CHAPTER II
REVIEW OF RELATED LITERATURE

2.1. INTRODUCTION

The review of related literature is an essential aspect of investigation. This helps the researcher to gather up to date information about what has been done in the particular area on which he intends to study.

Review of related studies further avoids duplication of effort that has already been done and if helps the investigator to go further deep into the problem in hand. If also helps to study the different facts of the problem. It provides the opportunity of giving an insight into the methods measures and various other parameters adopted by other, which would lead to the improvement of the research design significantly. It is a valuable guide in defining the problem recognizing its significance suggesting the promising data gathering devices appropriate study design and source of data.

In the words of John W. Best (1977) a brief summary of previous research and the writings of recognized exports provide evidence that the researcher is familiar with what is still unknown and untested. Since effective research must be based upon past knowledge this step helps to eliminate the duplication of what has been done and provides useful hypothesis and helpful suggestions for significant investigations

2.2. STUDIES RELATED TO ACHIEVEMENT IN MATHEMATICS

Hyde, Janet S.; Fennema, Elizabeth; Lamon, Susan J. (1990) had investigated “The gender differences in mathematics performance”, and found that there were no gender differences in problem solving in elementary or middle school; differences favoring men emerged in high school and college. Gender differences were smallest
and actually favored females in samples of the general population, grew larger with increasingly selective samples, and were largest for highly selected samples and samples of highly precocious persons. The magnitude of the gender difference has declined over the years. Gender differences in mathematics performance are small. Nonetheless, the lower performance of women in problem solving that is evident in high school requires attention.

Benbow, Camilla P. (1992) had conducted “A study on Academic achievement in mathematics and science of students between ages 13 and 23”. There are differences among students in the top one percent of mathematical ability. Among students in the top 1% of ability, those with SAT-M scores in the top quarter, in comparison with those in the bottom quarter, achieved at much higher levels through high school, college, and graduate school. Of the 37 variables studied, 34 showed significant differences favoring the high SAT-M group which were substantial. Some gender differences emerged; these tended to be smaller than the ability group differences; they were not observed in the relationship between mathematical ability and academic achievement. The predictive validity of the SAT-M for high-ability 7th and 8th graders was supported.

Aswal, (2001) had investigated “A study on Intelligence as a correlate of achievement in mathematics across different levels of socio economic status”. The study intended to examine the relationship of intelligence with achievement in mathematics in context with different level of socio-economic status. Two hundred students of class XI selected randomly from five colleges of Tehri district served as a sample for the study and also found that there was a significant correlation between intelligence and
achievement in mathematics. Relation between intelligence and achievement in mathematics may vary across different levels of socio-economic levels as three colleges reflected significant difference among different levels of SES out of live colleges in intelligence and achievement in mathematics 15 references are cites.

**Bodner M, Muftuler LT (2001)** had conducted “The effect of music on spatial insight and mathematical performances. Behavioral studies, motivated by columnar cortical model prediction”, have given evidence for music causally enhancing spatial-temporal reasoning. A wide range of behavioral experiments showed that listening to a Mozart Sonata (K. 488) gave subsequent enhancements. An EEG coherence study gave evidence for a carry over from that Mozart Sonata listening condition to the subsequent spatial-temporal task in specific cortical regions. The article presents MRI studies comparing cortical blood flow activation by the Mozart Sonata vs. other music. In addition to expected temporal cortex activation, it reports dramatic statistically significant differences in activation by the Mozart Sonata (in comparison to Beethoven’s Fur Elise and 1930s piano music) in dorsolateral pre-frontal cortex, occipital cortex and cerebellum, all expected to be important for spatial-temporal reasoning.

**Manju Krishna (2004)** had 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 at secondary school level with reference to instructional objectives. The researcher adopted experimental method for the present study and selected the pre-test and post-test non equivalent
group design for the study. The tools used were lesson transcript multiple intelligence theory is more effective than present methods of teaching on achievement on mathematics and strategies involving multiple intelligence theory were effective than the present method under instructional objectives.

Olivas, Desiree Marie (2005) had conducted “a study on Building linguistic and mathematics competence in Hispanic English language learners”. From a socio-cultural framework, this study was conducted to examine how Spanish speaking Hispanic students were negotiating for mathematical meaning in a communicatively demanding mathematics environment. The findings resulted in patterns of discourse across mathematical performance levels and English language proficiency levels. For example, more advanced English language students who were also proficient in mathematics better justified their mathematical strategies and reasonings in their discourse. However, students who were less fluent English language learners and advancing towards mathematical proficiency were also less proficient in expressing their mathematical strategies and reasonings in their classroom discourse. This study created a mosaic of students in transitions of their second language development and mathematical discourse development. Findings imply that mathematics educators can better support English language learners through providing students greater opportunities to interact in mathematical discourse.

Charles, T., Clotfelter, Helen, F., Ladd, Jacob, L., Vigdor, (2007), had studied “the Teacher credentials and student achievement”. Longitudinal analysis with student fixed effects and had concluded that a teacher's experience, test scores and regular licensure all have positive effects on student achievement, with larger effects for math
than for reading. Taken together the various teacher credentials exhibit quite large
effects on math achievement, whether compared to the effects of changes in class size
or to the socio-economic characteristics of students.

**Subrata Saha (2007)** had conducted “a study on academic achievement in
mathematics in relation to cognitive styles and attitude towards mathematics”. The
boys and girls differed significantly on all the three measures under consideration. The
field independent boys excelled over the field dependent boys significantly in their
achievement in mathematics. Similarly, field independent girls also excelled over the
field dependent girls significantly.

**Xavier and Annaraja (2007)** had conducted “a study on effectiveness of multiple
intelligence based teaching mathematics on achievement of VI standards students”.
The purpose of the study was to find out the performance of control and experimental
groups in their gain scores and to find out the difference between control and
experimental groups in their multiple intelligence. The findings revealed that 10% of
the control group students had high level of gain scores and 26.67% of the
experimental group students had high level of gain scores. It is also found that there is
no significant difference between control and experimental group students in their
multiple intelligence.

**Noorjehan Ganihar, Wajiha (2008)** had conducted “a study on factors affecting
academic achievement of IX standard students in mathematics”. The objective of the
study was to find out the relationship between achievement in mathematics and
mathematics creativity, test anxiety, attitude towards mathematics and achievement
motivation of IX standard students. The sample was comprised of 800 boys and girls,
selected from 20 secondary schools giving due representation to sex, type of management and medium of instruction. Achievement test in mathematics constructed by the researchers and mathematics creativity test (Singh 1988) were used as tools for the study. The result of the study reveals that there is significant effect of gender on academic achievement and the study of schools in which the study has significant effect on achievement in mathematics.

**Saileela k.,(2012),** had conducted “a self-regulation, self efficacy and attitude towards mathematics of higher secondary students in relation to achievement”. The purpose of the study was to compare self-regulation scale, self efficacy scale and attitude towards mathematics scale in relation to achievement test in mathematics. investigator administered to a random sample of 1000 first year higher secondary students. the result of the study reveals that there is achievement in mathematics of boys is significantly greater than girls and there is exists positive and significant correlation between achievement and self efficacy.

### 2.3. STUDIES RELATED TO MATHEMATICAL PHOBIA

**Jiangming (2003)** had conducted “a study on the causal ordering of mathematics anxiety and mathematics achievement”. Using data from the longitudinal study of American youth (LSAY), we aimed to determine the causal ordering between mathematics anxiety and mathematics achievement. Results of structural equation modeling showed that, across the entire junior and senior high school, prior low mathematic achievement significantly related to later high mathematics anxiety, but prior high mathematics anxiety hardly related to later low mathematics achievement. There were statistically significant gender differences in the causal ordering between mathematics anxiety and mathematics achievement. Prior low mathematics
achievement significantly related to later high mathematics anxiety for boys across the entire junior and senior high school but for girls at critical transition points only. Mathematics anxiety was more reliably stable from year to year among girls than among boys.

Shahapur Nagappa Panchalingappa (2004) had conducted “a study on self-confidence, anxiety, study habits and mathematics achievement of underachievers at secondary school level”. The main objective of the study was to study self-confidence, general anxiety, test anxiety, and study habits in relation to underachievers in mathematics at secondary school level. Survey method was adopted in the study. The findings were, there is significant difference between normal achievers and underachievers in respect of their self-confidence; there is significant difference between normal achievers and underachievers in respect of their general anxiety; there is significant difference between normal achievers and underachievers in respect of their test anxiety mathematics; there is significant difference between normal achievers and underachievers in respect of their study habits; there is significant difference between normal achievers and underachievers in respect of their mathematics achievement.

Clark-Bland and Iris (2004) had conducted “a study on the effects of teaching mathematics strategies and keeping mathematics journals to reduce mathematics anxiety”. This mixed method study examined how different strategies of learning mathematics and keeping a mathematics journal in a remedial mathematics class in a community college affected mathematics anxiety and mathematics learning. Students were administrated validated algebra pre and post tests and mathematics anxiety pre and post tests. The findings led to the following recommendations; (a) To break the
cycle of mathematics anxiety, elementary schools teachers who are mathematically anxious should take measures to lessen their own anxiety; (b) Educators should teach several strategies for learning mathematics; (c) Additional studies of journaling in mathematics to alleviate mathematics anxiety should be conducted; (d) Educators should solicit a mathematics autobiography form studies.

Beth Mcculloch Vinson (2004) had conducted “a study on a comparison of preservice teachers mathematics anxiety before and after a methods class emphasizing manipulative”. The change in level of mathematics anxiety among future teachers in two different mathematics materials and methods classes were investigated. The changes were a function of using: (a) Buuner’s framework of developing conceptual knowledge before procedural knowledge, and manipulatives to make mathematics concepts more concrete. The sample included 87 preservice teachers enrolled in mathematics methods courses. Results of the study have implications for teacher education programs concerning the measurement of mathematics anxiety level among future teacher and the determination of specific contexts in which that anxiety can be interpreted and reduced.

Swarms, Susan Lee; Daane and Giesen, Judy (2006) had conducted “a study on mathematics anxiety and mathematics teacher efficacy”. The study investigated the relationship between mathematics anxiety and mathematics teacher efficacy among elementary preserves teachers. Findings revealed a significant, moderate negative relationship between mathematics anxiety and mathematics teacher efficacy ($r = -.440$, $p < .05$). In general, the preserves teachers with the lowest degrees of mathematics anxiety had the highest levels of mathematics teacher efficacy. The interviews indicated that efficaciousness toward mathematics teaching practices, descriptions of
mathematics, and basis for mathematics teaching efficacy beliefs were associated with mathematics anxiety.

**Effandi Zakaria and Norazah Mohd Nordin (2007)** had conducted “a study on the effects of mathematics anxiety on matriculation students as related to motivation and achievement”. The study investigated the effects of mathematics anxiety on matriculation students as related to motivation and achievement. Subjects included 88 students who were at the end of their second semester of study. The ANOVA results showed that the mean achievement scores and motivation scores of low, moderate and high anxiety groups were significantly different. Findings also revealed a low ($r=-0.32$) but significant ($p < 0.05$) negative correlation between mathematics anxiety and achievement and also a strong ($r=-0.72$) significant ($p<0.05$) negative correlation between mathematics anxiety and motivation. The study also revealed a significant low positive correlation ($r=0.31$) between motivation and achievement.

**Lawrence Praveen kumar (2007)** had conducted “a study on relationship between anxiety and academic achievement of B.Sc math students”. The objectives of this study were to find out the level of anxiety of B.Sc mathematics students; to find out the level of academic achievement of B.Sc mathematics students; to find out the relationship between anxiety and academic achievement of B.Sc mathematics. The findings of the study were the level of anxiety of B.Sc mathematics II years students is average; the level of anxiety of B.Sc mathematics III years students is average; there are significant association between B.Sc mathematics students of women’s college and co-education college in their academic achievement; there are significant relationship between anxiety and academic achievement of B.Sc mathematics
students with regard to sex; there are significant relationship between anxiety and academic achievement of B.Sc mathematics students with regard to locality of college.

Roty and Michael (2008) had conducted “a study on the relationship between mathematics anxiety and emotional intelligence”. This study examined the relationship between mathematics anxiety and emotional intelligence. The results suggest that students would benefit from having access to emotional intelligence coaching. Experiments of the effect of emotional intelligence coaching on mathematics anxiety should be conducted furthermore; studies are needed to examine the relationship between mathematics anxiety and emotional intelligence in populations not represented in this study.

Karimi Ayatollah and Venkatesan (2008) had conducted “a study on Psychometric properties and norms differences in mathematics anxiety scale for high school students in India”. The aim of the present study is to develop some groups norms for mathematics anxiety in high school students of India. The final effective sample size was 1200 students and mathematics anxiety scale (karimi and venkatesan, 2008) conducted to sample group. Phase 1, Planning: Include conducting a literature review about Mathematics anxiety. Identify the exits mathematics anxiety scales and study about the designed scale for Normalization. Phase 2, Normalization: contains assessing the norm of mathematics anxiety scale for total students in two genders and separated norms regarding to differences between boys and girls. The results of the study are presented by suitable norms of the scale used in the schools and psychological activities.
Rajni (2009) had conducted “a study on mathematics anxiety and cross gender identity in young adult males and females”. The present study had investigated the relationship between cross gender identity and Mathematics anxiety. Masculine Gender Identity Scale (Freund and Blanchard, 1988) and Feminine Gender Identity Scale (Blanchard and Freund, 1983) were administered to 236 males and 189 females respectively. On the basis of scores obtained on these tests, high and low Cross Gender Identified males and females were selected. To these selected subjects Mathematics Anxiety Rating Scale (short version) by Suinn (2003) was administered. High masculine females exhibited low mathematics anxiety as compared to low masculine females. There was no significant difference between high and low feminine males on mathematics anxiety. The findings are explained in terms of advantages of Cross Gender Identification for mathematics performance and gender differences.

Kovarik and Tomas (2009) had conducted “a study on comparing the effects of traditional and reformed instructional methods on math anxiety and learning at a community college”. The conclusions of this research are expected to help the mathematics department at Raritan Valley Community College to evaluate the effectiveness of reformation pedagogy and to decide whether to adopt the reformed method for all sections of precalculus and seek similar reformation paths for other courses.

Songita Boruah, Jnyandeep Saikia,(2010) had investigated “The mathematics Phobia among the Degree Students of Jorhat and Golaghat District of Assam”. This paper discusses about the Mathematics anxiety of degree students of Jorhat and
Golaghat district of Assam. The study tries to know the cause of Mathematics Phobia. The study was conducted through survey by distributing questionnaires among the degree students of 4 selected colleges of Jorhat and Golaghat district. Finding revealed that Out of 1397 students only 15.25% take Mathematics as major subject, 42.01% take Mathematics as core subject, and 42.73% do not take Mathematics. 13.46% believe that lack of sufficient no. Of teachers is a cause of Mathematics phobia. 24.23% believe that Mathematics phobia already existing among students. 30.35% mention that lack of sufficient no of Mathematics books in the college library. 24% mention that lack of practical classroom facilities is one of the causes of Mathematics phobia.

Parvathamma and sharanamma (2010) had conducted “a study on anxiety level and level of self-confidence and their relation with academic achievement”. The objective of the study were to find out the relation between anxiety level and level of academic achievement of IX standard students; to find out relation between level of self-confidence and level of academic achievement of IX standard students; to find out the difference between anxiety level of boys and girls students of IX standard; to find out the difference between level of self-confidence of boys and girls students of IX standard. The investigator has adopted the tools and personal information data sheet were administered on the selected sample. The findings of the study were there is significant co-relation between anxiety and academic achievement; there is a significant co-relation between self-confidence and academic achievement; there is a significant difference between anxiety level of boys and girls; there is a significant difference between self-confidence levels of boys and girls.
Gbolagade, A.M., Waheed A.A., Sangoniyi S.O. (2013) had investigated “a study the quest by Nigerians to join the league of 20 industrialized nations by the year 2020 may be a mirage if phobia for mathematics learning in secondary schools is not taking into cognizance”. The result revealed that there was significant influence on students’ phobia for Mathematics and factors like incompetence on the part of Mathematics teachers, absence of ICT facilities and Mathematics laboratory among others. It is therefore recommended that trained Mathematics teachers should teach Mathematics in schools; keep abreast of modern methods of teaching Mathematics thereby making every lesson significant to students. By this, Mathematical ideas and skills required for further study in transforming Nigeria will be developed in solving everyday problems for their personal and societal satisfaction.

Chinyere F. Okafor, Uche S. Anaduaka, (2013) had investigated “The Nigerian School Children and Mathematics Phobia: How the Mathematics Teacher Can Help”. This paper considered the importance of mathematics and why it is of utmost necessity that all Nigerian children acquire mathematical knowledge. It noted with dismay the general negative students’ attitude towards the subject and their consequent poor performance in it especially in the West African Senior School Certificate Examination (WASSCE). It then looked at the attributes of a mathematics teacher that can bring about a change in the teaching and learning of mathematics and in the attitude of students towards the subject. It finally considered best practices for mathematics instruction, such practices that can stimulate and sustain students’ interest in mathematics learning.
Hlanganipai Ngirande, (2014) had investigated “The Exploring Mathematics Anxiety: Mathematics Students’ Experiences”. The purpose of this research was to explore students’ mathematics anxiety levels at a selected tertiary institution in South Africa. The results also show high levels of mathematics anxiety among female students. The t-test showed that the mean difference between mathematics anxiety and gender is significant. Based on the findings of this study, it is worth noting that mathematics anxiety is one psychological factor that affects students’ achievement and their general practices.

2.4. STUDIES RELATED TO SELF–EFFICACY

Zimmerman, Barry J.; Martinez-Pons, Manuel, (1990) had investigated “a study on Student differences in self-regulated learning”. Relating grade, sex, and giftedness to self-efficacy and strategy use. Forty-five boys and 45 girls of the 5th, 8th, and 11th grades from a school for the academically gifted and an identical number from regular schools were asked to describe their use of 14 self-regulated learning strategies and to estimate their verbal and mathematical efficacy. The groups of students from both schools included Whites, Blacks, Hispanics, and Asians. Students came from middle-class homes. Gifted students displayed significantly higher verbal efficacy, mathematical efficacy, and strategy use than regular students. In general, 11th-grade students surpassed 8th graders, who in turn surpassed 5th graders on the three measures of self-regulated learning. Students’ perceptions of both verbal and mathematical efficacy were related to their use of self-regulated strategies.

Multon, Karen D.; Brown, Steven D.; Lent, Robert W., (1991), had investigated “Relation of self-efficacy beliefs to academic outcomes”. A meta-analytic
investigation. Reports on meta-analyses of the relations of self-efficacy beliefs to academic performance and persistence. Results revealed positive and statistically significant relationships between self-efficacy beliefs and academic performance and persistence outcomes across a wide variety of subjects, experimental designs, and assessment methods. The relationships were found to be heterogeneous across studies, and the variance in reported effect sizes was partially explained by certain study characteristics.

**Therese Bouffard-Bouchard, Sophie Parent, Serge Larivee,**(1991) had investigated “Influence of Self-Efficacy on Self-Regulation and Performance among Junior and Senior High-School Age Students”. The aim of the present study was to examine the influence of self-efficacy on actual self-regulation during a verbal concept formation task of students, already known to be of average or above average cognitive ability, at two grade levels. Following the assessment of self-efficacy, students were observed while they attempted to solve four problems of varying difficulty. The major findings were that irrespective of differences in school grade and in cognitive ability, self-efficacy exerted significant influence on various aspects of self-regulation, such as monitoring of working time, task persistence, and rejection of correct hypotheses, as well as on performance. These results provided support for the construct validity of self-efficacy as different from cognitive competence.

**Dale H. Schunk,(1991),** had conducted “a study on Self-Efficacy and Academic Motivation”. Academic motivation is discussed in terms of self-efficacy, an individual's judgments of his or her capabilities to perform given actions. After presenting an overview of self-efficacy theory, I contrast self-efficacy with related
constructs (perceived control, outcome expectations, and perceived value of outcomes, attributions, and self-concept) and discuss some efficacy research relevant to academic motivation. Studies of the effects of person variables (goal setting and information processing) and situation variables (models, attribution feedback, and rewards) on self-efficacy and motivation are reviewed.

Pajares, Frank; Miller, M. David, (1994) had investigated “The Role of self-efficacy and self-concept beliefs in mathematical problem solving”: A path analysis. Results revealed that math self-efficacy was more predictive of problem solving than was math self-concept, perceived usefulness of mathematics, prior experience with mathematics, or gender (N=350). Self-efficacy also mediated the effect of gender and prior experience on self-concept, perceived usefulness, and problem solving. Gender and prior experience influenced self-concept, perceived usefulness, and problem solving largely through the meditational role of self-efficacy. Men had higher performance, self-efficacy, and self-concept and lower anxiety, but these differences were due largely to the influence of self-efficacy, for gender had a direct effect only on self-efficacy and a prior experience variable.

Tor Busch, (1995) had conducted “a study on Gender Differences in Self-Efficacy and Attitudes toward Computers”. At the end of a computer course, the students completed a questionnaire designed to measure self-efficacy, computer anxiety, computer liking, and computer confidence. The results revealed gender differences in perceived self-efficacy regarding completion of complex tasks in both word processing and spreadsheet software. No gender differences were found in computer attitudes or self-efficacy regarding simple computer tasks. Male students had
previously had more computer experience in programming and computer games and reported that they had previously had more encouragement from parents and friends.

Frank Pajares, (1996) had investigated “the Self-Efficacy Beliefs in Academic Settings”. Findings on the relationship between self-efficacy, motivation constructs, and academic performances are then summarized. These findings demonstrate that particularized measures of self-efficacy that correspond to the criteria tasks with which they are compared surpass global measures in the explanation and prediction of related outcomes. The conceptual difference between the definition and use of expectancy beliefs in social cognitive theory and in expectancy value and self-concept theory is then clarified. Last, strategies to guide future research are offered.

Karen McCurtis Witherspoon, Suzette L. Speight and Anita Jones Thomas, (1997), had conducted “a study on Racial Identity Attitudes, School Achievement, and Academic Self-Efficacy”. Among African American High School Students. Literature has postulated that African American students often choose not to succeed in school because achievement is seen as acting White. This study examined the extent to which racial identity, self-esteem, and academic self-concept were related to academic achievement for 86 African American high school students. The majority of students indicated support from both peers and parents for their academic work. Multiple regression analysis indicated that grade point average is best predicted by immersion racial identity attitudes and academic self-concept.
Page-Voth, Victoria; Graham, Steve,(1999) had conducted “a study on the Effects of goal setting and strategy use on the writing performance and self-efficacy of students with writing and learning problems”. This study examined the effects of goal setting on the essays of 7th- and 8th-grade students with writing and learning disabilities. Goals were designed to increase either the number of reasons supporting a paper's premise or the number of counterarguments refuted by the writer, or both. Students were also more likely to refute counterarguments when assigned a goal that focused on this specific element. Strategy use enhanced performance only when students were responding to a goal to refute more counterarguments. Students' writing self-efficacy was not influenced by goal setting or strategy use.

Mimi Bong,(2000) had conducted “a study on the Role of Self-Efficacy and Task-Value in Predicting College Students' Course Performance and Future Enrollment Intentions”. These self-efficacy factors were positively correlated among themselves and, with an exception of problem-specific self-efficacy, also with the task-value factor. A correlation coefficient between any two self-efficacy factors tended to decrease, as these factors were associated with increasingly different measurement levels. Path analysis showed that students' midterm scores and enrollment intentions at T1 were better predicted by the task-value factor. However, the typically stronger links of self-efficacy to performance and of task value to intentions were observed with T2 variables.

Roger D. Goddard,Wayne K. Hoy and Anita Woolfolk Hoy,(2000) had conducted “a study on Collective Teacher Efficacy: Its Meaning, Measure, and Impact on Student Achievement”. It is a theoretical and empirical analysis of the construct of
collective teacher efficacy. First, a model of collective efficacy was elaborated for use in schools. Then, an operational measure of collective teacher efficacy was developed, tested, and found to have strong reliability and reasonable validity. Finally, using the instrument to examine urban elementary schools in one large mid-western district, collective teacher efficacy was positively associated with differences between schools in student-level achievement in both reading and mathematics.

Chemers, Martin M.; Hu, Li-tze; Garcia, Ben F. (2001) had investigated “a study on Academic self-efficacy and first year college student performance and adjustment”. A longitudinal study of 1st-year university student adjustment examined the effects of academic self-efficacy and optimism on students' academic performance, stress, health, and commitment to remain in school. Predictor variables and moderator variables were measured at the end of the first academic quarter and were related to classroom performance, personal adjustment, stress, and health, measured at the end of the school year. Academic self-efficacy and optimism were strongly related to performance and adjustment, both directly on academic performance and indirectly through expectations and coping perceptions on classroom performance, stress, health, and overall satisfaction and commitment to remain in school.

Bong, Mimi, (2001), had conducted “a study on the Between- and within-domain relations of academic motivation among middle and high school students”: Self-efficacy, task value, and achievement goals. The author used confirmatory factor analysis to examine between-domain relations of self-efficacy, task-value, and achievement goal orientations among 424 Korean middle and high school students. All motivational constructs demonstrated strong subject specificity in both age groups.
Strengths of between-domains differed substantially by individual constructs. Performance-approach and performance goals were highly correlated across domains, whereas task-value and mastery goals were more distinct across domains. Self-efficacy perceptions were moderately correlated across subjects. High school students' academic motivation was more differentiated than that of middle school students. Within-domain interrelations among these motivation constructs were generally consistent with previous research.

Monica DeTure,(2004) had conducted “a study on Cognitive Style and Self-Efficacy: Predicting Student Success in Online Distance Education”. This study was designed to identify those learner attributes that may be used to predict student success (in terms of grade point average) in a Web-based distance education setting. Students enrolled in six Web-based, general education distance education courses at a community college were asked to complete the Group Embedded Figures Test for field dependence/independence and the Online Technologies Self-Efficacy Scale to determine their entry-level confidence with necessary computer skills for online learning. Although the students who were more field independent tended to have higher online technologies self-efficacy, they did not receive higher grades than those students who were field dependent and had lower online technologies self-efficacy. Cognitive style scores and online technologies self-efficacy scores were poor predictors of student success in online distance education courses.

Saileela k,(2012), had conducted “a study on self-regulation, self efficacy and attitude towards mathematics of higher secondary students in relation to
The purpose of the study was to compare self-regulation scale, self-efficacy scale and attitude towards mathematics scale in relation to achievement test in mathematics. The investigator administered to a random sample of 1000 first-year higher secondary students. The result of the study reveals that there is self-efficacy of girls significantly greater than boys in mathematics and there is exists positive and significant correlation between achievement and self-efficacy.

2.5. STUDIES RELATED TO FAMILY ACCEPTANCE

Bachman, Jerald G (1970) had conducted “a study the youth in transition project, a national longitudinal study of about 2200 10th grade boys in public schools”. It deals with family background factors and abilities as they relate to a variety of personality characteristics, behaviours and plans for the future. Major units of its documentation include: (1) dimensions of family background, (2) interrelationships among background characteristics, (3) intellectual aptitudes and abilities, (4) self-concept of school ability, (5) motives, (6) Self-Esteem, and other affective states, (7) values and attitudes, (8) behaviours and (9) College plans and Occupational aspirations. The conclusions indicate that the socioeconomic level is perhaps the most important of the family background measures and that the family background factors include Academic Achievement.

Steinberg et al., (1989) had conducted “a study on the impact of Authoritative Parenting, Parental involvement in schooling and parental encouragement”. It deals with succeed in adolescent school achievement, and found that authoritative parenting (high acceptance, supervision and psychological autonomy granting) lead to better adolescent school performance and stronger school encouragement.
**Lamborn (1991)** had conducted “a study on studied the patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent and neglectful families”. revealed that adolescents who characterized their parents as Authoritative scored highest on psychological competence and lowest on behavioural dysfunction. The reverse was true for neglected adolescents. Adolescents from authoritative homes scored high on obedience but low on self perception. Adolescents from indulgent homes evidenced self confidence with a high frequency of behavioural problems.

**Waddin and Gaonkar (1993)** had conducted the study on considered “The educational status of the rural teenage girls and the associated factors”, using 300 subjects. It was found that large proportion of girls belonged to the below education group than boys. Two of the associated factors identified by the investigator were that, the parents were not in favour of education and occupation of girls and parents placed low value on the education of girls compared to boys.

**Allen et al., (1994)** had examined “The connection between adolescents expression of negative affects and their attempt to meet the developmental task of establishing autonomy and relatedness in interactions with their parents”. Results revealed that difficulties establishing autonomy and relatedness in interactions with their parents were linked to both depressed affect and externalizing behaviour.

**Feldman and Wood (1994)** had examined “The nature and correlates of parent’s expectations about adolescent son’s behavioural autonomy in a longitudinal study”. found that father’s time table for privileges at preadolescence predicted son’s mid
adolescent academic and social outcomes four years later, where as mother’s time
table did not.

**Ibrahim Salman (1994)** had studied “The relationship between family socio
economic status and the academic achievement of students in Jordan state
Universities, Oudah.” The major findings of the study was statistically significant
negative relationship were found between student’s academic achievement and their
father’s and mother’s income, occupation and education. The study also found out that
the influence of parents, on student’s educational aspiration was strong and was
attributed to their family’s desire that they earn a better living than their parents.

**Kayyer, D. Mohammed (1994)** had made an attempt on “academic achievement and its
relation to family background and locus of control”. A sample of 502 students (235
boys and 267 girls) of six public schools of New South Wales, were selected for the
study. The result showed that the girl’s academic achievement was significantly higher
than the boy’s academic achievement.

**Lawrence A. Kurdek, Mark A. Fine (1994)** had conducted a study on “Family
acceptance and family control as predictors of adjustment in young adolescents”
assessed the relation between adjustment and perceptions of both family acceptance
and family control in two samples of young adolescents. In both samples, family
acceptance and family control were positively related to adjustment. The positive
relationship between family acceptance and psycho social competence was strong at
progressively higher levels of family control, where as low-but not moderate or high
levels of control were related to many self-regulation problems.
Pho Lan Tuyet (1994) had conducted a study on “family education and academic performance among South East Asian students”. This study investigates the impact of cultural values and family life on the academic performance of 102 high school students using both a survey questionnaire and six case studies. The findings indicate that children whose parents set high educational and career goals performed better than those who did not. The survey findings showed evidence that children who experienced positive relationship with their parents perform better in schools.

Mtoya (1995) had compared “The relationship between perceived parenting styles and self concepts of black and white high school students”. found that for black students all the self concept facets measured were positively related to their perceptions of parental behaviour. The relationship reached significance for white students only for the relations with family, general school and self concept. Results suggest different dimensions of parental support between two groups with significant influence on self concept.

Rivera (1997) had studied “The effects of home environment and parent-child interactions on Latino adolescents’ academic achievement”. The findings indicated that home environment was a significant predictor of academic achievement.

Edward (2003) had conducted a study on “The effect of family structure, family income and home environment on graduation rates of special education students in three urban high schools”. The objective of the study was to determine whether the present methods being used to teach the specific learning disabled students will enable them to graduate with the standard high school diploma and prepare them for some form of post high school education. The findings of the study revealed that parents of
the learning disabled students regardless of the socio economic status aware of the interest in their child’s success.

Ansari (2004) had conducted a study on “The home literacy environment”; parental believes about reading and the emergent literacy skills of children with Downs syndrome. The results showed that while the three groups did not differ in parental believes about reading, older children with Downs syndrome and typical children were exposed to more literacy-rich home environment and had greater interest in reading.

Lam (2005) in a study had described that in order to help children succeed in schools, professionals must work with family system. The benefits of involving families in educating children are evident in research findings. Study highlights that families are equal and full partners with educators and school systems and this relationship will benefit the student and the entire school system.

Horowitz and Bronte (2007) in their study had reported that parent’s positive involvement with their children’s schooling is related to many positive outcomes. Family involvement can be an important of such programmed and may lead to a range of benefits for children, families and programmers.

Luong (2008) had described that parents and caregivers can play an important role in helping their children to improve their reading skills. The purpose of this study was to show that with teacher scripted directions to parents or caregivers will help at risk second graders increase their reading fluency level.

Shanty José(2009) had conducted “a study on emotional intelligence, family acceptance, school environment and academic achievement of secondary school
The findings indicated that home family acceptance was a significant predictor of academic achievement.

2.6. CRITICAL REVIEW

The investigator has reviewed many studies related to the variable achievement in mathematics, mathematical phobia, self efficacy and family acceptance. In the reviewed studies most of them are survey researcher stratified random sampling techniques has been used in most of the studies. The investigator feels that the study is significant contribution to the filed of education in the taluk of cuddalore. Both Indian and foreign studies are on different level/categories of people, thus the present study is different and significant from the investigators point of view reveals in itself.

The present study differs from the above studied in terms of area, population and sample. Hence the present study is different from studies that have been already done. The present study reads achievement in mathematics, mathematical phobia, self efficacy and family acceptance of secondary school students.