygenetic system, it is meaningful to talk about some areas being more advanced than others are (since there is a direction in which all are moving). Centrally located populations will normally be more advanced. Genes will move faster in thinly populated areas. The thinly populated areas can serve as genetic freeways that carry genes rapidly across continents. The alternative to be presented here is that some populations were reached more quickly by more of the mutations that produce high intelligence. These became the more intelligent populations. Other populations, those that were less accessible to intelligence increasing mutations, lagged in intelligence. Thus, the populations reached by the largest numbers of such mutations would have the highest average intelligence. Most populations experienced selection for intelligence, although its strength may have differed.

Using Howard Gardner’s theory of multiple intelligence, Thomas Armstrong (1987), conducted a study describing strengths in children identified as “Learning- Disabled”. This study was undertaken because it was noted that while numerous studies existed detailing the specific deficits of children identified as “learning disabled”, few studies existed which emphasized strengths of children identified as “learning disabled” by collecting and interpreting data from four sources: parent questionnaires, parent interviews, children’s personal documents (drawings, photographs, work samples etc.) and naturalistic observation. The primary suppositions of the study were that
strengths would be found most often in intelligence categories de-emphasized by our culture (especially visual–spatial and bodily-kinesthetic intelligences) and that strengths would be found least often in intelligence categories most emphasized by our culture categories (especially linguistic–verbal and logical mathematical intelligences). The suppositions of the study were generally supported by the data although it was noted that strengths were found in all seven intelligence categories. Questionnaire results of 98 items grouped according to Gardner’s seven intelligences indicated that parent’s checked items having to do with visual-spatial and bodily-kinesthetic intelligence more often than items having to do with linguistic-verbal and logical–mathematical intelligence.

Joyce Michelina (2003), did a study on the quantitative procedures to measure to what extent a tactile/kinesthetic art approach using clay would help low achieving or developmentally delayed kindergarten students learn the alphabet. The findings support the theory that kinesthetic/tactile perception is a primary channel for early learning. In spite of the apparent importance of kinesthetic methods, multisensory learning, and manipulative materials, few programs that incorporate kinesthetic/tactile pedagogy. Interdisciplinary arts-based teaching addresses the multiple intelligences of individual children and their different learning styles.

Stedman (1986), in his book a new looks at the effective school literature, mentioned that Meiers, an instructor who taught in Chicago,
Philadelphia, and New York city, has done research in the area of low achievement, wrote:

Anyone today who visits elementary schools that are attended mainly by low-income children notes the prevalence of programmed scripts based on behavior-modification techniques, reading ‘kits’ consisting of hundred of unrelated paragraphs followed by multiple choice questions and reams of ditto sheets. However, class schools are often devoid of books (except perhaps instead of libraries they have remedial reading and audiovisual ‘labs’. It is not universal, but it is common.

In a study of reading under-achievement among elementary school children, Levy (1968) examined fourteen etiological factors. Factors studied were: (1) birth order; (2) number of older and younger siblings; (3) number of other family members with a history of reading problem; (4) educational level of parents; (5) occupational status of parents; (6) handedness; (7) eyedness; (8) dominance; (9) term of gestation; (10) duration of labor; (11) complication of birth (12) attitude of time toward reading problem of child toward school; (13) attitude of parents toward reading problem of child; and (14) family disorganization. Eighty primary and intermediate grade school children were classified in to four groups of twenty each on the basic of grade level and degrees of reading retardation. The findings of the study suggested that emotional and environmental issues are more significant in differences of
reading achievement than are physical factors. The result also indicates that the system of classification fails to encompass all types of readings problems.

In a study on the curriculum and instructional education, based on Howard Gardeners Theory of Multiple Intelligences Elizabeth Moore (1997) conducted a cross-case survey to answer the following questions: Does teaching to a student’s individual intelligences as defined by Howard Gardner have an affect on student’s progress? Progress is defined as steady improvement or advancement in a particular area. Secondly, the variables that influence the relationship between matching individual intelligence to a particular type of instruction were examined. Similarities and differences were examined and conclusions were drawn from the studies. Studies revealed that the use of Gardner’s theory in school does serve to heighten student progress in an indirect way. The theory serves to heighten the awareness of student needs in many different types of classroom settings. Additionally, Gardner’s Theory has positive influences when developing curriculum, utilizing cooperative education, and working with different population of students. Finally, the use of Gardner’s Theory enables educators to create learning environments that had better enable all types of students to learn.

Thomas J. Gallagher (1991), conducted a study on the patterns of crystallizing experiences among eminent individuals. Beyond the generally accepted influences of cultural/social pressures, expectations and opportunities, it has not yet been determined if there are independent, universal, definable and
manipulable triggering mechanisms that have the potential to cause intelligence/creative people who at promise of eminence to focus their energies and abilities in ways that will ultimately culminate in their actualization. Such triggering mechanisms (crystallizing experiences), if they exist, could prove to be invaluable educational tools. Using the concept of multiple intelligences proposed by Gardner, and the operational definition of eminence constructed by Goertzel and Goertzel this research was designed to search the lives of eminent people. Who lived to the twentieth century for what Walters and Gardner refer to as crystallizing experiences? Drawing from a subject pool of 895 eminent individuals, this project identified 79 individuals, distributed across Gardner’s seven intelligences. Subjects were split by gender and following the model established by the Goerzels, biographies of the subjects were searched for crystallization data. In the results, gender was not a meaningful variable, although there was not a meaningful variable, although there was some evidence of a higher incidence of initial crystallizing events among females and a correspondingly higher incidence of refining events among males. The differences might reflect the limited cultural opportunities traditionally available to women in western cultures. Crystallization occurred across intelligences, but not with equal incidence and some patterns of crystallization existed within intelligence. With the consistent exception of prodigies, most subjects reported crystallizing experiences at some time in their life. Generally, experiences were reported at stage related periods, especially during the transitions from pre-operational to concrete operations and concrete
to formal operations. Eighty percent of the subjects reported exceptional childhood talent or special abilities, and sixty percent of the subjects reported a crystallizing experience. Most experienced were multi-sensory in nature and related to either a specific event or a person.

Kathy Chekely (1997), did a study on the first seven intelligences of Howard Gardner and found that, human intelligences continue to intrigue psychologists, neurologists and educators. According to Howard Gardner, humans have at least eight intelligences. From his research at Project Zero at Harvard University, Gardner described seven intelligence’s in 1985: linguistic, logical-mathematical, spatial, bodily-kin esthetic, musical, interpersonal, and intrapersonal. To those who has recently added the naturalist intelligence the ability to discriminate between living things and other features of the natural world an ability that was clearly of value in our evolutionary past.

Gardner advises teachers to observe their own and their student’s strengths and to plan lessons and other learning activities in ways that encourage children to use their strengths and improve their weaknesses.

Mary Clark Dower (1990), in attempt to create some fundamental changes within the educational system created a model called the integrative learning system which incorporated five interrelated bodies of research, each of which has stood on its own: accelerated learning methodologies, multiple intelligence theories, neuroscience of learning styles, global vs. linear thinking, and the integration of the arts into the learning process. The integrative learning
system is a holistic educational model for addresses the development of the mind, body, emotions, and spirit and serves to create a balance among all four areas. It also equally addresses the teaching and learning processes. The questions arose what happens to teachers who were originally trained in traditional methods and were teaching within traditional systems when they received training in models such as the Integrative Learning System? Were they able to incorporate the innovative methods with ease and speed? Did this enhance their professionalism? What were their experiences when they went through the process of change? At the end of the study, the teachers were committed to continue developing the concepts they had learned from the integrative learning system. They realized this was part of the processes that would take some time, and they were interested in creating a community of educators in their district who were also involved in these kinds of change.

Deborah Cattin (1996), did a study in the curriculum and instruction in the secondary school education. This study addresses the historical, theoretical and practical issues surrounding alternative education programs. It supports the thesis that students who have not experienced substantial success in a traditional classroom or who have dropped out of traditional schools can be successful in an alternative program based on self-direction and awareness of learning styles and strengths. A fifteen-step process for self-directed learning, previously developed by researcher was implemented and evaluated over one semester in an existing alternative high school, school without walls, in Grand
Junction, Colorado. The process provided a structure to guide students as they earned credits. In a candidacy course, students received information about their learning styles, motivation and other strengths and learned how to use the self-directed process. A narrative describes a student’s experience while going through the process, and three case studies demonstrate the effect of the process as related to students with various learning styles. At-risk students in the case study were similar in learning styles, sensory modality strengths, and multiple intelligence behaviors. Students responded positively to teachers whose role was to facilitate the process, to act as a resource and to support students in their efforts. This research suggests that high school students who have not succeeded in traditional schools may respond positively to self-directed alternative education programs.

Tabish (1995), conducted a study about the language and literature found that kinesthetic engagement technique is the conscious manipulation of performance related external and internal physical phenomena. The actor brings habitual physical activity to consciousness, alters it through manipulation of accessible constitutive parts, and again establishes it as habitual and unconscious. The technique fosters the expressiveness, spontaneity and sense of ease within an actor-character’s stage life which is often associated with “being in the moment”. The dissertation first examines the turn-of-the-century psychophysical and kinesthetic experiments conducted by Stanislavski and Meyer hold (most notably the method of physical action and biomechanics) which caused a paradigm shift
in actor training and involved and underlying kinesthetic component. Next it
discusses the body awareness work of F. Mathias Alexander, Moshe Felderkrais
and Arthur Lessae. Through promoting conscious examination and
manipulation of the actor’s external physical phenomena as well as more
significantly the corresponding internals, these systems establish a second level
of awareness, which consciously employs internal techniques. These systems
make frequent indirect as well as direct reference to brain hemisphere and
multiple intelligence theories knowing. Howard Gardner’s bodily-kinesthetic
and visual-spatial intelligences are discussed as they provide the foundations
for a physiological mind as brain model. The actors mind and body are in fact a
mind body gestalt, which is ready accessible and responsive to external and
internal physical manipulation. While kinesthetic engagement is only one
technique for the actor, knowing what it is, why it enhances case and
expressiveness of performance and how it can be consciously control and
applied serve the pedagogy behind actor training.

Ellen Frances (1994), conducted a study on multiple intelligence with a
view of learning, to develop an interactive curriculum. Eight grade ten students
contributed in a central way to the study, a factor precipitated by the intention
to emphasize students’ perspectives concerning their individual abilities and
interests and the way in while the high school curriculum did or did not
accumulate these. Four grade ten teachers also participated in the track if
identifying the degrees to which student’s individual difference can be
accommodated is an integrated high school curriculum. The study addressed these questions (1) what was the nature of curriculum development process that high school students and teacher in their classroom practices? (2) What was the role of the students in the development of the multiple intelligence theory application models? (3) What was the role of the teachers in the development of the multiple intelligence theory application models? The student’s and teachers perspectives are discussed and examined. The analysis of the findings suggests that change within the curriculum contend, consistent with a constructivist and multiple intelligence view of learning would enable students to develop further their individual differences. Such change is endorsed particularly by the high school student participants.

Lori (1996), Fan found that the action methods of psychodrama and Playback Theater help develop student’s critical and creative capacity by engaging the multiple ways we learn through activities that use multiple intelligences. With sociometric activities forms and elements from playback theatre and psychodrama, students learn to engage their bodily-kinesthetic, visual, spatial, linguistic-verbal, musical–rhythmic interpersonal as well as their rational/logical mathematical intelligences when studying the material on the psychology of oppression. The action methods used demonstrate another modality of teaching and learning and provide the opportunity for students to allow their passion and emotion to fuel their intellectual thought.
Wiseman (1997), stated that historically educators in the United States have used the Stanford-Binet intelligence test to measure a student’s ability in logical mathematical and linguistic–verbal domains. This measurement is being used by a society that has evolved from agrarian and industrial–based economies to what is presently labeled a technological society. Analysis of multiple intelligence profiles collected from this study found significant differences in logical–mathematical, bodily–kinesthetic and intrapersonal intelligences of students in theoretical science courses compared to students in applied science courses. Those differences clearly illustrate why it is imperative for educators to expand the definition of intelligence for entering the new millennium.

In a study to identify the structure and growth of human intelligence Zurakowski David (1993), stated that in order to measure, evaluate and analyze human intelligence, we must develop ways to make the quality of this intelligence visible, and then turn these observations into well-defined psychological variables along which objective measurements can be made. At the heart of this process is the psychometric methodology by which observations are transformed into measures. Data from the Wechsler Adult Intelligence Scale–Revised is analyzed using the Rach model to identify the psychological variable defined by each of 10 of the 11 subtests in the battery. Rasch fit static’s are analyzed on the Wechsler. Verbal and performance scales separately as well as on the WAIS-R battery as a whole. The major goal is to
determine how these variables can be combined in useful and relevant ways to represent the basic constructs on the WAIS-R. Results connected to these theories to propose a new theory of multiple intelligence, the structure of which contains six distinct kinds of human abilities.

The study conducted by Bouton (1997), was to Operationalize Howard Gardner’s theory of multiple intelligences at a private boy’s high school is an urban setting. A key element of the study was to obtain individual student profile of intellectual tendencies by correlating self-perceptions with those of secondary and tertiary informants. Three different survey instruments were used to collect the data. Group results then were correlated; the results also were compared with intelligence profiles obtained from a similar population at a private girl’s school. Study results suggested that intelligence is multi-dimensional; that people process information in uniquely different ways; that all people have at least seven different intelligence to varying degrees. The results also indicated that the dominant intelligences of teenage males in the study vary from those intelligences most emphasized throughout secondary education. Further, dominant intelligences vary by gender.

In attempting to explore the factors other than psychometric intelligence that influence school achievement, Haywood (1968), compared overachieving and underachieving ten-year-olds with respect to intrinsic-extrinsic motivational Orientation. Subjects in three ranges of intelligence quotient scores (65-80, 95-109, and >120) were administered a choice-motivation scale to determine
intrinsic or extrinsic motivation. In a comparison of reading arithmetic, and spelling, the results reflected over achievers to be consistently more intrinsically motivated than are under achievers.

Attempting to understand why some students achieve and others do not, Hirsh and Costello (1970), studied twenty three black fifth graders from an inner city school. The subjects were equally divided among boys and girls and achievers and underachievers. The factors of intelligence quotient and family circumstances were above the mean intelligence quotient for fifth graders at the school and who were living with both parents or with the natural mother and stepfather. The one exception was a child who had lived with foster parents since birth. Differences in achievement were measured by school grades and standardized achievement tests the study consisted of three individual sessions with a psychiatrist in which the child was administered a variety of instruments. Clinical observations as to physical characteristics, motivation, self-concept and general life adjustment were noted. The nature and quality of student’s interpersonal relations and the positive ness of their self-concepts were found to be the most significant variables between achieving and under achieving students.

Green Man (1972), explored factors related to the self-concept of underachieving elementary school children, grade one through six. Specific relationships included (1) the relationship of the self-concept; 2) the relationship of the child’s reported self-concept, (3) the relationship of the
teacher’s behavior report and 4) the relationship of the child’s reported self-concept to his achievement test scores, report card grades behavior rating and intelligence quotient. All subjects in the study had been referred to and tested by the special services department of their school systems. A significant relationship was found between the children’s reported self-concept and grade point average as related to report cards. The additional significant correlation found between the psychological measure intelligence quotient of and the children’s reported self-concept was judged by the author to indicate a level of “leak-through’ knowledge of potential ability which the children have not realized in school.

The family dynamics of three underachieving gifted males were examined by Thiel & Thiel (1977). Giftedness was determined by the administration of the mentally Gifted minor. The major emphasis of this study was to ascertain the closeness of self- perceptions between fathers and sons. The results tended to support the hypothesis that mothers and sons self-perceptions were closer than those of fathers and sons. The results of this study are limited by questions regarding the reliability and validity of the instruments, some of which were used in ways for which they were not primary intended.

Bracken (1982), in a study comparing the impact of personalized versus standard basal stories, half of the subjects were identified as average readers and half were classified as poor readers. The subjects were forty ten-year-olds
from two elementary schools in the southeastern United States. The researcher hypothesized that the personalized stories would have a positive impact on children’s reading comprehension and recall. Multiple-choice questions were written to accompany each of the five basal studies, six for each story. The results indicate that the personalized stories facilitated the reading comprehension of poor readers but did not improve the reading comprehension of the average readers.

Sarage et al. (1930), after a statistical study of 18,667 students in three universities and colleges did, found that the athletes were poorer students than the rest in the class work.

Cooper (1934), had done a study on athletes and their scholarship in the college of the Pennsylvania state. Scores in the Carnegie Foundation Advanced Achievement tests for 4,500 seniors in the college were taken. He reported that the non-athlete group showed a slight superiority in achievement over the athletic group.

Parkinson (1973), found that both high and low achievers were perusing in the fields for which they were prepared as well as in the per suit of advanced standing there appeared to be little difference in whether student graduated in the upper or lower fifteen percent of his class relative to the information obtained from the questionnaire.

Wang (1932), found significant difference between the scholastic performance of physical education majors, both athletes and non-athletes, and
non-physical education major athletes achieved a higher scholastic level than did the physical education majors.

In attempting to expect the factors other than psychometric intelligence that influence school achievement, Haywood (1968) compared overachieving and under achieving ten-years-old with respect to intrinsic-extrinsic motivational orientation. Subjects in three ranges of intelligence quotient scores (65-80, 95-90, and >120) were administrated a choice-motivator scale to determine intrinsic or extrinsic motivation. In a comparison of reading, arithmetic and spelling, the results reflected over achievers to be consistently more intrinsically-motivated than are under achievers.

Johnson, Johnson, Tiffany, and Zaidman (1983), examined the impact of achievement upon the race relations when there is collaboration between high-achieving majority (white) students and low achieving minority students. The sample consisted of 20 minority and 28 majority fourth grade students from two difference classrooms for a large inner city elementary school students were randomly assigned to one of two different conditions: cooperative versus individualistic learning situations. The cooperative condition subjects were instructed to work together as a group, completing one set of papers as a group while ensuring that all members mastered the material. All group members were encouraged to offer ideas and suggestions and the teacher praised and rewarded the group as a whole. In the individualistic condition, students were instructed to avoid interaction with others and were rewarded by the teachers
individually. The results indicated that cooperative learning situations had positive effect on the attitude of achieving majority students; the white students in this condition liked their minority peers more than did the white students in this individualistic condition. Achievement was higher for both majority and minority students in this cooperative condition than in the individualistic condition.

De Seto (1983), did a study in the relationship between reading achievement and student verbal processing abilities was assessed in a study involving 134 fourth grade students in four elementary schools from the same region. Reading achievement was the criterion for subject selection. Reading achievement was the criterion for subject selection. Sixty-seven subjects scored at 66 percentile or above on the reading comprehension subtest on the California Achievement test; sixty-seven scored at 34 percentile or below on the same test. Both groups were assessed on memory span, associative learning, semantic association, automatic word processing and the time taken to name pictures, read words, and recodes pseudo words results indicate that the ability to perform operations on verbal material is central to reading achievement. A second component identified as significant to reading achievement was the ability to rapid verbal coding of meaningful words or no meaning visual stimuli.

Bar and Raviv (1982), did a study on fifteen male fifth and six graders who were low achievers in mathematics were utilized as child tutors for fifteen
male second-graders who were also weak in participation. The tutors replaced the tutee’s classroom teachers, meeting in tutor-tutee pairs three times a week for four months. After the experimental period, tutees had significant improvement in mathematics on a standardized achievement test but not in classroom mathematics. Tutors had significant gains in mathematics on standardized achievement tests and in the classroom.

Weistein and Battessani (1982), did study on investigating student perception of teacher treatment of high and low achievers utilized eight open and included 234 fourth through six graders who were administered the teacher treatment inventory. Students described low achievers as receiving more negative feedback, teacher direction, work assignments and rule-orientation. High achievers were viewed as recipients of higher expectations more opportunities and more choices than were low achievers. Students’ perceptions according to students sex, classroom environment or achievement level.

Burge (1983), conducted a study to assess the oral verbs, silent reading comprehension and speed of achievers. Twelve boys and six girls from a public school in Arkansas took part in the study. The subjects were given the Analytical Reading Inventory which, contains three subsections which measure the rate of oral reading on three difficulty levels and three which measure the rate of silent reading on the same levels. Subsequent to completing each subsection, students were asked a series of questions to assess comprehension. The data analysis concluded the only differences between reading
comprehension and rate occurred on the third reading level. This was the level which corresponded to the subject’s instructional reading level and was the one read orally at the slowest rate. The researcher concluded that purposeful oral reading should be given more the allocation in elementary grades.

Oren (1983), studied the impact of classroom feedback and evaluation structure on student’s attribution tendencies. Twenty-one classrooms in three schools were involved in the study with a total of 599 fifth and six grade students. Information was collected as to the depth and nature of feedback, evaluation structure, and instructional approaches. An attribution tendency scale was administered to subjects to assess student perception of locus of control. The results indicate that the attribution most similar in classrooms where the feedback structure is rich, more specific and individualized.

The parents of thirty-three low achieving students were involved in a study of two different parent-counseling approaches by Esters and Levant (1984). Parents were assigned to the systematic training for effective parenting group of a self-esteem method group after being matched on the sex of their child, single-parent status, and whether or not the father declined to participate. Both counseling groups met for ten one-and-a-half hour sessions held weekly. Significant post treatment differences were noted. While both methods resulted in achievement gains, the self-esteem approach resulted in improved self-esteem for the children.
Cole and Krechbiel (1984), did a study on the effect of academic and social skills were studied. Forty socially rejected low achieving students were assigned to four different treatment conditions - academic skills training, social skills training, a combination of both and a control group. Classroom observations of subject’s social interaction were made before and after treatment. Of the four conditions, the academic skills treatment yielded significant gains in reading, mathematics and social preference. The social skill group produced significant gains in reading achievement. A follow-up assessment a year later revealed that all but the mathematics gains had been sustained.

Three studies of trained parent tutoring in reading were reported by Thurston and Dasta (1990). In the first study, eight black urban elementary school students (six males and two females) were matched to a control group. Parents were given training in reading workshops to use specific tutoring procedures when they read with their children in daily reading sessions. The procedures included use of praise, a correction procedure and how to ask comprehension questions. After three to four months, experimental group children consistently showed an increase in reading recognition as measured by the sort. In studies two, three children aged nine, nine and ten, who were failing in mathematics were selected to participate. The subject’s mothers tutored them with flashcards, keeping a worksheet on problem accuracy. Each subject was given a chart to color in two percentages correct daily. Pre-post measures
demonstrated achievement gains in mathematics for each subject. In addition, scores on classroom tests of Mathematics for each subject. In addition, scores on classroom tests of mathematics facts showed dramatic improvement. Third study was a single case study with a fourth grade black female who was failing spelling. During a baseline period of six weeks, the child received no tutoring. Subsequently, the parent was trained by a professional to tutor her child for 10 to 15 minutes daily using flash cards. During the tutoring period, the subjects spelling test scores rose from 44.9% to 84.7%. The researchers concluded from these three studies that training parents to tutor their children at home is a positive response to student’s low achievement.

Denise Garibaldi (1994), examined the extent to which an art therapy intervention affected the self-competence and self-esteem of learning disable (LD) and normally–achieving (NA) third, fourth and fifth grade students in a suburban elementary school. Gardner’s theory of multiple intelligences, Harter’s developmental model of perceived competence and Bandura’s (1977) self-efficacy theory guided the research. Positive outcome is not guaranteed, however. Findings were limited by design thus the study served as a pilot study for additional research. The strength of the study emanated from its ecological validity and the attempts to structure and standardized an art therapy intervention conductive to research. An art therapy intervention and training manual were designed.
Stevenson & Fantuzzo (1984), in a study on the impact of self-management skills training on low achievers mathematics grades was assessed. The subjects were two fifth grade males. The treatment condition, consisting of self-administered reinforcement contingencies, was given to one subject while the other served as a control. The treated subject experienced gains in Mathematics performance, which were sustained through a two-month follow-up although disruptive behavior increased over time.

Short & Ryan (1984), did a study on meta-cognitive differences between skilled and less skilled readers: Re-mediating deficits through story grammar and attribution training. Forty-two fourth grade poor readers were assigned to three groups. A meta-cognitive intervention program consisting of story grammar training and attribution training was designed to increase comprehension monitoring and awareness of effort in efficient reading. One group received both components with the other two groups each receiving one component alone. Fourteen skilled readers served as a contrast group in posttest assessments. Results indicated that strategy trained less-skilled readers do not differ from skilled readers in their ability to utilize story schemata to aid comprehension of new information. Only subjects receiving attribution training alone scored poorer than the skilled readers.

Richards & Golicz (1984), in the study on academically unpredictable school children was administered the Ester Attitude scale to 43 fourth graders in an attempt to assess attitudes toward mathematics, reading and science.
Subjects were dived in to groups according to the discrepancy between predicted and actual performance. The researchers hypothesized that students whose performance fell below the average would have poorer attitudes towards core subjects. The results were somewhat surprising. Although the low achieving students possessed negative attitudes toward the core subjects extremely high achievers also had more negative attitudes towards mathematics, reading, and science.

Ninety-three fifth graders participated in a study conducted in the natural classroom setting by Pigott, Fantuzzo and Clement (1986) to ascertain the impact of peer tutoring and group contingencies on the goal of improving academic performance. Subjects for the treatment group were selected by: (a) teacher report card evaluations of unsatisfactory performance in arithmetic and (b) performance within the lower quartile on arithmetic drills during the initial baseline phase. Results indicated that reciprocal peer tutoring combined with group reinforcement contingencies raised participants arithmetic scores to an equal level with the average performance of their classmates. The treated students continued their improved performance level during a subsequent 12 week maintenance phase.

Hiebert, Wearue and Taber (1991), in a study aimed at furthering children’s understanding of mathematics concepts. Focusing on the concept of decimals, the researchers held eleven daily lessons with the subjects. The mathematics lessons were grouped into three sets, which focused on concrete
representations of the decimal concept. Before and after each instruction unit all students were given written tests consisting of eighteen tasks. Eight students selected by the teachers as representative of the class were interviewed individually by the researchers after each unit test. Student’s reasoning regarding the mathematics test was probed. Researchers concluded from the analysis of the data that the form of external representation of concepts influenced student understands in a context limited manner.

Gersetl & Cynthia (1998), conducted a study in the relationship of multiple intelligences to the instructional process. The purpose of this study is to describe a school where teachers are actively providing instruction based on the theory of multiple intelligences and identify the relationship of multiple intelligences to the instructional process. The program did not work against the political center of educational policymaking but worked within the public sphere to garner support so that individual schools could decide how best to implement the program—served the complicate the at implementation process. At provided a space for teachers to support the continued implementation of the program, despite traditional teaching methods.

Victoria Lynn (1996), conducted a study based on the theory of multiple intelligence and investigated teacher’s perceptions of the implications of the theory of multiple intelligence in inclusive elementary classrooms. The teachers included in the study identified themselves as teaching in inclusive classrooms and using the theory of multiple intelligence as a framework for
instruction. Teachers were resoundingly positive about inclusion in general and about the possible implications of the theory of multiple intelligences in inclusive classrooms.

Catherine Karen (2000), conducted an action research in science based on multiple intelligence theory. The inquiry was a qualitative case study that aimed to understand the perspectives of those directly involved. This was achieved by using multiple methods to collect data: audio-taped action research meetings, field notes, semi-structured interviews, journal writing, and concept mapping. All data were analyzed on ongoing basis. Many positive outcomes resulted from the study in areas such as curriculum development, teacher development, and student learning in science. Through the process of action research, research participants became more reflective about their practice and thus, enhanced their pedagogical content knowledge in science. Students became engaged in learning sciences, gained a greater understanding of how they learn, and experienced a science curriculum that was more relevant and personalized. In addition, the action research process provides a feasible and effective forum for both curriculum development and professional development.

Rathovon (1991), studied the impact of a guidance unit on low achieving six and seventh graders. Subjects had failures in one or more of their five academic classes. The seventy–seven students were randomly assigned (with grade levels) to small group counseling, classroom guidance, or control
conditions. The small group size was limited to seven. The unit had a four-part sequence assessment of study and test taking skills, habits and attitudes; exploration of exam preparation problems and creation of individual action plans for exam preparation. The guidance unit was offered two weeks prior to final examinations. The results were generally disappointing. There was no consistent, statistical difference between treatment and control conditions.

Rockwood (2003), did a study on effect learning from instruction that contained meaningful physical actions directly related to occupational therapy vocabulary words was compared to teaching by explanation and demonstration in 63 college graduate students from educational psychology classes. Results showed that both groups learned the OT terminology equally well and retained on equivalent amount over time, but those in the kinesthetic-p axis action-based learning group enjoyed, the lesson more, and appeared more attentive and enthusiastically engaged, than those in the stationery group appear.

Cynthia Louis (1996), in a study on traditional and emerging perspectives influencing the education of the gifted in the commonwealth of Virginia come to conclusion that emerging perspectives in the education of the gifted are challenging the traditional approaches. There appears to be a gradual move toward authentic assessment, multiple forms of intelligences, developmental theories of giftedness, and multiple program options that serve a more inclusive segment of the school population.
Harvey, Richard strong and Mathew Perini (1997), did a study on the theory of multiple intelligences, primarily deriving from cognitive science, and learning style theory, primarily deriving from the psychoanalytic work of Carl Jung, has many classroom applications, particularly if we integrate these theories in to a useful model. Learning styles emphasizes the different ways people think and feel or they solve problems, create products, and interact. The theory of multiple intelligence seeks to understand how cultures and disciplines shape human potential. Learning styles are concerned with differences in the process of learning, whereas multiple intelligences center on the content and product of learning.

The authors have developed a model that shows how each Howard Gardner’s seven intelligences is expressed in four learning styles: mastery, understanding, interpersonal, and self-expressive, as well as assessment products that teachers might encourage students who build a strength or shore up a competence. For example, someone with great strength in kinesthetic intelligence and who learn toward a self-expressive style might choose to create a diorama or displays, represent ideas is dance or drama or develop a plan for directing a scene.

Hawk (1997), introduced multiple intelligence to Teachers at White Marsh Elementary school in Trappe, Maryland, in response to the rigorous performance standards of the new Maryland School performance Assessment, which required students to apply skills to real-life problems. Gardner’s theory
helped the children understand that they could use their strong intelligences to improve Weak Ones. Teachers also consulted art, drama and music specialist to advise them on how to set rigorous evaluation standards and help children make gains in all subjects. As the students have understood that, more is expected of them, their overall achievement and confidence have raised substantially exceeding original expectations.

Cawepbell (1997), discovered scores of approaches to multiple intelligences while researching teaching and learning through Multiple Intelligences. In this article, she describes five multiple intelligences formats, with examples and suggestions from school around the country:

- **Lesson design:** Begin by reflecting on a concept that you want to teach and identify the intelligences that seem most appropriate for communicating it.

- **Inter disciplinary curriculums:** Adapt do not totally rework – the curriculum to highlight multiple intelligences. Some schools for example, may add a stronger arts program, while some teachers may create learning stations in their classroom or invite community experts in to mentor their students.

- **Student Projects:** Teach students how to initiate and manage complex projects

- **Assessments:** Have students show what they have learned by generalizing their findings, connecting the content to their personal experiences, and applying their knowledge to new situations.
Apprenticeships: Have students participated in three apprenticeships in an art form or craft, one in an academic area, and a third in a physical discipline such as dance or sports.

Educators at New City School in St. Louis Missouri have implemented a school wide multiple intelligence approach for the past 10 years. According to the researcher, Thomas R. Hoerr (1997), “our work with multiple intelligences has affected how we design our curriculum, how we assess student progress, how we communicate with parents, and how we work together”. Teachers create new lessons that incorporate musical intelligence in to mathematics, spatial intelligence in to classroom management, and bodily-kinesthetic intelligence in to social studies. Assessments allow students to use Multiple Intelligence as they make videotapes for their portfolios and perform in “living museums” in the school lobby. Standardized tests show that students perform for above average, and teachers have developed a collegial school environment that supports continuous learning among both staff and students.

Merrifield (1997), relates her success using multiple intelligences at First Foot Forward, a preschool special education program where she worked as a speech- language Pathologist. She focuses on a class of 5-year-olds, whose disabilities ranged from speech and language disorders and cognitive and fine motor development deficits, short attention spans, and impulse control problems.
For this class, she and the classroom teacher devised a “Three Billy Goats Graff” unit, writing their own lyrics for a song based on the venerable fairy tale. They de-emphasized language— their student’s weakness—and language skills.

To teach the concepts of small medium, and large, for example, Merrifield recited the story (linguistic) and had the children role-play the characters (linguistic) while crawling across a balance-beam bridge (spatial, bodily kinesthetic). The children also worked in groups (interpersonal), and they solved various assembly problems (spatial logical-mathematical). The 5-year-old children made great strides in language, as well as in their attention spans, group interaction and self-esteem.

Patricia Dolan (2001), examined the acceptability of the consultation process to teachers several types of verbalization were shown to affect the acceptability of consultation. This study examined consultant and conseree preferences for the presence of teacher behaviour interference emitters in the problems identification stage of consultation and for the type of consultant response to those emitters. It was hypothesized that teachers would perceive consultants as more effective when consultation transcripts included teacher inferences. It was anticipated that teachers would respond more favorably when the inference was incorporated into the problem. Identification by the consultant than when the inference was merely acknowledged. In addition, it was hypothesized that psychologists would rate consultants more favorably
when teachers did not make inferences in this stage. The sample consisted of 49 school psychologists and 55 teachers.

The psychologists were solicited through their school districts and through a mailing to school, psychologists and each were asked to solicit a teacher. Each participant rated the effectiveness of the consultant on the consultant effectiveness form. The results revealed no preferences in their professional group for a particular level of inference during the problem identification and stage consultation, nor were there significant difference between the groups in their responses. Thus, suggest that individual characteristics rather than professional affiliation determine whether school personnel prefer problem identification interviews that include teacher inference.

Christopher and Harison (1997) conducted a project named “The Brain–flex” at St. Patrick’s Marist College, Australia. Students have been pursuing independent projects in the program Brain Flex. Under the guidance of teacher-tutors and other adult mentors, each student completes two or three projects during the school year. These have ranged from learning the skills of horse dressage to cooking family recipes. Based on Howard Gardner’s multiple intelligence theory, the program grew out of the principal’s concern that first year (generally 14 year old) students were losing their motivation to learn. Students begin by negotiating a learning contract with their tutor, in which they explain in writing why they have chosen their topic and what they hope to
learn. They conclude the project with a presentation to their peers. Brain-flex is based on the principles that students learn best when the subject really interests them, when they are allowed to learn in different ways, and when they are responsible for their own learning.

Ching Man Ham (2008) did a case study in a Hong Kong school, which admits students with low academic achievement. In the study, teachers do not see the students as deficient, but believe in the students and their capacity to learn. They perceive their students as learners and learning as an active process, and they respect their students with respect to teaching, the curriculum design allows students to participate and put forth their ideas. The importance of monitoring student success and the call for high level of interactive instruction have not been highly valued and emphasized. More over the use of activities, such as flash games, role play and videos, helps to instruction match the student’s needs. In addition, rewards and incentives have frequently been used to keep students involved, and recognition and affective reactions have been aroused to generate student enthusiasm. Students feel that their teachers care about them want the best of them, and are invested in their success. A key factor voted by the researcher was the teacher’s genuine trust in their student’s abilities to succeed, leading to the treatment of students with respect and positive regard.

In summary, the above studies examined a variety of academic and kinesthetic approaches to the remediation of low achievement. Generally,
researchers addressed the issue of low achievement from the perspectives of low student motivation or low ability. The impacts of student grouping variations on academic achievement have been examined. Different approaches to basic skills reinforcement were attempted with mixed results. The internal versus external focus of control of low achievers was addressed in multiple studies with mixed results. Several researchers found a link between self concept/ self-esteem and general achievement although no attempt was made to establish a causative nature of the relationship the negative impact of low achievement on self-esteem would seem apparent.

However, whether or not low self-esteem foster low achievement is still unclear. The conflicting findings may be due to the different method of measurement used in different studies. Furthermore, the conditions under which the various investigations were done were incomparable and in fact, those conditions were not even reported. Most of the above investigations were done in different countries. In fact, a search of the literature over the past years yielded few studies concerning low achievement and motor ability in normal.