CHAPTER – II

REVIEW OF RELATED LITERATURE

2.1. INTRODUCTION

Review of related literature is the abstract or a brief summary of previous researchers, which provides evidence for the researcher what is already known and what is still unknown and untested. In this way related literature is a necessary aspect of a research project.

According to Ary et al., (1972) organizing related literature is like proposing an expedition, by mapping out the known territory and pointing the way to the unknown territory one proposes to explore. If the study has several aspects, or is investigating more than a single hypothesis this is done separately for each facet of the study. One should avoid the temptation to present the literature as a series of abstracts. Rather, it should be presented in such a way as to lay a systematic foundation for the study (P. 67).

Review of the related literature, besides to allow the researcher to acquaint her with current knowledge in the field or area, in which she is going to conduct her research, serves her to delimit and define her problem. She can avoid unintentional duplication of well-established findings. Moreover it helps her to know about the tools and instruments, which proved to be useful and promising in the previous studies and to provide insight into statistical methods. The present review has been made from both International and Indian research abstracts, research journals, psychological abstracts etc.

The reviewed studies are presented in the following manner:

1. Studies related to Multiple Intelligence
2. Studies related to Study Involvement
3. Studies related to Academic Achievement.
2.2. STUDIES RELATED TO MULTIPLE INTELLIGENCE

A. Indian Studies

_Saranya. V. and Balamurugan. M. (2014) conducted a study on “Multiple Intelligence and Academic Achievement of Standard IX Students”._

The objectives were: (i) To find out the level of multiple intelligence and its dimensions of standard IX students; (ii) To find out the level of academic achievement of standard IX students; (iii) To find out whether there is any significant difference in their multiple intelligence and its dimensions of standard IX students based on gender; (iv) To find out whether there is any significant difference in academic achievement of standard IX students based on gender; (v) To find out whether there is any significant relationship between multiple intelligence and its dimensions and academic achievement of standard IX students. Normative survey method was adopted in the study. 300 students studying standard IX in five schools in Thiruvidamaruthur taluk in Thanjavur district at random. The findings were: (i) Girls had more overall multiple intelligence in two of its dimensions namely linguistic and spatial - visual intelligence than boys. However, boys had more bodily - kinesthetic intelligence than girls; (ii) Boys and girls did not differ significantly in logical-mathematical, musical, interpersonal and intrapersonal intelligence. (iii) Girls scored more in academic achievement than boys; (iv) There exists positive slight relationship between overall multiple intelligence and academic achievement.

_Getsy Sangeetha, D. (2014) attempted on “Multiple Intelligences of Student Teachers in terms of their Learning Styles – A Critical Study”._

The objectives were: (1) To find the level of multiple intelligences of student teachers with active and reflective, sensing and intuitive, visual and verbal, and sequential and global learning styles; (2) To find the significance of difference between the student teachers with active and reflective, sensing and intuitive, visual and verbal, and sequential and global learning styles in their multiple intelligences.

The investigator used survey method. The tools were: (a) General Data Sheet, (b) Multiple Intelligences Inventory standardized by Terry Armstrong (1998), and (c) The Index on Learning Style of Barbara A. Solomon and Richard M. Felder (1993). The investigator selected 400 student teachers from eight Colleges of Education using
simple random sampling technique. Mean, SD, ‘t’ Test and Pearson Product Moment Correlation were used.

The findings were: (1) There is significant difference between the student teachers with active and reflective learning styles in their multiple intelligences in total and its dimensions – visual / spatial intelligence and interpersonal intelligence. The student teachers with active learning style have higher multiple intelligences than the student teachers with reflective learning style; (2) There is significant difference between the student teachers with sequential and global learning styles in their multiple intelligences in total and its dimensions – verbal / linguistic intelligence, logical / mathematical intelligence, visual / spatial intelligence, interpersonal intelligence, intrapersonal intelligence and naturalistic intelligence. The student teachers with sequential learning style have higher multiple intelligences than the student teachers with global learning style.

Karthikeyan, J. (2013) executed “A Critical Study on Multiple Intelligence of Higher Secondary Students in terms of their Hemisphericity”.

The objectives were: (1) To find the level of multiple intelligence of the higher secondary students with dominance of left and right hemisphericity; (2) To find the significance of difference between the higher secondary students with dominance of left and right hemisphericity in their multiple intelligence in total and with regard to background variables.

The investigator used survey method. The investigator used simple random sampling technique. The tools were: (a) Personal Data Sheet prepared by Investigator, (b) Multiple Intelligence Inventory developed by Terry Armstrong (1998), and (c) Hemispheric Dominance Inventory developed by Venkataraman (1988). The investigator selected 316 higher secondary students using simple random sampling technique from Kuzhithurai Educational District.

The findings were: (1) 62.03% of higher secondary students are left dominant and 37.97% of them are right dominant; (2) There is significant difference between the higher secondary students with dominance of left and right hemisphericity in their multiple intelligence. The higher secondary students with dominance of left hemisphericity are found better in their multiple intelligence; (3) There is significant difference between the male higher secondary students with dominance of left and right hemisphericity in their musical / rhythmic, interpersonal and intrapersonal intelligences.
The higher secondary students with dominance of left hemisphericity are found better in the musical / rhythmic, interpersonal and intrapersonal intelligences; (4) There is significant difference between the female higher secondary students with dominance of left and right hemisphericity in their verbal / linguistic, logical / mathematical, visual / spatial, interpersonal, intrapersonal and naturalistic intelligences.

Selvapriya, K. (2012) conducted a study on “Relationship between Multiple Intelligence and Reflective Thinking of M.Ed. Students”.

The objectives were: (1) To find out the level of multiple intelligence of the M.Ed., students; (2) To find out the level of reflective thinking of the M.Ed., students; (3) To find out the significance of relationship between the multiple intelligence of the M.Ed., students and their reflective thinking.

A sample of 300 M.Ed. students from eight Colleges of Education were selected using simple random sampling technique. The tools used were: (1) Multiple Intelligence Inventory developed and standardized by Terry Armstrong (1998), and (2) Reflective Thinking Questionnaire developed and standardized by Vasimalai Raja (2010). The statistical procedures used were: mean, SD, ‘t’ test, ANOVA and Pearson product moment correlation.

The findings were: (1) Majority of M.Ed. students have average level (64.33%) of multiple intelligence. 61.36% of male students and 66.67% of female students have average level of multiple intelligence; (2) There is no significant difference between male and female M.Ed. students in their multiple intelligence and its dimensions; (3) There is significant difference between M.Ed. students studying in aided and self-financing colleges in their musical / rhythmic intelligence; (4) There is significant difference between the UG and PG qualified M.Ed. students in their multiple intelligence and musical / rhythmic intelligence; (5) There is significant difference among the Hindu, Christian and Muslim M.Ed. students in their verbal / linguistic and intrapersonal intelligence; (6) There is significant relationship between multiple intelligence of M.Ed. students and their reflective thinking.

Govindaraj, T. (2011) executed a “Study on Multiple Intelligence and Achievement Motivation of Standard XI Students”.

The objectives were: (1) To find the level of multiple intelligence and achievement motivation of standard XI students; (2) To find the significance of
difference in the multiple intelligence and achievement motivation of standard XI students with regard to background variables; (3) To find the significance of correlation between multiple intelligence of standard XI students and their achievement motivation.

The investigator selected 280 students studying standard XI from nine higher secondary schools in Salem District using simple random sampling technique. Multiple Intelligence Inventory prepared and validated by Sebastian and Raj (2005) and Achievement Motivation Scale prepared and validated by Robinson (1961) were the tools of the study. Mean, SD, ‘t’ Test, ANOVA and Pearson Product Moment Correlation were the statistical techniques used.

The findings were: (1) No significant difference is found in the multiple intelligence of standard XI students in terms of all the background variables; (2) Significant difference is found among the standard XI students studying in arts, science and vocational groups in their achievement motivation. Arts group students have higher achievement motivation than their counterparts; (3) Significant positive correlation is found between multiple intelligence – verbal / linguistic, logical / mathematical, bodily / kinesthetic, musical / rhythmic, interpersonal, intrapersonal and naturalistic of standard XI students and their achievement motivation.

Sivakumar. D. (2012) conducted a study on “Multiple intelligence and achievement in science among high school students”.

The objectives were: (1) To find out the level of multiple Intelligences of High school students in terms of sex; (2) To find out the significances difference between (a) boys and girls (b) rural and urban (c) Tamil medium and English medium (d) government, aided and self financing school students in their multiple intelligences; (3) To find out the level of achievement in science among high school students in terms of sex.

The investigator adopted the survey method of research to study the relationship between Multiple Intelligence and the achievement in science among the high school students. Survey research is a procedure in which information is systematically collected from a population through some form of direct solicitation such as face-to-face interview, administering, questionnaire or schedule. Among them 200 students from 8 high schools were taken as sample, random sampling technique had been adopted for this study. Multiple Intelligence Inventory ‘Multiple Intelligence Inventory’ developed by
Dr. Terry Armstrong and modified by the investigator with consultation of guide and experts was used.

The findings were: (1) The level of multiple intelligence of high school students with reference to sex is average; (2) There is no significant difference between boys and girls students in their multiple Intelligence; (3) There is significant difference between rural and urban students in their multiple intelligence; (4) There is no significant difference between Tamil and English medium students in their multiple intelligence; (5) There is no significant difference among government, aided and self-financing school students in their multiple intelligence; (6) There is significant relationship between Multiple Intelligence and achievement with reference to sex.

Sujala Watve (2010) conducted a study on “Correlation among Multiple Intelligence Through Parental Perception.”

The aim of this study was to study correlation, among Mathematical intelligence expressed through activities, among high schoolers.

Sample consisted of 100 high schoolers whose parents gave rating based on their observation regarding intelligence of their word.

Activities related to logical mathematics show significant and average correlation.

Rani, K.V. (2010) conducted a study on “The Effect of Multiple Intelligence on the Academic Achievement of Higher Secondary Students”.

The objective was to find out whether there is any significant relationship between multiple intelligence and the academic achievement of higher secondary students.

The sample consist of 1092 Higher secondary students from various schools of Pattnamthitta, Kollam, Tiruvandram and Alappuzha districts selected by multi-stage random design. Tool includes the multiple intelligence inventory prepared and validated by the investigator herself. For Academic Achievement, marks from the annual examination of S.S.L.C were collected.

The findings were: (1) There is significant difference between plus one and plus two students in their logical mathematical intelligence plus one students show more logical mathematical intelligence than plus two students; (2) There is significant difference between co-education and girls’ school students in their interpersonal
intelligence. co-education students show more interpersonal intelligence than Girls’
school students; (3) There is no significant difference between Higher secondary students
in their achievement; (4) There is significant relationship between verbal and logical
mathematical intelligence and academic achievement of higher secondary students.

_Sangeetha, N.J. (2010) conducted a study on “Multiple Intelligence and Personality of
Higher Secondary School Students”._

The objectives were: (1) To find out the level of multiple intelligence among
higher secondary students; (2) To find out the nature of personality of higher secondary
students; (3) To find out the significance of difference in the multiple intelligence and
personality among higher secondary students with regard to gender, standard, nature of
school, type of school, group of study, locality of residence, family type and birth order.

The investigator selected 360 higher secondary students from nine higher
secondary schools in Kanyakumari District using simple random sampling technique.
The tools used were: (1) Multiple Intelligence Inventory by Terry Armstrong (1998) and
(2) Personality Inventory is a standardized tool, which is prepared and validated by
Dubey, Dwivedi and Verma (1988). The statistical methods used were: mean, SD, ‘t’
test, and ANOVA.

The findings were: (1) Significant difference is found among the higher
secondary students studying in boys’ schools, girls’ schools and co-education schools in
their multiple intelligences – verbal/linguistic, logical/mathematical, bodily/kinesthetic,
musical / rhythmic and intrapersonal. The students of co-education schools have higher
multiple intelligences than their counterparts; (2) Significant difference is found between
the higher secondary students studying in government schools and aided schools in their
multiple intelligences – verbal/linguistic, logical/mathematical, bodily/kinesthetic and
naturalistic. The students of government schools have higher multiple intelligences than
their counterparts. (3) Significant difference is found between the higher secondary
students residing in urban and rural areas in their multiple intelligences –
verbal/linguistic. The rural area students have higher multiple intelligences than their
counterparts.
Kirtika, Sheela Sangwan and Krishna Duhan (2009) made a study on “Multiple Intelligence of Slow Learner Young Adolescents”.

This study seeks to assess the multiple intelligence of slow learner young adolescents. 100 children in the age groups of 12-41 years having IQ 76-89 were taken from the selected schools and were assessed for multiple intelligence. Results revealed that more than 60 per cent of young adolescents had below average intelligence in most of the aspects of multiple intelligence except in musical naturalistic and mathematical intelligence. Above 75 per cent of the adolescents were in below average category in interpersonal, linguistic and existential intelligences and only nearby 20 per cent respondents performed average on these aspects.

Rajamanickam, M.S. (2009) conducted a study on “Multiple Intelligence and Achievement Motivation of Higher Secondary Students”.

The objectives were: (1) To find the level of multiple intelligence, achievement motivation and academic achievement of higher secondary students; (2) To find the significance of difference in the multiple intelligence, achievement motivation and academic achievement of higher secondary students with regard to background variables; (3) To find the significance of correlation between multiple intelligence of higher secondary students and their academic achievement; (4) To find the significance of correlation between achievement motivation of higher secondary students and their academic achievement.

The investigator selected 280 higher secondary students from nine higher secondary schools in Tirunelveli District using simple random sampling technique. Multiple Intelligence Inventory by Terry Armstrong (1998) and Achievement Motivation Scale by Robinson (1961) were used for data collection. The statistical methods used were: mean, SD, ‘t’ test, ANOVA and Pearson product moment correlation.

The findings were: (1) No significant difference is found in the multiple intelligence of higher secondary students with regard to all the background variables; (2) Significant difference is found among the higher secondary students studying in arts, science and vocational groups in their achievement motivation. Arts group students have higher achievement motivation than their counterparts; (3) Significant positive correlation is found between multiple intelligence – verbal / linguistic, logical / mathematical, bodily / kinesthetic, musical / rhythmic, interpersonal, intrapersonal and naturalistic of higher secondary students and their achievement motivation.
Nagavalli and Sugirtha (2007) studied on “Analysis of Multiple Intelligence Development Levels of Teacher Educators”.

The objectives were (1) To find out the level of Multiple Intelligence of each sample; (2) To find out the possible link between the field of specialization and the related intelligence level development; (3) To find out the comparison between Multiple Intelligence and subject specialization. The sample used were 10 and tools used were Multiple Intelligence Inventory.

The findings were: The study reveals that the average scores in all the eight dimensions are high (Above 70% - 90). There seems to be no cause effect link between the subject specialization and 100% development in the related intelligence dimensions. According to the experience the intelligence dimensions seem to develop to the maximum level.

Anisha (2006) conducted a study on “Relation between Multiple Intelligence and Knowledge of Content Pedagogy of Natural Science Secondary Teacher Education Students”.

The objectives were: (1) To find out the level of Multiple Intelligence of the secondary teacher education students; (2) To find out the level of knowledge of content pedagogy of natural science of the secondary teacher education students; (3) To find out the relationship between Multiple Intelligence and knowledge of content pedagogy of natural science of the secondary teacher education students. The Tools used were Personal Data Sheet, Multiple Intelligence Scale and pedagogy of natural science scale.

The findings were (1) The study reveals that there is no significant difference in the level of knowledge of content pedagogy of natural science; (2) There is no significant difference in the level of knowledge of content pedagogy of natural science; (3) There is no significant correlation between Multiple Intelligence and knowledge of content pedagogy of natural science of the secondary teacher education students.


The objectives were: (1) To find the level of learning styles and multiple intelligences of B.Ed. students; (2) To find the significant difference in learning styles and multiple intelligences of B.Ed. students in terms of their gender, age, religion, social status, optional subject, native place, type of college, location of college, mode of
college, birth order and type of family; (3) To find the significant correlation between linguistic learning style, and multiple intelligences.

A sample of 300 B.Ed. students were selected from the Colleges of Education and the University Centres located in Thiruvananthapuram District. The major tools of the study are (a) Personal Data Form, (b) Learning Styles Inventory, and (c) Multiple Intelligences Inventory prepared and validated by the investigator. Percentage analysis, ‘t’ test, ANOVA and Pearson Correlation Coefficient were used for data analysis.

The findings were: (1) Significant difference is found in linguistic and musical learning styles of B.Ed. students in terms of age; (2) Significant difference is found in linguistic learning style of B.Ed. students in terms of type of college; (3) Significant difference is found in naturalistic multiple intelligences of B.Ed. students in terms of sex; (4) Significant difference is found in intrapersonal and naturalistic multiple intelligences of B.Ed. students in terms of religion; (5) Significant correlation is found between learning styles, and multiple intelligences and its dimensions.

**Abhilash and Benadict (2005) conducted a study on “Awareness on Biotechnology and Multiple Intelligence of the College Students”**.

The purpose of the study was to find out the multiple intelligence of the college students and to find out the relationship between awareness on biotechnology and multiple intelligences of college students.

The findings revealed that 17.7 percent of students have high level of awareness on biotechnology and 14.3 percent of college students have high level of awareness on multiple intelligence. It is also reveals that there is no significant relationship between awareness on biotechnology and logical- mathematical, visual-spatial, bodily-kinesthetic and musical-rhythmic intelligence. But there is significant relationship between awareness on biotechnology and verbal-linguistic, interpersonal and intrapersonal multiple intelligences of college students.

**Manju (2004) conducted a study on “Effectiveness of Strategies Involving Multiple Intelligence Theory on the Achievement in Mathematics at Higher Secondary Level”**.

The purpose of the study was to compare the effectiveness of strategies involving multiple intelligence theory on mathematics achievement at secondary level with reference to instructional objectives. The researcher adopted experimental method for the present study and selected the pre-test, post-test non-equivalent group design for the
study. The tools used lesson transcripts based on strategies involving multiple intelligence, lesson transcripts based on present method and an achievement test in mathematics.

The study reveals that teaching through strategies involving multiple intelligence theory is more effective than present method of teaching on achievement on mathematics and strategies involving multiple intelligence theory were more effective than the present method under instructional objectives.

B. Foreign Studies

Aly A Koura and Safaa M. Al-Hebaishi (2014) executed a study on “The Relationship between Multiple Intelligences, Self-Efficacy and Academic Achievement of Saudi Gifted and Regular Intermediate Students”.

The study aimed to investigate and describe the multiple intelligences (MIs) and self-efficacy profiles that characterize Saudi female (gifted / regular) third intermediate students and their relationship to the achievement of EFL language skills and aspects. The sample consisted of (85) Saudi female third intermediate grade students, (43) were identified as gifted, and (42) were regular students. Three research instruments were used to collect data: (a) the Multiple Intelligence Inventory, (b) the Self-efficacy Scale and (3) A Language Achievement Test. The results of data analysis revealed that Interpersonal Intelligence was the most preferred intelligence types among gifted and regular participants. Musical intelligence was the least preferred intelligence among both groups. Differences between the two groups were in the order of other preferences. The study also revealed that there was significant correlation between MIs and achievement in specific language skills and language aspects. Self-efficacy, on the other hand, did not correlate to language achievement but it was a good predictor of success.

Benazir Ayesha and Fauzia Khurshid (2013) made an attempt on “The Relationship of Multiple Intelligence and Effective Study Skills with Academic Achievement among University Students”.

The first objective of this study was to investigate the relationship of multiple intelligence, effective study skills and academic achievement of university students, second objective was to measure the impact of multiple intelligence and effective study skills on the academic achievement of university students and the third objective was to investigate the role of demographic variation such as gender, discipline, birth order and family income in determining the levels and dimensions of multiple intelligence,
effective study skills and academic achievement. In this study a stratified random sample of 250 male (104) and female (146) university students were collected from 4 selected private and public sector universities of Rawalpindi and Islamabad. Family income of Students ranged from 50,000 to 150,000. The study was delimited to Master level students studying in the fourth semester only. In this research for the measurement of multiple intelligence “Simple Multiple Intelligence Inventory” based on 80 items developed by Gardner was used and for the measurement of effective study skills an inventory named as,” Study Skills” based on 51 items developed by Congos was used.

The students’ academic achievement was measured through their results of first three semesters (students result was taken as measure their academic achievement). After data collection it was analyzed with the help of SPSS 16 by applying various statistical tests such as, Mean, SD and Pearson Correlation. The findings were: There is positive relationship between multiple intelligence, study skills and academic achievement in the context of Master level university students. The students of private sector universities possessed more effective study skills and higher score on the academic achievement as compared to the students of public sector universities.

Mohammad Salehi and Sogol Gerami (2012) studied the “Relationship between Multiple Intelligences and Achievement among Engineering Students”.

The idea of multiple intelligences (MI) is primarily associated with Gardner (1983). It is mainly concerned with the fact that intelligence is multidimensional. It is a shift away from the notion that intelligence is only related to mathematical thinking and ability. Students studying in technological universities are believed to possess this kind of intelligence. This is the case, otherwise admission processes in Iran are quite rigid and only students endowed with this type of intelligence can survive in the academic environments, especially when it comes to engineering fields. The notion of MI was tested among students of Sharif university students. An inventory of MI was administered to 50 students. It can be said that the students were almost representative of the total population of Sharif University because the classes consisted of students coming from various fields of studies. The results ran counter to the expectations of the researcher. It was true that most students possessed logical-mathematical intelligence. A multiple regression analysis showed that logical-mathematical intelligence was not necessarily the best predictor for their end of term achievements. While it is true that these students can survive in the academic environments relying solely on their logical-
mathematical intelligences, attempts should be made to foster other types of intelligences as well. This can be achieved by nominating topics in the English language classes which cut across social skills, introspection, and other types of intelligence types.

**Emad M. Al-Salameh (2012) conducted a study on “Multiple Intelligences of the High Primary Stage Students”**.

This study aims to investigate the multiple intelligences fields among high primary stage students and its relation with academic classification and gender. To fulfill this, (400) students were selected by stratified random way from Salt city government schools.

Results were: The excellent students have high levels of all multiple intelligences fields, while normal students have average levels of all multiple intelligences fields. There were statistically significant differences among high primary stage students in all multiple intelligences fields related to the variable of academic classification (excellent students, normal students) in favor for excellent students. There were no statistically significant differences in overwhelming majority of multiple intelligences fields among high primary stage students due to gender variable.

**Ghazi, Safdar Rehman; Shahzada, Gulap; Gilani, Uzma Syeda; Shabbir, Muhammad Nauman; Rashid, Muhammad (2011) conducted a study on “Relationship between Students’ Self-Perceived Multiple Intelligences and Their Academic Achievement”**.

This study aimed at to investigate the relationship between students' self perceived multiple intelligences and their academic achievement. A significant correlation was found between self perceived verbal/linguistic, logical/mathematical, interpersonal, intrapersonal, naturalistic intelligence and students' academic achievement. There was insignificant correlation between self perceived musical intelligence and academic achievement. Results showed that the relationship between self perceived bodily/kinesthetic intelligence and academic achievement was very weak.

**Eisa M. Al-Balhan (2010) conducted a study on “Multiple Intelligence Styles in Relation to Improved Academic Performance in Kuwaiti Middle School Reading”**.

Research was conducted with middle-school Kuwaiti children to assess the effectiveness of student multiple intelligence styles in predicting students' improved reading skills through academic performance. A group of middle school students who had received first quarter grades and enrolled in an after-school tutoring program were
studied, with half of the students in a traditional tutoring program and the other half in a Gardner multiple intelligence style-tutoring program. Results show that the students in the experimental group (mean = 48.99), whose multiple intelligence was applied to learning, performed better overall for the academic year than the students in the control group (mean = 45.30) who studied using traditional teaching methodology. Gender, school type, and residential living area were all analyzed within the experimental group. The experimental group results show that, with regards to grades during each quarter period, female students attending private institutions living in suburban areas had greater reading improvement.

_Ebru, F. and Firdevs (2010) conducted a study on “The Relationship between Multiple Intelligences and Academic Achievements of Second Grade Students”._

The aim of this study is to investigate the relation between the multiple intelligences and the academic achievement levels of secondary school students. Relational survey method is used in this study. Participants are 250 students from secondary schools in Izmir, Turkey. Data is collecting by Multiple Intelligence Scale for Students and a questionnaire. Students’ first semester accumulative grades are taken as a criteria for academic achievement. Data is analyzed by descriptive statistics. Identifying the multiple intelligences of secondary school students, the differences according to the academic achievement levels of the students will contribute an awareness to the self knowledge and abilities of the students as well as to develop suggestions for programs to enhance their academic achievement levels and to be a reference for further studies.

_Gerry Villarico Fernando and Jay P. Cabrera (2009) made an attempt on “Multiple Intelligences as Predictor of Academic Performance in Accounting: Evidence from a Private University in the Philippines”._

This study determined whether the extent of students’ multiple intelligences were predictors of their academic performance as reflected in their test scores in Cost Accounting and Financial Management. The multiple intelligences include logical intelligence, linguistics intelligence, musical intelligence, bodily intelligence, interpersonal intelligence, intrapersonal intelligence and naturalistic intelligence.

Using descriptive-correlation methods of research, the researchers found out that the 56 student respondents, sampled purposively from Far Eastern University, have a great extent of multiple intelligences and performed “good” in the two aforesaid courses. The averaged scores of students in the two courses who perceived to have a great extent
of multiple intelligences got higher grades than students who perceived to have a moderate extent of multiple intelligences.

The researchers also found significant relationship between logical, linguistics and visual intelligences and the academic performance of the respondents. The respondents’ extent of logical and linguistics intelligences significantly predicts their academic performance in accounting.

*Jaleh Hassaskhah (2009) made an elaborate study on “There is never any one right way to teach! A Case of ‘Multiple Intelligences’”.*

Gardner's Multiple Intelligence (MI) theory claims that every individual is in possession of one or some of eight types of intelligences and depending on the type of those intelligences, the outcome of their performance might be different. This paper intends to validate Gardner's MI hypothesis. 672 typical cases of English and non-English major students and their 26 English teachers participated in the study. Class observation, pre-post observation interviews and Gardner's "Multiple Intelligences Inventories for EFL Students and Teachers" were used as the means for data collection. Using the MANOVA statistical analysis, the study indicates that there is a relationship between discipline and the types of intelligences, yet the activities observed in classrooms had no relationship with neither teachers' nor students' intelligence types, which underscores the cultural context of multiple intelligences.

*Razmjoo, S.A., R. Sahragard, and M. Sadri, (2009) conducted a study on “Relationship between Multiple Intelligences, Vocabulary Learning Knowledge and Vocabulary Learning Strategies among the Iranian EFL Learners”.*

This study aimed at identifying the relationship between multiple intelligences (MI), vocabulary learning knowledge and vocabulary learning strategies among the Iranian EFL learners.

The participants were senior students at Shiraz Azad University majoring in English Language Teaching. More specifically answers to the following research questions were sought: Is there any relationship between MI and vocabulary learning knowledge (vocabulary breadth) among the Iranian EFL learners? Which type of intelligence or combination of intelligences is the best predictor of vocabulary learning knowledge? Is there any relationship between types of strategies and the MI types? To this end, three kinds of instruments were used in this study: Nation's Levels Tests (2001), Schmitt's vocabulary learning strategies (1997) and an MI questionnaire whose construct
validity was checked through principal factor analysis. The data were analyzed both descriptively and inferentially.

The findings revealed that there is a relationship between MI and vocabulary learning knowledge. Furthermore, among different domains of intelligence, linguistic and natural intelligences make statistically significant contribution to the prediction of vocabulary learning knowledge. Moreover, stepwise multiple regression analysis confirmed the same finding. Concerning the relationship between MI and vocabulary strategies, the results indicate that among 5 categories of strategies, determination, social and memory strategies have a significant relationship with several domains of MI. Seemingly, the results are context-bound not universal.

**Douglas, Onika; Burton, Kimberly Smith; Reese-Durham, Nancy (2008) executed a study on “The Effects of the Multiple Intelligence Teaching Strategy on the Academic Achievement of Eighth Grade Math Students”:**

Education has been the platform of many individuals in and out of politics. Often, the topic is focused on school test scores, student achievement, and the demand for highly qualified teachers in the classroom. The No Child Left Behind legislation mandates school systems to adhere to a curriculum that promotes academic growth. Therefore, teachers must incorporate strategies that will lead to increased academic performance. This applied quantitative study makes a comparison between two distinct instructional methods: Multiple Intelligence (MI) and Direct Instruction (DI). The current research examines how these methods affect the achievement scores in Mathematics. The results suggest that performance on a post mathematics assessment for students exposed to MI will show considerable increase when compared to those taught using DI.

**Andrew Lee Hock Cheong, Ang Wen Loong, Tey Ban Cheng and Nakiran Rajangam (2007) conducted a study on “The Relationship between Multiple Intelligences and Academic Results of Taylor’s Business Foundation Students”:**

No one student is alike and educationists must realize that a single teaching method fit for all will not work in a classroom. A student’s strength in a particular intelligence has to be identified from the onset to enable the teacher/lecturer to suit his/her teaching styles according to the intelligence of each individual student. Based on the Multiple Intelligences (MI) theory by Gardner (1983), this study seeks to explore whether Multiple Intelligences among students have an influence in their academic
results in Accounting I, Economics I and English for College Studies I. 259 students from the Taylor’s Business Foundation Programme were surveyed. Universal significant positive relationships have been found to exist between verbal linguistic intelligence and intrapersonal intelligence with all the three subjects mentioned earlier.

**Bernstein, Dorrie (2006) made a study on “The Impact of Implicit Theories of Intelligence on the Motivation of Students with Learning Challenges”.**

The present study explored the motivational processes of 7th through 11th graders receiving support services through special education. A well-researched theoretical model of motivation was employed in order to facilitate understanding of the underpinnings of achievement motivation among individuals in this special population. Specifically, Dweck's motivational process model was applied including implicit theories of intelligence and achievement goal orientation as predictors of individual response to failure. Following the administration of a failure scenario, behavioral and cognitive responses to failure were measured. Participants in 3 suburban public school districts completed a questionnaire measuring implicit theories of intelligence and achievement goal orientation (i.e., learning, performance-approach, and performance-avoidance). In addition, the students read a failure scenario and then completed questions about their attributions for failure and positive strategy use following failure. Findings revealed that an incremental theory of intelligence and a learning goal orientation were predictive of a mastery-oriented response to failure as seen in use of positive strategies and mastery-oriented attributions. The predictive power was stronger for positive strategy use when the effects of age were accounted for. Younger students used more positive strategies. Performance-approach and performance-avoidance goals did not have any relationship to other variables.

**Kitt, Abigail (2006) conducted a study on “The Articulation of the Multiple Intelligence and Empathic Intelligence Theories in Educational Drama”.**

This study explored the articulation of multiple and empathic intelligences in educational drama. The investigation used a qualitative multiple-case study to examine the teaching methodologies of two teachers, as well as the structure of the drama units they taught. Following the observations the two teachers were then interviewed to explore their interpretation of their drama teaching. The findings indicated that multiple and empathic intelligences are articulated in educational drama in varied and complex
ways. This finding was similar for both units, whether or not the teachers specifically planned with multiple and empathic intelligences in mind. The teachers confirmed that drama integrates the intelligences.


The purpose of the study was to discover the relationship that existed between motivation and intelligence. The researcher wanted to determine if children may have learned best when their entire range of capabilities was addressed and when multiple connections were encouraged in a balanced way. As research is increasingly demonstrating that the definition of intelligence is too narrow to describe most students, researchers in various disciplines have challenged the established notion of intelligence by offering substantial evidence that demonstrates how schools limit intellectual growth mostly through their limiting focus on a fixed model of the learner. This study explored the relationship between current knowledge of the human mind and the process of instruction as it refers to the education of at-risk children.

Ahmad, R.; Abu Kasim, N.H.; Palaniappan, A.K. (2006) conducted a study on “Multiple Intelligences and Academic Performance among Malaysian Undergraduate Dental Students”.

The objective was to identify the nature of multiple intelligences among dental students and investigate the relationship between these intelligences and performance in the various skill areas of dentistry. Sixty-one final year dental students at the Faculty of Dentistry, University of Malaya in Malaysia were administered a Multiple Intelligence Inventory [(MII), David Larear, 1991)] after their final written examinations. MII comprised 80 4-point likert items assessing eight types of multiple intelligences: Verbal/Linguistic, Visual Spatial, Logical Mathematical, Musical Rhythmic, Intra Personal, Body Kinesthetic, Inter Personal and Naturalist. These intelligences were correlated with six academic performance scores: Amalgam Class II, Composite, Crown & Bridge, Endodontic, Problem Based Learning and the Final Written Exam. The data were analysed by Pearson Product Moment Correlation and t-test.

Significant correlations were found between intrapersonal intelligence and composite and between body kinesthetic and composite scores. High Amalgam Class II scorers obtained significantly higher scores on Intrapersonal Intelligence than low
scorers. High composite scorers have significantly higher body kinesthetic intelligence than low scorers. Low endodontic scorers obtained significantly higher scores on visual spatial intelligence than high scorers. High PBL scorers obtained significantly higher interpersonal and naturalist intelligence than low scorers.

Hodge, Ethan Elliott (2005) made a study on “Best-Evidence Synthesis of the Relationship of Multiple Intelligence Instructional Approaches and Student Achievement Indicators in Secondary School Classrooms”.

The purpose of the study was to synthesize the literature in order to assess and quantify (if possible) the relationship between MI instructional approaches and student achievement indicators in secondary school classrooms (grades 6-12). This study employed the best-evidence synthesis methodology devised by Robert Slavin. Criteria for study inclusion included germaneness, minimization of bias, and validity.

This study allows for several conclusions: (1) a very limited amount of research focusing on the relationship of MI instructional approaches and student achievement indicators in secondary school classrooms exists, (2) instances of MI instructional approaches vary widely in methodology and implementation but demonstrate a fairly consistent philosophical approach, and (3) the studies included in this research synthesis failed to prove causation in the relationship of MI instructional approaches and student achievement indicators in secondary school classrooms. However, substantial evidence exists showing that multiple intelligences theory contributes positively to student learning and development.

Walker, David E. (2005) conducted a study on “Increasing Verbal Participation of Gifted Females through the Utilization of Multiple Intelligence Theory”.

The goal of the study was to identify causations of the girls' reticence to demonstrate verbalization skills that were commensurate with those of their male counterparts and to develop strategies to promote increased female verbal participation in classroom discourse. The study utilized multiple intelligence theory as a method for encouraging gifted females to increase their verbal interactions within classroom lessons. All of the gifted learners were observed daily for quantitative data to assess the frequency with which each gender communicated verbally, initiated verbal contact, was offered higher-level query, and engaged in dialogue with teachers. All students were interviewed 4 times during the study. Both teachers of the gifted met weekly to discuss the study's progress, and parents of gifted females were randomly selected for interviews.
All of the gifted learners were administered the Bar-On Emotional Quotient-Inventory: Youth Version (Bar-On and Parker, 2000) to collect pre-and posttest data. The pre-and posttest data demonstrated little significant change in female students' emotional quotient above the mean. Tallies on the observational sheets documented an increase in verbal participation by female learners. However, the females' frequencies of self-initiated speaking and responses to higher-level inquiries did not increase to the levels projected by the writer.

_Fleming, Angela Rene (2005) executed a study on “GED Acquisition Rates from an At-risk Youth Program’s Curriculum as Influenced by Three Criteria: Multiple Intelligence Usage, Class Size, and its Mentorship Program”._

The purpose of the study was to determine whether a combination of three factors: (1) a reduced student teacher ratio (class size reduction); (2) a mentorship program and (3) a varied curriculum, via use of the multiple intelligences would successfully improve secondary at risk youths’ high school graduation rates.

The graduation rate and GED test scores of students ages 16-18 who attended the National Guard Youth Challenge Academy in various parts of the country were analyzed. This study also analyzed the administrators’ perspective of the Academy’s curriculum along various facets, including the three main criteria previously listed by means of a survey. Along this realm, the study determined that both students and school administrators found that the following three components were beneficial towards the at risk youths’ academic success: (a) a reduced student to teacher ratio that allowed for one on one tutoring (b) a stable and productive mentorship program and (c) a curriculum that provides for the multiple intelligences to be exercised—especially in terms of outdoor activities and computer skills. This study discovered that for this particular school system, the three key components listed above were academically and socially advantageous to the youths who were considered as being at risk of social and academic failure.

_Uhlir, Pamela (2003) conducted a study on “Improving Student Academic Reading Achievement through the Use of Multiple Intelligence Teaching Strategies”._

This report describes an action research project improving student academic reading achievement. The targeted population consisted of fifth grade students in a growing suburb of a major mid-western metropolitan area. The evidence for existence of the problem included student surveys, assessments, teacher observations and checklists.
Analysis of probable cause data revealed some students were not motivated to meet or exceed expectations in reading comprehension on classroom assessments, district tests, and state evaluations. The lack of students' skills to read strategically and for better comprehension was observed by the teacher. A review of solution strategies suggested by knowledgeable others, combined with an analysis of the problem setting, resulted in the selection of two major categories of intervention: multiple intelligences strategies, and guided practice of reading skills. Post-intervention data indicated an increase on reading skill tests, improved motivation to read, increased on-task behavior, and improved cooperative learning skills used with multiple intelligences strategies.

*Cutshall, Lisa Christine (2003) made a study on “The Effects of Student Multiple Intelligence Preference on Integration of Earth Science Concepts and Knowledge within a Middle Grades Science Classroom”.*

This research was conducted in an eastern Tennessee 8th grade science classroom with 99 students participating. The action research project attempted to examine an adolescent science student's integration of science concepts within a project-based setting using the multiple intelligence theory. In an effort to address the national science standards, in particular the "science for all" equity principle, a project-based assignment was designed that incorporated each student's natural or innate multiple intelligence.

At the conclusion of each project-base unit, students were given an opportunity to express their integration of project material in one of eight ways based on an intelligence menu. The focus of this research as to study how middle school students integrate conceptual information in the area of science, and its relationship to unique diversity and multiple intelligence. The project-based approach allowed students to learn in personally diverse modalities using a linear or nonlinear fashion based on personal choice. A student's natural multiple intelligence, based on results from a Multiple Intelligence Developmental Assessment Scale (MIDAS) test, did not show evidence of better integration skills. However, upon analysis of results, significantly more students chose the spatial intelligence to represent integration.

*Hanley, Chris; Hermiz, Carmen; Lagioia-Peddy, Jennifer; and Levine-Albuck, Valerie (2002) executed a study on “Improving Student Interest and Achievement in Social Studies Using a Multiple Intelligence Approach”.*

This action research paper describes a program initiated by teacher researchers to improve academic achievement and interest in social studies. The targeted group
consisted of fifth graders in a lower middle class community in the Midwest. Analysis of the problem-causes data showed three main factors: curriculum, attitude, and effect. In regard to curriculum, the study showed that: (1) the curriculum does not fit the multiple intelligences (MI); (2) many teachers do not want to change or are not trained in teaching using the MI; and (3) there is a lack of authentic assessment readily available to teachers. The second factor is attitude. Teachers teach using their strongest biases, and the Western education system emphasizes math and verbal education. The third factor is effect. Students were not using what they have learned or their full potential, and many teachers were unaware of their students' talents. The literature review of instructional solutions named these categories: Instructional, Behavioral, and Interest. The researchers focused on the MI solution, specifically, the intervention of the MI approach to social studies. The intervention occurred from September 2001 to December 2001. Fifth graders would increase student achievement and interest, by participating in multiple intelligence activities. Evaluation was by pre- and post-tests, and surveys.

Results showed that interest in social studies increased 11% as evidenced by the student observation checklist and the climate surveys. Average achievement grade on the post-test in the experimental class was 77% as opposed to the control classroom's average grade of 70%. Appended are: Parent Letter; Consent to Participate; Social Studies Pre-/Post-Interest Survey; Seven Multiple Intelligences Quiz; Scoring of the Quiz; Native American Test: You Know about Native Americans Test; and Multiple Intelligence Survey.

*Shah, Tejal and Thomas, Alexis (2002) conducted a study on “Improving the Spelling of High Frequency Words in Daily Writing through the Use of Multiple Intelligence Centers”.*

This study describes a 12-week program developed with the intent of improving the spelling of high frequency words using centers that will activate each of the eight multiple intelligences. The targeted population consists of second and third graders in a suburban community in northeast Illinois. Parent surveys, teacher interviews, observations, pretests, weekly spelling tests, and writing samples document evidence that this problem exists. Analysis of probable cause data reveals that a concern exists regarding spelling instruction at both the national and local level. Upon reviewing the solution strategies suggested by the professional literature and an analysis of the possible problem causes, an action plan was designed. The researchers developed and used
student centers within the classroom to activate the multiple intelligences thereby increasing the retention of high frequency spelling words by moving beyond verbal/linguistic instruction. In addition, students were immersed in a print rich environment through display of a word wall, which students used to aid them in daily writing. Finally, students were encouraged to become more accountable for their learning by expanding the ways in which they gathered information and demonstrated their knowledge. Post intervention data indicated an increase in the ability to spell high frequency words conventionally within students' daily writing, and a new understanding of how multiple intelligences can enhance the students' learning in all areas of the curriculum.

2.3. STUDIES RELATED TO STUDY INVOLVEMENT

A. Indian Studies


The objective of the study is to investigate the significant difference in the study involvement among higher secondary students in terms of their gender, region, medium, school type and socio-economic status. 408 higher secondary students were taken as the sample of the study. Among themselves, 204 students were boys and the remaining 204 students were girls. The researcher used Study Involvement Inventory of Asha Bhatnagar as the tool of the study. Critical ratio and analysis of variance were used to verify the hypotheses. The findings were: (i) There is a significant difference between study involvement and gender, region, medium of instruction and family type; (ii) There is a significant difference in the study involvement with type of school and socio-economic status.


The objectives were: (1) To find the level of study involvement and achievement motivation of standard IX and XI students; (2) To find the significant difference between the students studying standard IX and XI students in their study involvement and achievement motivation; (3) To find the significant relationship between the study involvement of students studying standard IX and XI students and their achievement motivation.
Survey method was used. Study Involvement Inventory developed by Asha Bhatnagar (1982) and Achievement Motivation Scale (1961) were used for collecting data. The investigator has selected 180 standard IX students and 170 standard XI students from 16 different higher secondary schools in Kanchipuram district.

The findings were: (1) There is significant difference between the students studying standard IX and XI students in their study involvement. The students studying standard XI have better study involvement; (2) There is significant difference between the students studying standard IX and XI students in their study involvement with regard to gender. The male and female students studying standard XI have better study involvement; (3) There is significant difference between the students studying standard IX and XI students in their achievement motivation. The students studying standard XI have better achievement motivation; (3) There is significant relationship between the study involvement of students studying standard IX and XI students and their achievement motivation.

Shanthakumari, S. (2013) conducted a study on “Study Involvement and Achievement in Social Science of Standard IX Students”.

The objectives were: (1) To find the level of study involvement and achievement in social science of standard IX students; (2) To find the significant difference in their study involvement and achievement in social science of standard IX students with regard to selected background factors; (3) To find the significant relationship between the study involvement of standard IX students and their achievement in social science.

Survey method was used. Study Involvement Inventory developed by Asha Bhatnagar (1982) was used for collecting data. In this study, the investigator adopted simple random sampling method for data collection. The investigator has selected 300 standard IX students studying in the 10 higher secondary schools in Dindigul District.

The findings were: (1) There is significant difference between male and female standard IX students in their study involvement. Female students have better study involvement; (2) There is significant difference among standard IX students studying in boys’ schools, girls’ schools and co-education schools in their study involvement. Girls’ school students have better study involvement; (3) There is significant difference between standard IX students studying in rural schools and urban schools in their study involvement. Urban students have better study involvement; (4) There is significant difference between male and female standard IX students in their achievement in social
Female students have better achievement in social science; (5) There is significant relationship between study involvement of standard IX students and their achievement in social science.

**Surinder Singh Thakur (2012) executed “Study Involvement Among Women Students”**.

The study was undertaken to investigate the study involvement among women students in relation to residence locality, type of institution and socio-economic status.

The sample of the study comprised 406 women subjects of Senior Secondary Schools who were selected through random cluster sampling technique. The tools were: (1) Study Involvement Inventory by Asha Bhatnagar and (2) Socio-Economic Status Scale Questionnaire by Jalota et al. were used.

The findings revealed that type of institution and SES had significant influence on study involvement of women students. Residence locality was not found to be important factors in study involvement.

**Madesh, P. (2012) conducted a study on “Study Involvement and Achievement in Tamil of High School Students”**.

The objectives were: (1) To find the level of study involvement and achievement in Tamil of high school students; (2) To find the significant difference in their study involvement and achievement in Tamil of high school students with regard to selected background factors; (3) To find the significant relationship between the study involvement of high school students and their achievement in Tamil.

Survey method was used. Study Involvement Inventory developed by Asha Bhatnagar (1982) was used for collecting data. In this study the investigator adopted simple random sampling method for data collection. The investigator has selected 300 high school students studying standards VIII and IX from 8 schools in Salem district.

The findings were: (1) 62.67% of high school students have high level study involvement; (2) 67.00% of high school students have high level achievement in Tamil; (3) The male and female high school students do not differ significantly in their study involvement; (4) The high school students differ significantly in their study involvement with regard to mother’s education. The students of illiterate mothers have better study involvement than their counterparts; (5) The high school students differ significantly in their study involvement with regard to availability of electricity. The students who do
not have electricity provision in their houses have better study involvement than their counterparts; (6) The study involvement of high school students is significantly correlated with their achievement in Tamil.

_Seyed Ahamed (2011) made a study on “Home Environment and Study Involvement – A Study on Higher Secondary Students”._

The objectives were: (1) To find the nature of home environment perceived by higher secondary students; (2) To find the level of study involvement of higher secondary students; (3) To find the significance of difference in the perceived home environment and study involvement of higher secondary students in terms of background variables; (3) To find the significance of correlation between the home environment perceived by higher secondary students and their study involvement.

The investigator selected 300 standard XI students from 10 different higher secondary schools in Thoothukudi district. The tools were: (1) Study Involvement Inventory developed by Asha Bhatnagar (1993). (2) Home Environment Scale structured and validated by Arockiasamy and Mary Joice (2003).

The findings were: (1) Significant difference is found between the male and female higher secondary students in their perceived psychological environment. Male students have better psychological environment than their female counterparts; (2) There is no significant difference in the study involvement of higher secondary students in terms of all the selected background variables; (3) There is significant correlation between the home environment perceived by higher secondary students and their study involvement.

_Murugan, B. (2008) executed a study on “Study Involvement of High School Students in relation to their Home Environment”._

The objectives were: (1) To find the level of study involvement and home environment of high school students; (2) To find the significance of difference in study involvement and home environment of high school students with regard to background variables; (3) To find the significance of relationship between study involvement and home environment of high school students.

The investigator selected 297 standard IX students from 7 different High and Higher Secondary Schools of Thoothukudi district. The tools used were: (1) Study
Involvement Inventory developed by Asha Bhatnagar (1993). (2) Home Environment Scale structured and validated by Arockiasamy and Mary Joice (2003).

The findings were: (1) Significant difference is found between male and female high school students in their study involvement. Male students are better than their female counterparts in their study involvement; (2) There is significant difference in the study involvement of high school students with regard to family size. Students from small families are better than their counterparts; (3) Study involvement is significantly correlated with home environment of high school students.

Kaur (2002) made a study on “Effectiveness of Various Classroom Teaching Strategies in relation to Students Achievement and Interest”.

The objectives were: (1) To compare the mean achievement scores of students in each of the five experimental groups taught by question-answer, group discussion, assignment, question answer and assignment, question answer, discussion and assignment strategies respectively with the student of control group taught by lecture strategy; (2) To find out which teaching strategy is more effective as compared to others in terms of students’ achievement.

Pretest-posttest design was used in research. The duration of treatment was two months. The sample comprised 120 students of 10+1 studying in arts stream in government senior secondary school, Jagraon City, Punjab. The data were collected with the help of Group Test of General Mental Ability by Tandon Scale by Singh and Pandey, and Achievement Test in Political Science developed by the investigator. The data were analyzed by t-test.

The findings were: (1) All the six groups were nearly identical as these did not differ significantly in their level of achievement of political science before starting of experiment and before giving them different treatment; (2) The students taught through question answer strategy scored significantly higher score separately on achievement and political interest as compared to the group of students who were taught through lecture strategy; (3) There was no significant difference separately in the achievement and political interest of students of two groups, one taught by assignment strategy and the other taught by lecture strategy; (4) The mean scores of achievement and political interest of students taught through group discussion strategy was significantly higher as compared to the students taught through lecture study; (5) There was insignificant difference separately in the achievement and political interest scores of students of two
groups - one taught by the question answer assignment strategy and the other by lecture strategy; (6) Mean achievement score of students taught by question answer assignment group discussion strategy was significantly higher as compared to lecture strategy; (7) Amongst all the teaching strategies, group discussion strategy considered to be the best strategy individually or in combination with question answer strategy in case of achievement in political science; (8) Mean political interest score of question answer assignment group discussion strategy group was significantly higher as compared to the mean political interest score of lecture strategy group; (9) Among all the teaching strategies, group discussion strategy was the best followed by question-answer-assignment-group discussion strategy and question answer strategy in case of political interest.

Mohammad, D. (2001) made a study on “Role of Academic Achievement, Intellectual Capacity and Educational Interest in Faculty Selection of Intermediate (10+2) Male and Female Students Studying in Central School”.

The objective of study was to collect reliable information about how intellectual capacity, educational interest and academic achievement affects the faculty selection of students.

The study was descriptive in nature. The sample of 300 students was randomly selected from the population of XI standard students studying in Central schools of Gwalior and Jhansi. The tools used for data collection were Intellectual Ability Test by P.N. Mahrotra and Educational Interest Test by S.P. Kulsheshtra. Marks obtained in X standard were considered as academic achievement. The data were analyzed with the help of t-test.

The findings were: (1) Students of science, commerce and arts differ in their intellectual ability; (2) There was significant difference in intellectual capacity of science, commerce and arts students; (3) The difference in intellectual capacity on the basis of gender was found significant in science faculty students only; (4) The students of science faculty differ in their commerce interest significantly from commerce and arts faculty students; (5) There was significant difference in commerce interest of female students of science and commerce faculty and commerce and arts faculty. But the difference was not significant in science and arts faculty; (6) When the commerce interest of students belonging to different faculties was compared, there was no significant difference in commerce and arts faculty students, but the difference was
significant in science and commerce faculty and science and arts faculty students; (7) The female students of science and commerce groups were equal when their arts interest was compared; (8) There was no significant difference in arts interest of science and commerce students, but the difference was significant when the arts interest of commerce and arts, and science and arts faculty students were compared; (9) The science interest in educational interest was also considered; (10) The science interest of female students of the three faculties i.e. science, commerce and arts differ significantly.

B. Foreign Studies

Mieke Van Houtte and Peter A. J. Stevens (2011) conducted a study on “Study Involvement of Academic and Vocational Students: Does Between-School Tracking Sharpen the Difference?”

Although a rich tradition of mainly U.S. and U.K. research focuses on the nature and effects of tracking students within schools, little research has investigated the importance of tracking students in the same or in separate schools. The authors used data from a unique, representative survey in Flanders (Belgium) to examine how students’ study involvement varied between multilateral schools (in which all different tracks are offered) and categorial schools (in which only particular tracks are offered) and whether the relation between track and study involvement varied between these school types. Multilevel analyses of data gathered in 2004 and 2005 from academic and vocational third and fifth grade students in a sample of Flemish secondary schools showed that vocational students had slightly lower study involvement in multilateral schools. Although academic students were more study involved than vocational students, this difference was larger in multilateral schools than in categorial schools. The data suggest that in multilateral schools, vocational students compared themselves with academic-track students, consistent with the hypothesis of increased status deprivation, resulting in even stronger anti-school attitudes.

Fernandez-Kaltenbach, Elena (2009) did a study on “Parental Involvement and the Developmental Stages of Writing: Knowledge and Skills to Assist Children and Parent Perceptions on their Experience”.

A kindergarten parent workshop series on the developmental stages of writing was created and assessed. The intended outcome was to empower parents with writing knowledge and writing skills so that they could apply this knowledge and skills at home with their child.
The researcher developed the workshops from parent involvement research, developmental stages for writing, and the knowledge of adult learning. To assess the outcomes, the researcher utilized a mixed-methods qualitative approach analyzing responses from a pre and post assessment, oral discussions from videotaped sessions, researcher field notes, and parent responses to focused questions in a journal. Thirty-five Spanish-speaking parents from a low socio-economic status school in Southern California voluntarily participated in 4 workshops led by a bilingual teacher. Two separate series of workshops were conducted in Spanish, the participants' primary language. Using McMillan and Schumacher's (2006) inductive analysis of the data collected, 5 primary themes emerged: parent confidence, parent-child communication, parent-parent interaction, parent-child bonding, and parent increased knowledge of writing.

Based on the analysis of the four data gathering methods, the following major conclusions were drawn. First, parents revealed a change in their self-efficacy during the oral portion of the workshops. Every session included a 20-minute parent oral discussion regarding parent-child interaction during the assigned writing activity at home. Most parents expressed more frequent and positive interactions with their child. Participants changed from a parent who simply checked that homework was completed to a parent who actively participated in the homework process. Also, parents reported that they provided resources, information, a place to study and personal feedback on their child's work. Second, all parents expressed high satisfaction and benefits from the workshops. Third, all parents had an increase in knowledge and skills in the developmental stages of writing and 80% percent accurately assessed their child's writing stage at the completion of the workshop.

Norfleet, Wendy (2008) conducted a study on “Impact of Active Learner Involvement on Achievement and Retention”.

The focus of the study was to look at three instructional strategies, worked-out examples, fading, and underlining, and to identify if one method resulted in better achievement and retention when learning computer logic. To account for learner variances, selected learner characteristics were also captured. The learner information collected consisted of age, gender, GPA, academic year, academic major, and learning style.
The participants consisted of 65 freshmen and sophomore students of the University of Detroit Mercy. Initially students were provided a data collection sheet in which the selected learner characteristics were provided. For the learning style assessment, participants took the online VARK learning style assessment. Upon completion of the data collection sheet, participants were randomly assigned instruction on computer logic, with one of the three instructional strategies. Participants then completed an immediate post-test to record achievement and a delayed post test, two weeks later, to measure retention.

The findings were: (1) The worked-out examples group scored significantly higher on the retention post test. (2) There was a positive correlation between age and retention. As age increased, learners achieved higher retention scores. (3) The majors, Health Professions, Nursing, and Science out performed the other major, which consisted of liberal arts, business, and education, on retention.

Willis, Deborah Margery (2008) executed a study on “Involvement in Academic Study: an Investigation of the Nature, Effects and Development of Involvement in University Courses”.

The purpose of this research was to examine involvement in study within the framework of the approach to learning literature. Although not discussed in detail, involvement has been related to a deep approach to learning (Ramsden, 1984). Specific interest focused on students' perceptions of the concept of involvement; the relation between involvement, approach to learning and educational orientation (Taylor et al., 1980); the relationship between Involvement in study and learning outcome and finally, the reasons why students become involved and factors affecting change over time. The research methodology used was consistent with the view originally developed by Marton and Saljo (1976a) - that learning can be effectively studied by focusing on student perception of the learning process. Consistent with Marton's methods of research, the data was drawn from interviews (with 58 university students). Additional data was supplied by open ended questions and Entwistle and Ramsden's approach to study inventory. Students produced a range of involvement definitions that emphasised activity but also incorporated feelings about what is studied. However, the experience of involvement is course-specific and it was demonstrated that students direct different levels of involvement to different courses. An investigation of factors that affect students' concept of involvement, revealed that approach to learning was important in determining
the type of involvement activity students engage in ('basic' or 'more than required') and the level of involvement activity (full, limited, none). A vocational educational orientation was not incompatible with the development of involvement provided this was combined with interest in subject matter. Commerce students provided an interesting example of this point in that they typically possessed a strong vocational educational orientation towards their Commerce courses but directed their interest (and in many cases their full involvement) to courses outside the Commerce faculty. Analysis of the data indicated that female students were more likely to become fully involved in their study than did their male colleagues. However, the pattern of results was complicated by degree and approach to learning. It was suggested that the sex differences may be due to the fact that females were more likely to combine interest and vocational interests in their choice of courses. The results indicated that a relationship did exist between the quality of the involvement activity and the quality of the learning outcome. The open ended responses indicated that students possess one of three involvement intentions (positive, neutral or negative).

2.4. STUDIES RELATED TO ACADEMIC ACHIEVEMENT

A. Indian Studies

Ganai, M.Y. (2013) conducted “A Comparative Study of Adjustment and Academic Achievement of College Students”.

The sample comprised of 80 students who were on rolls in various higher secondary schools of district Baramulla. The tool used for data collection was Mental Health Battery by A.K. Singh and Alpana Sengupta which is the battery of six tests including Emotional Stability (ES), Overall adjustment (OA), Autonomy (AY), Security-Insecurity (SI), Self – Concept(SC), Intelligence (IQ). Data was analyzed by using mean, SD and t-value. The findings revealed that the male and female adolescents differ significantly on mental health. However the two groups showed no difference on academic achievement. Further the two groups showed difference on various dimensions of the Mental Health Battery including Emotional Stability (ES), Overall Adjustment (OA), Security Insecurity (SI) and General Intelligence. The main difference favored the male adolescents in case of these dimensions. However, the two groups showed no difference on Autonomy (AY) and Self Concept dimension (SC).
Ghayas, and Farah Malik (2013) did a study on “Sociability and Academic Achievement as Predictors of Creativity Level among University Students”.

This study investigated the sociability and academic achievement as predictors of creativity among university students. The sample consisted of 300 undergraduate students (155 girls and 145 boys) taken form pure sciences and arts and social sciences departments of Bs Hons. Classes. The age range of the sample was 18 to 24 years. Abedi Creativity Test and translated version of California Psychology Inventory were used to measure creativity, and sociability respectively. Cumulative grade point averages (CGPA) of previous semesters (III and V) were taken as an index of academic achievement. Analysis revealed that sociability and academic achievement is significantly related with the creativity but academic achievement is not significantly related with the sociability of students. Furthermore, the results demonstrated that sociability and academic achievement are significant predictors of level of creativity. The results revealed that academic achievement of girls was higher than that of boys. The analysis demonstrate that students of arts and social sciences were significantly more sociable as compared to the students of pure sciences.

Joshi, Shobhna and Rekha Srivastava (2009) executed a study on “Self-esteem and Academic Achievement of Adolescents”.

This study investigated the self-esteem and academic achievement of urban and rural adolescents and examines the gender differences in selfesteem and academic achievement. The sample of this study consisted of 400 adolescents (200 urban and 200 rural) from Varanasi District. The boys and girls (aged 12 to 14) were equally distributed among the urban and rural sample. Self-esteem was measured by Self-esteem questionnaire and academic achievement was measured by academic school records. Findings indicated that there were no significant differences with regard to self-esteem of rural and urban adolescents. There were significant differences with regards to academic achievement of rural and urban adolescents. Urban adolescents scored higher in academic achievement as compared to rural adolescents. Boys scored significantly higher on self-esteem as compared to girls. Significant gender differences were found in academic achievement. Girls were significantly higher on academic achievement as compared to boys.
Chand, Suresh and Kulwinder Singh (2009) conducted a study on “Socio-Demographic Correlation of Language Achievement”.

This study seeks to ascertain the relationship of socio-demographic variable with that of language achievement. A sample of 861 sixth grade students selected from 34 schools spread over four districts of Himachal Pradesh. Personal data sheet and language achievement test developed and standardized by Suresh Chand (2002) were used to collect the relevant data. Data obtained were analyzed by using t-test. The result showed that (i) paternal and maternal education and occupation, family income and family support in educational matter plays a facilitative role in language achievement of secondary school students (ii) the non-existent gender and cast differentials in language achievement points towards equality in language achievement, though moderate level, (iii) urban conditions are more conducive in language achievement of elementary students.

Dey, Niradhar (2009) conducted a study on “Influence of Emotional Intelligence on Academic Self-efficacy and Achievement”.

This study examined the influence of emotional intelligence on academic self-efficacy and achievement. The participant in the study were 150 undergraduate students at Raipur in the state of Chhattisgarh, India. Their age ranged between 18 to 20 years with mean age of 19 years. Two valid and reliable instruments were used to assess emotional intelligence and academic self-efficacy while participants 12th Annual marks were used as measure of academic achievement. Descriptive statistics, Pearson product moment correlation and hierarchical regression analysis were used to analyse the data. The result demonstrated that emotional intelligence and academic self-efficacy significantly co-related with academic achievement.

Mahmoudi, Armin and Ningamma C. Betsur (2009) made an attempt on “Relationship between Adjustment and Academic Achievement”.

This study examined the relationship between adjustment and academic achievement. Adolescence is a transitional period of one’s life between childhood and adulthood during which some important biological, psychological and social changes take place. It is a period of storm and stress. Adolescents have to adjust with their own changes in personality on one side and the changing socioeconomic environment on the other side. Some adolescents find it difficult to adjust normally with these changes and
experience some problems, which are characteristic of this developing stage. Adolescent who display antisocial behavior in a variety of settings are at risk of low academic achievement and school failure. As early as the age of school entry, behavior problems are negatively correlated with verbal ability and reading readiness and aggressive students in the primary grades are at elevated risk for grade retention and special education placement.

Ahmad, Sarfaraz and Rashmi Sinha Nigam (2008) conducted a study on “The Effect of Motivation on Academic Achievement of Aided and Private Higher Secondary Students”.

This study aimed to find the effect of motivation on academic achievement of aided and private higher secondary students, a sample of 500 students of higher secondary level were taken. The data was collected on the basis of motivation test by Sharma (1984) and academic achievement was taken as the percentage of class 10th Marks obtained by students. The result suggested that the motivation is significantly related to academic achievement of aided and private higher secondary students. This reveals the motivation affects academic achievement of aided and private higher secondary students.

Chaudhary, Vineeta (2008) investigated the “Impact of Academic Achievement on Creativity”.

This study aimed to find out the correlation between academic achievement and creativity of the creative and non-creative students. A sample of 500 high school students were taken from different schools. A verbal and non-verbal test of creativity of Baquer Mehdi was administered. Creative and non-creative students were categorized by applying Jalota’s Mental Ability Test. Scores of the final examinations were used as the academic achievement of the students.

Singh, Ramesh (2008) conducted a study on “Learning Style Preferences and Academic Achievement School Children”.

This study explored the relationship between learning style preferences and academic achievement of high school pupils. The sample of the present study were the 538 pupils studying in class Xth in the schools /colleges situated in the urban and rural locality of Dehradun district of Uttaranchal state. The data was collected by using learning style Inventory and Record of Annual Examination. X2-values were calculated
to find out the relationship between learning style preferences. The following conclusions were drawn: (a) flexible, aural, short-attention span, non-motivation centered, learning-styles preferences) have been observed to be positively affecting the academic achievement of urban-pupils (both boys and girls), (b) Non-flexible, visual, non-motivation centered and environment free learning styles (preferences) have been observed to be positively affecting the academic-achievement of rural pupils (both boys and girls).

Adeniyi, Adeoye Hammed and Ayebamivi, Victor Torubeck (2008) did a study on “Five Variables as Predictor of Academic Achievement among School-going Adolescents”.

The purpose of the study was to investigate the predictive effects of home, school, society and government on the academic achievements of school-going adolescents in Indian Metropolis of Oye State. The participants were 200 senior secondary school (the SS2) students randomly selected from five secondary schools in Indian Metropolis of Oye State. Their age ranged between 16 and 21 years with a mean age of 17.04 and standard deviation of 2.01. The participants comprised 110 boys and 90 girls. A validated instrument, namely, Academic Performance five factors Inventory (APSS-fI) was used to collect data. The result showed that the five variables compositely predicted academic performance of students. They also revealed that the factor resident in the child uniquely predicted academic performance of the respondent than did other factors.

Sarika (2008) conducted a study on “Locus of Control in Relation to Academic Achievement and Adjustment”.

The objectives were: (i) One purpose was to examine the relationship of academic achievement with endogenous and exogenous locus of control in the case of both boy and girl respondents; and (ii) Another purpose was to examine the effect of locus of control over patterns of adjustment of the respondents. The study was conducted on 120 boys and 120 girls of high school of Patna town. Locus of control was measured using Hashain’s and Joshi’s Rotter’s locus of control scale, the patterns of adjustment was measured using Moshin-Shamshed Bell’s Adjustment Inventory (Hindi adaptation). The Academic Achievement was measured on the basis of academic records of the last two successive examinations of the respondents. Scatter diagram method of correlation was employed for the analysis is the obtain data. In the light of results a significant and
positive correlation was employed for the analysis of the obtained data. In the light of results a significant and positive correlation was found between endogenous locus of control and academic achievement and also between endogenous locus of control and overall adjustment of the respondents. Similarly, a significant and negative correlation was reported between exogenous locus of control and academic achievement and also between exogenous locus of control and overall adjustment of the results.

Gupta, K.M. and Sangai, Sandhya. (2008) conducted a study on “Factors Associated with Low Achievement among SC Children at Upper Primary Level”.

The objectives were: (i) To identify the factors associated with low achievement among SC children at upper primary level; (ii) to analyse teachers’ opinion on the factor associated with low achievement of children. (iii) To analyse the opinions of Scheduled Caste community members on the factors associated with low achievement of children; (iv) to analyse the opinions of children of SC communities on the factors associated with their low level of achievement; (v) to analyse the factor of low achievement among SC children in each of the sampled states namely Chhattisgarh, Maharashtra, Rajasthan and Uttar Pradesh. The investigators constructed three tools for the purpose of data collection to study the factors associated with low achievement. The following five factors were taken into cognizance as they play an important role in the education of children at upper primary stage. They were related to the teacher, the learning, the community, the school and the home of a child. The respondents of the questionnaire were teachers, students, parents and community members. The data were collected from 16 rural and 16 urban schools comprising a total of 52 teachers, 154 students, 41 parents and community members. Findings were: (1) The study has revealed that on the factors associated with teacher and students the community members agreed to a large extent that there was a lack of communication between parents and teachers on the concerns regarding the achievement of the SC students. The students were not able to complete their homework. The teachers lack competence to understand special task concerning the SC students, according to parents and community members. The teachers don’t provide adequate attention to these students in the classroom. About one-fourth community members and parents also expressed that teachers lack healthy and positive attitude towards the SC students. (2) On the factor associated with learning, three categories of respondents agreed that the SC students lack support materials at home. They are weak in studies from the beginning. Teachers and community members agreed that the SC
students lack attention towards studies. They also remain absent from schools for longer duration. They generally lack basic study materials and the curriculum is heavy for them. (3) On the factors associated with school, all the respondents agreed that the SC community is economically, educationally and politically backward. The community lack awareness towards education. (4) On the factors associated with school, all the respondents agreed that the number of students is more in the classes. Various incentive schemes devised for the SC students are not implemented in the true spirit. The parents and community members felt that teachers do not attend school full time and regularly. (5) On the factors associated with home, the three categories of respondents agreed that parents lack awareness towards education and students devote more time in home affairs. They lack physical facilities related to study at home and family members do not always help them in completing their homework. Students are engaged in home affairs by the order of parents and other family members.

_Uniyal, Narayan. Prashad (2007) conducted a “Correlation Study of Level of Aspiration and Schools Achievement in relation to Sex and Caste”._

The objectives were: (i) To verify how far the level of aspiration determined the scholastic achievement of students; (ii) to compare the level of aspiration of high and low achiever students in respect to gender. (male/female); (iii) to explore the level of aspiration of high and low achiever students, in relation to caste (General/OBC/SC/ST). The study was conducted to investigate the impact of level of aspiration on the scholastic achievement of male and female students, studying in Higher education institution’s under the jurisdiction of HNB Garhwal University, Srinagar (Garhwal). By using multistage stratified random sampling technique a sample of 514 male and female, high and low achiever students, were selected from 10 higher education institutions, Educational Aspiration Scale developed and standardised by Saxena (1984) was used to collect information regarding the level of aspiration. The data were analysed by using mean, median and S.D. and “t” test technique. Findings were: (1) The sex and achievement of students do have interactive effects on level of aspiration. (2) Boys and girls did not differ in their educational aspiration. (3) The high achiever students had a higher aspiration level in comparison to their counterpart low achiever students. (4) High achiever students from all caste categories were found to have significantly higher mean scores on educational aspiration then their counterparts.

The objectives were: (1) To study the contributing factors of academic achievement in mathematics; (2) to study the optimising variables of academic achievement in mathematics using linear programming approach. Normative method is employed to describe and interpret the factors. It involves discovering relationship between the existing non-manipulated variables. The normative study to educational problem is one of the most commonly used approaches. For the purpose of the present study, 36 schools have been selected from in and around Chennai district by giving due representation to the management (11 Government schools, 2 Corporation schools, 12 private aided schools and 11 private unaided schools), type (10 boys, 17 Girls and 9 Co-educational schools) and board affiliation of the schools (28 schools belonged to state board and 8 to matriculation). In this study 900 students from Higher Secondary classes were selected randomly by giving due representation to the student related variables such as subject groups, sex, community parental education, etc. Different scales were used to collect data regarding Mathematics Information Processing Skills (MAPS) by Kenneth C. Bessant; Decision Making Skills (DMS) by Scott and Bruce; Attitude towards Mathematics (ATM) by Fennema Sherman; Academic Achievement Test in Mathematics (AATM) by the researcher. In this study, it is observed that mathematics information skills, decision making skills and attitude towards mathematics have made a significant contribution towards the academic achievement. All the four factors of attitude to mathematics (Confidence, Usefulness, Success and Teacher) have made a significant contribution towards the maximisation of the aggregate performance in mathematics.

Anuradha, K., Bharthi, V.V. and Jayamma, B. (2006) conducted a study on “Television Viewing Behaviour of Adolescents – Its Impact on their Academic Achievement”.

The objective was to study the television viewing behaviour of adolescents and its impact on their academic achievement. The sample consisted of 48 adolescent (24 boys and 24 girls) along with their mothers selected randomly from government Telugu medium schools (8th, 9th and 10th standards) in Tirupati town. Adolescents TV viewing behaviour was collected from students as well as their mothers by using two tools ‘omnibus schedule for parents’ and ‘omnibus schedule for children’ (both developed by
Anuradha and Bharathi, 1998). Academic achievement was obtained from school records. The mean Television viewing time for boys was 166.47 mnts (sd = 98.97) and the same for girls was 182.89 mts (s.d= 93.820). Adolescent did not differ significantly in their TV viewing behaviour according to sex, grade and type of family. The percentage of marks was found to be more for adolescents with cable connection than those without cable connection.


The objective of the study is to identify the most appropriate learning style variables and other cognitive, affective and personality variables, beside measuring their percentage contribution that would optimized (maximize) the academic achievement in mathematics. To meet the objective, required data were collected from a total of 1,000 students drawn from 30 schools by giving due representation to various school-related factors like gender, subject, group and community. Parental education were also given due representation while selecting the sample. Two mathematics scales were used to measure the factors (decision variables) affecting academic achievement. From the optimal solution obtained it may be concluded that if the students adopt reflexive learning style to a greater extent (about 76% ) they can score about 22% of the overall score and if they attach 96% importance to the subject mathematics, they can score about 25% of the overall score. If a student has about 90% Internal Locus control, he can score about 19% of the overall score. If he has 100% left brain dominance he will be able to score about 22% of the overall score.

Sengupta, Madhumala (2005) conducted a study on “Environmental Awareness of the Environmentally Active and Passive Students in relation to Motivation and Academic Performance”.

The objectives were: (i) to identify environmentally active and passive students and their possible differences in respect of different variables and to predict environmental action; (ii) the research also seeks to find out any relation that may exist between environmental awareness and academic achievement. The sample was made of 400 students selected from 19 high schools from Kolkata and South 24 Parganas. It was divided into eight equal categories. Tools used in this study are Motivation towards Environment Scale developed by Pelletier et al. and a scale of environmental awareness
prepared by P. K. Chakraborty and Madhumala Sengupta. Statistical techniques named ANNOVA, t-tests and regression analysis were used. Findings were: (1) The research revealed that environmental awareness may not always lead to environmental action. (2) The Science group students appear to be more active and so are the suburban students; (3) No difference was found in environmental awareness and action due to gender and academic performances. (4) Most importantly, the environmentally and passive students differed in all levels of motivation.

_Saini, S. (2005) conducted a study on “Family Environment and Academic Achievement of Adolescent Children of Working and Non-working Mothers”._

The objectives were: (1) To study and find out the difference in the family environment of adolescent children of working and non-working mothers; (2) to study and compare the academic achievement of adolescent children of working and non-working mothers. The present study was conducted on a sample of 415 adolescents selected from the government and private senior secondary schools of the U.T., Chandigarh, within the age group of 14-17 years. The technique of stratified random sampling was used for the selection of the sample. The tools were: Family Environment Scale (FES) by Moos and Moos (1986) and Battery of Achievement Tests by Anand (1971) for data collection. The statistical tools used mean, standard deviation and ‘t’ test were used for data analysis of this study. The family environments of adolescent children of working and non-working mothers were significantly different. In respect of academic achievement also children of working mothers were much better than the adolescent children of non-working mothers’.

_Pada, M. (2000) did an “Analysis of Relationship between Academic Achievement and School Interventions of Class IX students”._

The objectives were: (1) To find out the effect of school interventions on academic achievement in different categories of schools; (2) to assess interrelationship between academic achievement and interpretations provided in different categories of schools. Descriptive survey method as well as qualitative and quantitative approaches were adopted for the study. The sample was taken as 55 Headmasters and 550 students of Class IX from different categories of schools in the district of Phenkani, Orissa, using probability sampling method for the study. The tools were used such as achievement test of annual examination. Findings were: (1) All categories of school differed significantly
from one another as regards the academic achievement of the learners. (2) There is no significant difference in school intervention score between government and non-government schools. (3) There is no significant relationship between academic achievement and school intervention in government and non-government schools. (4) There is marked relationship between academic achievement and school intervention in the schools managed by ST and SC Development Department.

B. Foreign Studies

*Cocroft, Florence O. (2015) conducted a study on “The Impact of Teacher Absenteeism and Teacher Characteristics on Third through Eighth Grade Achievement in Language Arts and Mathematics”.*

This study examined the relationship between teacher absenteeism and teacher characteristics on third through eighth grade achievement as measured by the Mississippi Curriculum Test 2 (MCT2) language arts and mathematics assessment. School year 2012 - 2013 yearly assessment scores for 3rd, 4th, 5th, 6th, 7th, and 8th grade students in 1 school district in the State of Mississippi were analyzed to determine if teachers' rate of absenteeism, age, gender, years of teaching experience, degree and certification influenced student academic achievement.

This study was guided by 5 research questions and employed 2 research designs. Correlational research was used to answer research question 1, 4 and 5. Question 1 sought to determine the differences in the magnitude of the relationships between teacher absences and student achievement across schools and grade levels. Questions 4 and 5 sought to determine how accurately teachers' rate of absenteeism, age, gender, years of teaching experience, degree and certification predicted 3rd through 8th grade student achievement in language arts and mathematics.

Questions 2 and 3 were answered using a causal-comparative research design to determine the differences in MCT2 scores of students in Grades 3-8 whose teachers missed 5 or fewer days and students whose teacher missed more than 5 days of school. The findings indicated that there was a small relationship between teacher absences and achievement across grade levels and schools. In addition findings indicated that teacher absences did not impact student achievement in language arts; however; findings revealed that teacher absences had a negative impact in student achievement in mathematics. Finally, age, degree and certification were predictors of student achievement in language and mathematics.
Ochwo, Pius (2013) conducted a study on “Pupil, Teacher, and School Factors that Influence Student Achievement on the Primary Leaving Examination in Uganda: Measure Development and Multilevel Modeling”.

Specific to the first objective, it was found that a psychometrically sound measure of teacher quality can be developed. The results rendered a 38-question measure focusing on four domains: (1) Teacher Planning and Preparation, (2) Classroom Environment, (3) Teacher Instruction, and (4) Teacher Professionalism.

The second objective found that there are no significant differences between boys and girls on English achievement controlling for prior ability in English. However, there were significant differences between the sexes on mathematics achievement, with boys having higher scores. Additionally, the results showed that there is a significant relationship between student SES (i.e., boarding and day schools) and student achievement, with higher SES students (i.e., boarding schools) having higher achievement. It was also found that teacher TQM scores were a significant predictor of student PLE mathematics and English test scores, with higher teacher quality rendering higher student mathematics and English scores. There was also a significant difference between school types (i.e., urban and rural) on student achievement in mathematics, with rural schools (i.e., lower SES schools) having higher means compared to urban schools.

Future research should continue to define the network of relationships between pupil-, teacher-, and school-level factors and pupil achievement, and maintain the measure revision and validation process of the TQM. Assessment is becoming commonplace in the classroom in Uganda, and the need to examine the influence of the teacher on pupil achievement is in high demand. Results from this study can provide insight into the disparities involving sex, student SES, and school SES that influence pupil achievement in Uganda. The findings also support administrative demands for more efficient ways to monitor teacher quality, and in turn, meet educational standards and increase student achievement.

Emenheiser, David E. (2013) conducted a study on “Relations between Academic Achievement and Self-Concept among Adolescent Students with Disabilities over Time”.

This study design included four features: 1) methods appropriate for complex data sets; 2) use of latent constructs; and investigation of differences 3) between genders and 4) among the categories of disability.
Three questions were investigated: What are the relations between self-concept and academic achievement over time among adolescent students with disabilities? What are the differences in these relations among male and female adolescents with disabilities? What are the differences in these relations among adolescent students with emotional disturbance (ED), intellectual disabilities (ID), and learning disabilities (LD)?

In a secondary analysis of the Special Education Elementary Longitudinal Study (SEELS) database, cross-lagged longitudinal panel path analyses were used to explore the relations among the overall sample of 14-year-olds as well as of males-only, females-only, ED-only, ID-only, and LD-only subgroups. Additional procedures were used to account for issues due to missing data, non-normality of distributions, and clustered, stratified, and disproportionate sampling.

Results suggested that the relations between academic achievement and self-concept were complex. In the overall sample, no significant relations were found. When split by gender, the data indicated nearly equal but opposite path coefficients from self-concept at Time 1 to academic achievement at Time 2. The paths from academic achievement at Time 1 to self-concept at Time 2 obtained statistical significance among the ED-only (positive) and LD-only (negative) groups. The subgroup differences in the relations between academic achievement and self-concept suggested that more subgroup analyses need to occur.

*Mitchell, Viola T. (2013) did a study on “Departmentalized or Self-contained: The Relationship between Classroom Configuration and Student Achievement.”*

The purpose of this quantitative study was to determine if classroom configuration--departmentalized and self-contained--is related to the academic achievement of Grade 6 students in a large urban school district as measured by California Standards Test (CST) scores in mathematics and English Language Arts (ELA) when controlling for prior academic achievement, language, and gender. To this end, existing CST scale scores for the years 2010-2012 were analyzed using hierarchical multiple regressions which allowed the researcher to determine the unique contribution classroom configuration contributed to student achievement. A 22-item researcher-designed questionnaire was also distributed to Grade 6 teachers (n=36) in the participating school district to capture teacher perceptions regarding what type of classroom configuration is best for Grade 6 students.
Three conclusions based on the findings were drawn. First, classroom configuration had no meaningful impact on student achievement in English Language Arts as measured by the CST. Second, classroom configuration had no meaningful impact on student achievement in math as measured by the CST. Third, departmentalized teachers did not differ significantly on opinions of the instructional benefits of each configuration when compared to self-contained teachers.

*Mahnaz Kaboodi and Yeo Kee Jiar (2012) investigated the “Cognitive and Trait Creativity in Relation with Academic Achievement”.*

The focused objective of this work is to compare cognitive creativity with trait creativity in relationship with academic achievement. The development relating to creativity concerns the mental creativity as the influential factor in academic achievement while recent findings highlight the priority of personality creativity and emotional creativity in this link. This interpretation is based on the results of researches done in these areas of study. Despite the current attitude, mental dimension of creativity contributes to academic achievement as a more significant factor than its non-mental aspect. Concentration on trait and cognitive creativity affects educational system as the means for presenting and fostering creativity and innovation. Moreover, this trend influences the contemporary insight to creativity and its prerequisites not only in higher education but also in all levels of educational system.

*Alireza JilardiDamavandi (2011) conducted a study on “Academic Achievement of Students with Different Learning Styles”.*

The study investigated the impact of learning styles on the academic achievement of secondary school students in Iran. The Kolb Learning Style Inventory (1999) was administered in eight public schools in Tehran. The mean of test scores in five subjects, namely English, science, mathematics, history and geography, was calculated for each student and used as a measure of academic achievement. A total of 285 Grade 10 students were randomly selected as sample of this study. The results showed that there is a statistically significant difference in the academic achievement of the Iranian students that correspond to the four learning styles; in particular, the mean scores for the converging and assimilating groups are significantly higher than for the diverging and accommodating groups.
Liu, Xiaoyan (2011) made an attempt on “Young Children’s Social Skills Development and Academic Achievement: Longitudinal Analysis of Developmental Trajectories and Environmental Influences”.

Using a national dataset of the Early Childhood Longitudinal Study - Kindergarten class of 1998-1999 (ECLS-K), this study examined several issues relating to two particular social skills: work related skills (WRS) and interpersonal skills (INS). The central research questions included the overall developmental trajectories of two particular social skills from kindergarten through 5th grade, how the social skills trajectories differ among different racial groups and SES groups, how the environmental factors influence social skills' development, and the effects of social skills are on achievement growth and narrowing achievement gaps over six years and the specific effects in four time periods.

A series of three-level piecewise HLM linear growth models were created. The result provided a snapshot of how two particular social skills develop intra-individually and inter-individually across different racial and SES groups based on Bronfenbrenner's ecological framework. Although most students exhibited WRS and INS in class often at the beginning of kindergarten, on average, about half of them scored lower than the average score. The variability signified that most students were being rated as having good WRS and INS, but some other students still had lower scores and needed direction and assistance to acquire the skills through assessment or training. The growth of WRS and INS were relatively flat over time. After controlling SES, minorities had lower average WRS and INS scores at the beginning of kindergarten. No significant racial gap of social skills growth rate during the kindergarten period was found, but Asian-Pacific Islanders had significantly higher growth rate after kindergarten through 5th grade. There were significant gaps by SES in initial WRS, initial INS, and WRS growth rate during kindergarten. Children's WRS and INS scores were varied with respect to the unique contributions of parental involvement at home, parental involvement at school, parent(s)-child interaction, and class behavior.

Through use of three-level and two-level HLM techniques, the model comparison indicated that the overall WRS and INS effects on achievement growth were small on average. Although WRS and INS did not consistently further reduce the racial and SES achievement gaps, they played important roles in promoting achievement growth in different time periods. Compared to INS, WRS has a consistently positive effect on later
achievement growth. Child and family characteristics better accounted for the difference in WRS and INS initial scores than schools.

*Tripp, Daniel Joseph (2011) conducted a study on “Effect of Positive Behavior Interventions and Support on Student Behaviors and Academic Achievement in High-Poverty Schools”.*

The purpose of this study was to add to the body of literature on PBIS, poverty, and academic achievement. This study was relevant because high-poverty schools across the world struggle to increase student academic achievement. This study analyzed high-poverty PBIS schools and determined whether a positive relationship existed between the percentage of students with fewer than two office referrals (Primary level) and the percentage of students in the Proficiency level or above on the Missouri Assessment Program (MAP) Communication Arts Exam.

This study analyzed student academic achievement data and ODR data in a suburban school district in St. Louis County, Missouri. All 17 elementary schools in the study were above the state average for students in the free/reduced lunch program, and all schools had implemented a PBIS system. The study determined that a positive relationship existed between the percentage of students with fewer than two office referrals and the percentage of students in the Proficient Level or above on the MAP Communication Arts Exam.

In addition to the quantitative analysis, the researcher conducted site visits at two of the high achieving schools in the district. Educators in the school were interviewed and shared their experience with implementing a PBIS system and their successful PBIS strategies for how a school may successfully implement a PBIS system. Furthermore, an unintended variable, school leadership, surfaced as one of the key ingredients to a successful PBIS program.

*Matuga, J. M. (2009) conducted a study on “Self-Regulation, Goal Orientation, and Academic Achievement of Secondary Students in Online University Courses”.*

This study investigated the self-regulation, goal orientation, and academic achievement of 40 secondary students who completed online university courses in the sciences. Students were enrolled in one of three online university science courses. Each course was taught by a two-person team, made up of one university science professor and one secondary classroom science teacher, over a 6-week period. This study explored changes in self-regulation and goal orientation of students enrolled in the online course
and the relationship between these factors and student achievement. Student data collected to investigate study questions included an abbreviated version (30-items) of the Motivation Strategies for Learning Questionnaire (MSLQ), collected before and after students completed the online course, and achievement measures (i.e., final grades). Data from application essays and focus interviews, conducted with all participating group members (secondary students, university science professors and the secondary high school teachers), are used to illustrate key findings and probe remaining questions.

Montrosse, Bianca Elizabeth (2009) conducted a study on “Estimating the Effects of Teacher Certification on the Academic Achievement of Exceptional High School Students in North Carolina”.

This study investigated the relationship between teacher certification and language arts, mathematics, and science achievement for students with special needs. The study also examined whether effects differed for racial minorities or economically disadvantaged students and the extent to which teacher characteristics mediated the effects of teacher certification upon student achievement.

The sample consisted of all special education high school students who took an English I, Algebra I, or Biology End-of-Course exam in the state of North Carolina during the 2004-05 academic year (n = 14,161). To estimate the relationship between teacher certification and academic achievement for students with special needs across content areas, hierarchical linear modeling of matched student-teacher data provided by the North Carolina Department of Public Instruction to the Carolina Institute for Public Policy was employed.

Analysis revealed that variation in teacher certification effects exist across content areas. In English I, special education high school students taught by a teacher with special education certification or dual certification (i.e., special education certified and in-field certified) outperformed comparable students taught by teachers without special education certification or dual certification. In Algebra I and Biology, special education high school students taught by a teacher certified in-field outperformed their peers taught by a teacher not certified in-field.

Moderation and mediation results also varied across the content areas. In-field certification effects were moderated by economic disadvantage, but only in Biology. No other moderation effects were detected for economically disadvantaged students or for racial minorities. More years of experience partially mediated the relationship between
special education certification and English I achievement, between dual certification and English I achievement, and between in-field certification and Algebra I achievement. Advanced degree partially mediated the relationship between in-field certification and Algebra I achievement and between in-field certification and Biology achievement. None of the other variables mediated the relationship between teacher certification and special education student achievement.

_Scrivner, Cheryl M. (2009) made an attempt on “The Relationship between Student Achievement and Teacher Attitude: A Correlational Study”._

The purpose of this study was to determine the relationship between teacher attitudes and student achievement. Specifically, this study was designed to answer the following questions (a) What is the relationship between a teacher's disposition toward students and student achievement?; (b) What is the relationship between a teacher's disposition toward curriculum and student achievement?; (c) What is the relationship between a teacher's disposition toward professionalism and student achievement?; and (d) What predictions related to student achievement may be made based on teacher dispositions as measured by the Teacher Disposition Index (TDI) after controlling for teacher demographic variables such as gender, grade level, years of experience and degree?

The TDI survey utilizing a Likert-scale was given to 136 classroom teachers in grades three through six teaching reading and/or math. Teachers were asked to report two years of reading and/or math achievement test scores. Six public school districts in southwest Ohio were represented by the 136 participating teachers.

The study findings indicated no relationship between a teacher's disposition toward students, curriculum, or professionalism on math achievement scores. None of the predictor variables was a significant predictor of either math score. A significant positive relationship was found for a teacher's disposition for curriculum and professionalism and reading achievement. Teaching experience was a significant predictor of the 2006 reading achievement scores but not the 2007 reading achievement scores. Also, the 2006 reading achievement scores were negatively predicted by TDI student-centered score.
Graber, Cherita Ruth (2009) conducted a study on “Factors that are Predictive of Student Achievement Outcomes and an Analysis of these Factors in High-Poverty Schools versus Low-Poverty Schools”.

The objective of the study was to establish if a relationship existed between the independent variables and the dependent variable. In addition, a determination of how predictive these independent variables were of the dependent variable was an important aspect of the study. The sample included the entire population of mainstream 9-12 public high schools in a Midwest state.

The statistical methods employed were descriptive statistics, Pearson r, p-value, coefficient of determination, and multiple regression. The analysis of the various statistical methods revealed a moderate correlation between student achievement and the independent variables of student attendance and highly qualified teachers for high-poverty schools. A significant level of correlation also existed between the below average attendance category and student achievement in both groups of high-poverty and low-poverty school settings. Additionally, attendance and teacher quality were predictive of both communication arts and math student achievement in the high poverty school setting, with attendance the most predictive. There was no significant relationship between class size and student achievement nor was it predictive of student achievement for either group of schools.

Liew, Hui Peng (2009) conducted a study on “Ethnicity and Academic Achievement by Malaysian Eighth Grade Students”.

Malaysia’s preferential policies have reduced the educational attainment gap between ethnic groups. However, we know less about their effects on ethnic differences in academic achievement. With this point in mind, the overall goal of this study is to examine inter-ethnic differences in mathematics and science achievement based on the cohort of eighth grade (Form 2) Malaysian students who participated in the Third International Mathematics and Sciences Study Repeat Project (TIMMS-R). It sought to determine the extent to which theoretical propositions of the structural and cultural perspectives developed to explain achievement differences in the United States are applicable in Malaysia. Malaysia is an interesting setting for the purpose of the present study for three reasons. First, the interethnic differences in educational outcomes were historically linked to occupational structure and class-and ethnicity-based residential segregation during the British colonial rule. Second, Malaysia is one of the few countries
(i.e. Fiji, Nigeria, Sri Lanka, Uganda, India, and New Zealand) that have strong public policies to rectify the historical ethnic inequalities in access to education. However, the difference between Malaysia and these countries seems to be in the relative status of the formerly disadvantaged ethnic group in question. Finally, as a new member of the New Industrialized Countries (NICs), Malaysia is in the process of making the transition from an agricultural economy to an industrialized nation. As such, the importance of mathematics and science education increases along with socio-economic and technological advance and the discrepancies in mathematics and science achievement can have important implications on socio-economic disparity among ethnic groups. The primary contribution of this dissertation is that it holistically examines how individual, family and school characteristics affect mathematics and science achievement of the eighth graders in Malaysia. The multilevel modeling analyses showed that Non-Malay students performed significantly better in mathematics achievement than Malay students, even after controlling for family and school characteristics as well as students’ perceived importance of mathematics and educational expectations.


This dissertation examines the associations between individual characteristics and characteristics of children's home and school environments, and the Mathematics learning trajectories for Hispanic and White children from Kindergarten to the fifth grade.

The ECLS-K is an ideal dataset to study these issues. Its nationally representative sample, multiple information sources, and longitudinal design make it possible to model children's learning trajectories, identify factors across diverse domains that help account for differences in learning, and assess their relative importance. Hence, study data can help identify promising policy levers to reduce or eliminate Hispanic-White achievement differences.

The study makes several important contributions. It helps address the important gap in the literature on Hispanic-White achievement differences. It examines the most appropriate longitudinal measures of achievement and applies the most appropriate statistical techniques to their analysis. The study also examines the effects of within-
child changes in factors associated with Mathematics achievement, and investigates possible heterogeneity in such effects.

Key findings include wide disparities in Mathematics achievement between Hispanic and White students, both within and between schools, and especially at Kindergarten entry. These differences are strongly related to Hispanic-White background differences that predict lower achievement for any child. An important risk factor for Hispanic children is coming from a non-English-speaking household. Children's trajectories of Mathematics learning after school entry are fairly similar and decreasing over time. Evidence of heterogeneity in achievement effects was limited.

2.5. CRITICAL REVIEW

In the present study, the investigator reviewed totally 86 studies, of which 44 studies are Indian studies and 42 studies are conducted abroad. In the reviewed studies related to multiple intelligences, 16 studies are Indian studies and 24 studies are conducted abroad. Nine Indian studies and four foreign studies are related to study involvement. Nineteen Indian studies and 14 foreign studies are related to academic achievement. After a careful analysis, the investigator found no studies were related to the problem of the study.