CHAPTER -II

REVIEW OF RELATED LITERATURE

2.0 INTRODUCTION

Researcher takes advantage of the knowledge that has accumulated in the past as a result of constant human Endeavour. It can never be undertaken in isolation of the work that is already been done on the problems, which are directly or indirectly related to a study proposed by a researcher. A careful review of the researcher journals, books, dissertations, thesis and other sources of researcher journals, books, dissertations, thesis and other sources of information on the important steps in the planning of any research study.

Purpose of the Review

Review of the related, besides, allowing the researcher to acquaint him with current knowledge in the fielder area in which he is going to conduct his research, serves the following specific purposes:

1. The review of related research enables the researcher to define the limits of his fields. It helps the researcher to delimit and define his problem. The knowledge of related research, beings the researcher up-to-date on the work which others have done and thus to state the objectives clearly and concisely.

2. By reviewing the related research the researcher can avoid unfruitful and useless problem areas.

3. Through the reviewing of related research the researcher can researcher can avoid unintentional duplication of well-established findings.

4. The review of the related research give the researcher an understanding of the research methodology, which refers to the way the study is to be conducted. It helps the researcher is also to provide insight into the statically methods through which validity of results is to be established.
5. The final and important specific reason reviewing related researches are to know about the recommendation of previous researchers listed in their studies for further research.

Keeping in view the importance, review of related researcher was conducted and the same has been systematically presented in this chapter in its six sections.

2.1 RESEARCH STUDIES ON SELF-EFFICACY

Available research studies on self-efficacy have been reported below:

Hemmingsen and Rae (2001) found that career self-efficacy is highly related to academic achievement and educational development in eleventh-grade students. Students with high career self-efficacy score also had high academic achievement. Females had greater career self-efficacy than males.

Femandez-Ballesteres, Diez-Nicoles, Caprara, Barbaranell, and Bandura (2002) found that man had a higher sense of efficacy than women to contribute to the solution of social problems. In accord with the positive structural model, Socioeconomic status contributed to both perceived personal efficacy to manage one’s life circumstances and individual efficacy to contribute to the betterment of societal condition.

Anderson, Dragsted, Evans, and Sorensen (2004) studied science teaching self-efficacy belief among new teacher of elementary science. It was found that positive changes in self-efficacy seemed positively related to the occurrence of environmental factors helpful to teaching ($r=.401, p=0.11, n=39$)

Mottet, Beebe, Raffeld and Medleck (2004) studied that effects of student verbal and non verbal responsiveness on teachers self-efficacy and job satisfaction over a quarter (26%) of the total variances in teachers self-efficacy and over half (53%) of the total variance in teacher job satisfaction were attributable to students verbal and non verbal responsiveness Overall, students non-verbal responsiveness had a greater effects on teacher self-efficacy and job satisfaction job satisfaction was more susceptible to student verbal and non verbal responsiveness than teacher self-efficacy.
Whittington, McConnel and Knobloch (2006) found that novice teachers who leave the profession are less efficacious than teachers who remain although novice teachers may generally have lower teacher self-efficacy, student teachers may enter the profession with an enlarge level of teacher self-efficacy due to the mastery experiences and other obtained sources during student teaching.

Woolfolk (2007) reported that experienced teachers may develop a higher level of teacher self-efficacy in that they will have had experiences real success with the students in the classroom. Experiences teachers vary in their level of efficacy depending on the level of efficacy for the school they teach at. Furthermore reported that teachers sense of efficacy, teacher’s believe that he/she can reach even difficult students to help them learn, appears to be one of the few personal characteristics of teachers that is correlates with student achievement.

Wolf (2008) reported that beginning agriculture teachers in the state of Ohio perceived themselves as being fairly efficacious with age and excellence of the students teaching experience and first year teaching being related.

Bhattacharyya, Volk and Lumpe (2009) found a positive correlation between the level of science teaching self-efficacy beliefs as measured by the science teaching efficacy beliefs instrument (STEBI) of five pre service elementary teacher and their observed ability to effectively implement inquiry in the classroom bas upon the horizon research observation protocol (HROP).

Settlage, Sotherland, Smith and Ceglie (2009) attempted to examine the relationships among pre service elementary teachers ‘science teaching self-efficacy beliefs, teacher identities, and science instructions in culturally diverse classrooms. The authors hypothesized that the teachers’ self-efficacy and outcome expectancy beliefs related to science teaching and specifically to teaching science in diverse classrooms, would increase following a semester of student teaching in culturally diverse elementary classrooms. However it was discovered that teachers’ self-efficacy scores, at all levels, increased little, if at all; STEBI scores began high and remained high.
Fives and Looney (2009) suggested that, like a personal sense of efficacy, collective-efficacy beliefs for groups can have an effect on their “goal setting, motivation, effort and persistence with challenging tasks or situations”.

Ng, Nicholas, and Alan (2010) proposed that Teachers lack of belief in themselves as effective teachers is another problem in education. Teachers should believe in themselves, their instruction, and their management of the students. Teachers who do not know why they are teachers feel confused and experience stress in their work. Teachers’ beliefs are the ideas that influence how they conceptualize teaching and this self-conception is central to efficacy in teaching.

Bruinsma and Jansen (2010) study investigated 198 pre service teachers’ intrinsic and extrinsic motivation for becoming teachers and focused on the distinction between adaptive motives, which promotes lasting and effective engagement and maladaptive motives, which promote superficial engagement. Teacher self-efficacy was positively related to the amount of time pre service teachers intended to remain in the profession.

Brusal (2010) in the area of science teaching, gender differences have also been noted, although one gender has not been found to have consistently higher levels of self-efficacy than the other.

Lamote and Engels (2010) study focuses on student teachers perceptions of their professional identity. The respondents were students enrolled in a three year course in secondary education teaching at Bachelor level. Questionnaires were filled out by first year, second year and third year students from two colleges. The questionnaire included four scales: commitment to teaching, professional orientation, task orientation and self-efficacy. In the first five months of the first year course, a shift in students’ task orientation was observed: students developed a more pupil centered view on teaching. Practical experience with classroom teaching again caused a shift: students focused less on the subject matter, on maintaining order in the classroom, on the long term educational qualification targets and self-efficacy decreased. Students with work placement experience developed a more ‘realistic’ view of learning and teaching compared to students without this experience.

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Ates, Ates and Alev (2011) to investigate pre-service computer teachers’ self-efficacy beliefs and achievement motivation levels for educational software development before and after the "Educational Software Design, Development and Evaluation (ESDDE)" course. A pretest and post test design without a control group was employed. In 2008, 46 senior students (25 male and 21 female) who were enrolled at Computer Education and Instructional Technology department participated in this study. The data were collected by the scale of self-efficacy beliefs towards Educational Software Development (ESD), achievement motivation scale besides student demographics form. Positively, the results revealed that the students' self-efficacy beliefs towards educational software development significantly improved after ESDDE course. Before the course, the students' self-efficacy beliefs were significantly different according to perceived level of programming competency and gender in favor of male, however after the course there was no significant difference in self-efficacy beliefs regarding gender and perceived level of programming competency. Hence, achievement motivation levels after the course were significantly higher than before while gender and perceived level of programming competency had no significant effect on achievement motivation for ESD.

Lisa Ruble, Ellen Usher and John McGre (2011) found that Teacher self-efficacy refers to the beliefs teachers hold regarding their capability to bring about desired instructional outcomes and may be helpful for understanding and addressing critical issues such as teacher attrition and teacher use of research-supported practices. Educating students with autism likely presents teachers with some of the most significant instructional challenges. The self-efficacy of 35 special education teachers of students with autism between the ages of 3 to 9 years was evaluated. Teachers completed rating scales that represented self-efficacy and aspects of the following 3 of Bandura’s 4 sources of self-efficacy: (1) sense of mastery, (2) social persuasions, and (3) physiological/affective states. Significant associations were observed between physiological/affective states and self-efficacy, but no associations were observed for the other sources.

Sunjin Oh (2011) to examine several potential sources of pre-service teachers’ perceptions of their teaching efficacy during their reading and writing
lessons. More specifically, the study explored the relationship between the sources of pre-service teachers’ self-efficacy and teachers’ perception of efficacy in the areas of instructional strategies, classroom management, and student engagement. Forty-three pre-service teachers in pre-literacy methods courses and fourteen in post-literacy methods courses completed the survey, which consisted of the Teacher Sense of Efficacy Scale (TSES) and Teaching Efficacy Sources Inventory. Paired t-test results showed that pre-service teachers’ teaching efficacy increased in the three subscales of instructional strategies, classroom management, and student engagement by the end of the literacy method courses. Efficacy for instructional strategies, classroom management, and student engagement were highly intercorrelated with each other in the pre-test data. The results of multiple regression analysis indicated that personality characteristics, capabilities, motivation, enactive mastery experiences with social/verbal persuasion, and physiological/affective state were significant predictors when efficacy for classroom management was the dependent variable in the post-test data. Findings of this study revealed that pre-service teachers’ personality, motivation, and capabilities were one of the important sources to improve their teaching efficacy.

Mohammad Taghi, Monshi and Afshaneh (2012) investigated the relationship between EFL teachers' locus of control and self-regulation and the moderating role of self-efficacy. To empirically investigate the theorized relationship between self-regulation and locus of control, 63 English teachers were selected according to a convenience sampling from different language institutes in Mashhad. The participants were asked to complete the 'Teacher Self-Regulation Scale' as well as the 'Teacher Locus of Control Scale'. The data supported the theoretical expectation of a linkage between self-regulation and locus of control. The results indicated a significant relationship between teachers' self-regulation and internal locus of control. It was found that about 48% of the variation in teacher self-regulation can be explained by taking their internal LOC into account. Subsequent data analyses indicated that among the components of self-regulation, 'mastery goal orientation', and 'intrinsic interest' have the highest correlations with teacher locus of control. The findings also illustrated that teacher self-efficacy had no significant impact on the relationship between self-regulation and locus of control.
control. This suggests that regardless of the teacher self-efficacy level, a teacher self-regulation is related to his/her internal locus of control. The results derived from the present study should encourage teacher educators to take advantage of this relationship by providing EFL teachers with programs and experiences for developing effective paths for enhancing teacher self-regulatory skills as well as their internal tendencies and perceptions.

Odaci (2013) in his study to investigate the extent to which postgraduate students' belief in their computer self-efficacy, self-esteem and subjective well-being predicts research self-efficacy. The study group consisted of 247 postgraduate students studying at the Karadeniz Technical University Institute of Social Sciences, Institute of Science and Institute of Health Sciences. The Research Self-Efficacy Scale, Computer Self-Efficacy Scale, Self-Esteem Scale, Subjective Well-being Scale, and a Demographic Data Form were used for data collection. Data analysis was performed by Pearson moments correlation, multiple linear regression analysis, t test, one-way analysis of variance, and the Scheffe test. Study findings revealed a significant positive correlation between students' belief in their research self-efficacy and computer self-efficacy and subjective well-being, but no significant correlation with self-esteem. In terms of belief in their research self-efficacy, female students regarded themselves as more efficacious than did males, Institute of Science students regarded themselves as more sufficient than students at the other institutes, and students working on doctorates regarded themselves as more efficacious than master's degree students with or without a thesis component.

Ozgen Korkmaz (2013) reported in his study is to determine programming related self-efficacy perceptions of prospective teachers, receiving education in the computer and instructional technologies teacher education program. The present study was conducted by means of descriptive scanning model. A total of 189 prospective teachers constitute the study group. Research data were collected by using the Computer Programming Self-Efficacy Perception Scale (α=0.981). Frequency, percentage, arithmetic mean, t, anova and LSD tests were conducted on the collected data (p<.05). Two conclusions were reached at the end of the study: Prospective teachers' self-efficacy perceptions on programming are at medium
level. Gender and class level do not differentiate prospective teachers' self-efficacy perceptions on programming.

Yazachew (2013) in his study investigated the level of students’ self-efficacy and their achievement in analytical chemistry I (ACI) and identified the difference in self-efficacy and achievement between the males and females and determines relationships between the two variables. The total students’ mean self-efficacy level is found to be medium (50.08). The mean score of their achievement in ACI test is 61. Both males and females have no significant difference in self-efficacy. However, female students’ self-efficacy is slightly lower than that of males. In addition, it was investigated that because of self evaluation in class participations and knowledge of the college’s norm referenced evaluation system, female students had developed a fear of not getting better results, which entirely would affect their achievement in analytical chemistry test. In addition, their self-efficacy and achievement are positively and significantly related. Since student self-efficacy beliefs were found to be significantly and positively related to their achievement in analytical chemistry in this study, the importance of self-efficacy's influence on academic performance in science fields cannot be underestimated. According to Bandura (9) efficacy beliefs partly shape the courses that lives take. Therefore as student self-efficacy and academic achievement are highly connected, educators and counselors should identify students with low self-efficacy and then implement methods to raise the low student self-efficacy levels.

Thus fore going studies conveyed the message that general self-efficacy had not been studied in relation to gender and academic achievement in Indian context.

2.2 RESEARCH STUDIES ON SELF-ESTEEM

Some research has been reported on the relationship between self-esteem and academic achievement among the students.

Mefteh (2002) also conducted the same study on 378 students (boys and girls) in secondary school based on randomly sample through Cowper Smiths of self-esteem questionnaire. This research demonstrates that there is a significant relationship between self-esteem and the students’ CGPA.
A recent meta-analyze study PourSina (2003) reported differing results. In this research, entitled “the analysis of self-esteem depression and academic achievement of boy students in Tehran” included 192 secondary school students. Cowper Smith’s self-esteem test was used for data collection and CGPA for the academic achievement. The result shows that there is a significant difference among the students.

Emamzadeh (2004) did a research in order to compare the social skills and self-esteem and academic achievement among 261 students (boys and girls) in Orumieyeh city. Self-esteem test (Popo) and Mathematics test were used to evaluate through descriptive statistic methods and t-test. The result shows that there was no significant relationship between self-esteem and academic achievement.

In another investigation Amini (2004) conducted a research in order to study the role of self efficiency, self regular and self-esteem in high school students’ academic achievement. 500 students (300 girls and 200 boys) participated in this study in ShareKord. The result shows both positive and significant relationship between self-esteem and academic achievement.

Additionally Zeinvand (2006) studied the relation between self-esteem, social support and student’s educational progression in a high school in Darch Shar, a city in Iran. 72 students (37 boys and 35 girls) were classified based random method. The research data were collected through Cowper Smith’s questionnaire of self-esteem. The data analysis showed no significantly relationship between self-esteem and academic achievement. However, the research depicted the significant differences in boy and girls. The t test revealed that self-esteem is more in boys than in girls.

Chopra and Sahoo (2006) conducted a study entitled ‘Self-esteem of secondary school students in relation to parent involvement’ and explored that where parents are highly involved, students are having positive and balanced self-esteem in comparison to those students whose parents are less involved, it reveals that parents involvement has its impact on self-esteem of secondary school students and the relationship between self-esteem and parental involvement is found to be positive and significant.
Furst (2006) reported that higher self-esteem has not only positive effects in the present, but could also have positive effects for the child’s perception for the future. If a child feels more confident now, the child likely to also have more positive outlook towards the future. This could be manifested in terms of improvement in expectations of personal as a success as a belief that they could achieve a better goal in life.

Lentini and Knox (2008) several meta analyses have found that personal benefits include items such as: higher self-esteem, self awareness, self-efficacy, self control, a sense of well being, confidence, assertiveness, the resolution of inner conflicts and provides an opportunity to re-pattern maladaptive behaviours, feelings and attitudes.

According to the study of Pullmann and Allik (2008) there are some probable lines of description why low general self-esteem does not essentially signal a poor academic achievement. (1) having achieved academically success, students have a more critical viewpoint on their persons. (2) students with additional limited academic capacities compensate their academic lack by uplifting their general esteem.

Habibollah Naderi, Rohani Abdullah, Tengku Aizan, Jamaluddin Sharir, and Kumar (2009) study examined self-esteem, gender and academic achievement. Participants (N= 153, 105 = male & 48= female) completed the Persian version of the Rosenberg Self-esteem Scale (RSES)(Tevakkoli, 1995). The RSES as a questionnaire test included 10 items. Cumulative grade point average (CGPA) was used to select the participants. Data were analyzed by multinominal logistic regression and independent sample t-test. The findings from this study indicate that although self-esteem indicates a strong significant relationship on academic achievement when gender is controlled (Chi-Square =14.173, Sig=.007, P<0.01, there is no relationship between self-esteem and academic achievement (Sig=.074, P>0.05). In other words, a significant difference between gender and self-esteem was observed (Sig=.001, P<0.01).

Shobhna and Srivastava (2009) to investigate the self-esteem and academic achievement of urban and rural adolescents, and to examine the gender differences
in self-esteem and academic achievement. The sample of this study consisted of 400 adolescents (200 urban and 200 rural) from Varanasi District. The findings indicated that there were no significant differences with regard to self-esteem of rural and urban adolescents. There were significant differences with regard to academic achievement of rural and urban adolescents. Urban adolescents scored higher in academic achievement as compared to rural adolescents. Boys would score significant 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.

Nicole Martins and Kristen Harrison (2011) studied a longitudinal panel survey of 396 White and Black preadolescent boys and girls was conducted to assess the long-term effects of television consumption on global self-esteem. The results revealed television exposure, after controlling for age, body satisfaction, and baseline self-esteem, was significantly related to children’s self-esteem. Specifically, television exposure predicted a decrease in self-esteem for White and Black girls and Black boys, and an increase in self-esteem among White boys.

Elan Hope, Chavous, Jagers and Sellers (2013) Using a person-oriented approach, we explored patterns of self-esteem and achievement among 324 Black college students across the freshman college year and identified four academic identification profiles. Multivariate analyses revealed profile differences in academic and psychological outcomes at beginning and end of freshman year (academic contingencies of self-esteem, anxiety, depressive symptoms, and perceived stress), suggesting different conditions under which connections between self-esteem and achievement relate to positive or negative adjustment. Results also suggested strong, positive racial group identification supports psychologically adaptive connections between self-esteem and achievement. Findings highlight challenges and benefits of connecting self-esteem to achievement for Black college students, heterogeneity within this population, and the relevance of considering race and cultural factors when studying achievement motivation processes among Black students.
2.3 RESEARCH STUDIES ON THINKING STYLES

Studies pertaining to thinking styles have been presented below:

Zhang (2000) inquired into the relationship between thinking style and personality types in the context of Sternberg’s theory of mental self-government and Holland’s theory of personality types. Thinking styles inventory (Stenberg and Wagner) and short version of self-directed search that was specially designed for the study, were administrated on university students from Hong Kong. A major finding was that thinking styles and personality overlap to a degree.

Zhang (2001) studied the thinking style of secondary school students and found that thinking styles statistically predicted academic achievement beyond self-related abilities. Conservative executive and were positively related to achievement. In social sciences received either judicial or hierarchical and in natural sciences required conservative thinking style. Legislative and liberal thinking styles were found to be negatively related to achievement. Average achievement was related to judicial thinking style.

Bernardo, Zhang and Calluing (2002) studied the thinking style and academic achievement among Filipino students with precept of Sternberg’s (1988-1997) theory of mental self-government apply to non-western culture they administered Sternberg and Wagner’s 1992 thinking styles inventory which is based on the theory of mental self-government to university students. The results of item analysis scale inter correlation and factors analysis was consistent with the general provision of the theory. Correlation analysis between this styles and grade point average show that thinking styles are related to academic achievement.

Maree and Boer (2003) studied the relationship of thinking style preference and language proficiency for South African student whose native language differ the diversity of thinking styles preference of the students enrolled in a language development course was also assessed on the Herronann Brain dominance instrument scores indicated a range of thinking style preference but the group’s overall means scores represent details oriented and feeling based modes of thinking processes. These thinking styles could be a focus of educational strategies in South
Africa using the perceptive that qualitatively different approaches to teaching might be associated with students qualitatively different approaches to teaching might be associated with student qualitatively different approaches to leaving.

Zhang (2004) undertook a study on university student preferred teaching style and their conception of effecting teachers. Thinking style inventory preferred thinking inventory and their conception of effecting teacher. Thinking style inventory preferred thinking style inventory and effecting teacher inventory were used in the study. The results indicated that even effects are gender, academic discipline were controlled, particular thinking style made a difference in their conception of effective teachers. It may be noted from above presentation that a little research has been conducted on thinking style employing Sternberg and Wagnor’s TSI and academic achievement of college students also a few studies have determined gender difference in thinking styles. Further studies’ are not available on the interaction of academic achievement and gender with references to thinking styles.

Park, Park and Choes (2005) investigated the thinking styles of Korean gifted students in Korea and examined whether thinking styles based on the theory of mental self-government could predict scientific giftedness based on Korean people’s implicit concepts. Participants were 179 students from two science high school and 179 students from general high school in Korea. Thinking styles inventory (Sternberg and Wagnor, 1992) and scientific giftedness Inventory (Shim and Kim, 2003) were administrated. Korean gifted students preferred legislative, judicial, anarchic, global, external and liberal styles whereas Korean non gifted students preferred executive, Korean non gifted students preferred executive Oligarchic and conservative styles. Thinking styles were also found to be significant predictors of scientific giftedness.

Richmond and Liu (2006) evaluated the thinking styles of 160 undergraduate students three universities enrolled in online distance education courses. Sternberg – Wagner. Thinking style Inventory (1997) was administered and the results indicated a disproportionate number of legislative and hierarchic thinkers in online distance education courses.
Albaili (2007) examined the differences in thinking styles among low, average, and high achieving United Arabs Emirate college students. Thinking styles inventory was used to assess students’ thinking styles. Results indicated that low achieving students scored significantly lower on executive, hierarchic, anarchic, local conservative and internal styles. Low achieving students scored significantly higher on legislative, oligarchic and liberal styles. A discriminate analysis revealed that executive and conservative styles were the most discriminating factors that separated low-achieving students from their high-achieving peers.

Sladek, Philips and Bond (2008) conducted a study on thinking styles and doctors’ knowledge and behaviours relating to the acute coronary syndromes guidelines. The relationship between thinking styles and the knowledge and clinical practices on a sample of 74 doctors involved directly in the management of acute coronary Syndromes in Australia was investigated in the study. Self reported doctors’ thinking styles and surveys were used. Results suggested that guideline-discordant practice was associated with an experimental style of thinking.

Castro and Bauml (2009) sought to investigate the circumstances which enables career switches to move from merely thinking about teaching to actually becoming a teacher. Data from the study suggested that timing plays a crucial role in determining whether someone will change careers and whether she or he will choose teaching as the next options.

Zhang (2010) research examines the roles of thinking styles in learning and achievement among Chinese University Students. These studies were conducted. Study first and second quantitatively examined the roles of thinking styles in academic achievement while ability and personality traits are statistically controlled. Study third qualitatively cross-validated the result from the studies first and second explored if and how students made use of thinking styles in course of learning. Study first involved 223 first-year students, study second was conducted among 504 students if all four academic years and 10 teachers. 45 students participated in focus group discussion in study third. Data analysis of study first were conducted at the individual styles and study second were undertaken at the
level of style type. Quantitative results indicated that he predicted significant relationship of student’s achievement with thinking styles; ability and personality traits were not supported.

Saxena and Aggarwal (2011) study evaluates the distribution of thinking styles among prospective teachers. The Sternberg-Wagner Thinking Styles Inventory (Sternberg, 1997) was administered on 100 students of Bachelor of Education course of two colleges of education affiliated to Kurukshetra University, Kurukshetra. Results indicated some interesting patterns of thinking styles of prospective teachers. In the present study, the investigators have made an attempt to find out the prevalent thinking styles among prospective teachers and how these thinking styles affected their teaching.

Sharma and Neetu (2011) reported that learning-thinking style and academic achievement of secondary school students are positively and significantly related to each other. Students having high academic achievement are better for teaching. It can be said that academic achievement is a factor which influence the learning-thinking style of secondary school students. It can also be concluded that male and female secondary school students are not different in respect to their academic achievement whereas they are different in respect to their learning-thinking style.

Aaron and Lynn (2012) reported in his study that the growing number of higher education students who are educated in online learning environments necessitates the study of thinking styles and learning environments. This study sought to investigate online student’s thinking styles and how those styles may affect academic performance in an online class. One hundred and eighty seven online college students were administered the Sternberg Wagner Thinking Style Inventory (TSI) and measured on their online academic performance. Similar with past research, we found that those student’s internal and hierarchical scores positively predicted online course GPA and anarchic and legislative style scores negatively predicted online course GPA. The results of this study imply that the thinking styles can be implemented and a useful tool in the online learning environment.
Farrokhlagha and Zahra (2012) in his study explored the relationship between thinking styles and metacognitive awareness of Iranian EFL university students. In addition, the study pursued whether thinking styles could act as the predictors of meta-cognition. Moreover, significant positive correlations were found between hierarchical, anarchic, and external styles and meta-cognitive awareness. However, results manifested no significant relationship between monarchic, oligarchic, and conservative styles and meta-cognitive awareness. The analysis of data also showed positive and significant relationship between the two scopes of thinking styles, namely internal and external, and knowledge of cognition as one of the components of meta-cognition, whereas merely external style was positively and significantly correlated with the other component of meta-cognition called regulation of cognition. Furthermore, regression analysis suggested that executive, hierarchical, and conservative styles could predict meta-cognition.

Turki (2012) in his study found that the common thinking styles came mid in general, it also indicated that there are no statistically differences on level of ( $\alpha = 0.05$ ) attributed to the variable of gender in all the styles except the legislative and judicial style, the differences came to the favor of males. The differences of the executive style came to the favor of females.

Jieqiong and Zhang (2013) in his study demonstrated that the general constructivist learning environment played an important role in students’ thinking styles. Specifically, constructivist-oriented teaching as well as peer morale and identities in learning were positively associated with thinking styles that are characterised by cognitive complexity, nonconformity, autonomy, and low degrees of structure (characteristics of Type I styles), while assessments and assignments oriented to deep understanding as well as learning facilities had positive associations with both Type I (creativity-generating styles) and Type II styles (norm-conforming styles). Clear goals and coherence of curricula had positive relationships with Type II styles while student–student cooperation played a statistically significant role in Type III styles. Among these findings, the relationship of clear goals and coherence of curricula to Type II styles needs to be further studied with the content and the amount of instruction being examined. In
addition, the role that learning facilities play in both Type I and Type II styles also requires further studies to explore the nature of different facilities and different ways by which students use these facilities, so that we can improve our understanding of how learning facilities are associated with different styles.

2.4 RESEARCH STUDIES ON DECISION MAKING STYLES

Available research studies on decision making styles have been reported below:

Scott and Bruce (1995) found that internally controlled individual were more likely to employ a rational decision making style and less likely to making style and less likely to employ an avoidance decision making style than the externally controlled individual. The lack of significant correlation between control and intuitive style implies that internally and externally controlled individual were equally likely to use intuition in making important decisions.

Mitchell and Walsh (2004) suggested male and female want difference products and they are likely to have different ways of thinking about obtaining these. This study further an understanding of how gender affects consumers approaches to decision making. The researcher used Sproles and Kendall’s (1986) consumers styles inventory CSI on a sample of 358 German male and female. Although all seven German decision making characteristic found in a previous German study could be confirmed for female only four could be confirmed for male raising the question of whether the CSI is equally valid for both genders. tentative support was found for five new male factor namely satisfying enjoyment variety seeking fashion sale seeking time restricted and economy seeking the results imply that the CSI has construct validity for female but appear to be less valid for males.

Cherubini (2008) studied that professional values and ethics are central agencies innately connected to the teaching. In Ontario, Canada the college of teachers established the ethical standards for teaching profession. In the context of these ethical standards, this study employed a professional inquiry model using case study to investigate prospective teachers learning by examining over 800 reflection blogs written by 52 undergraduate students. Result reveals that: (i) the ethical statement are instrumental in scaffolding their learning. (ii) The practice of teaching
exists within paradoxical tensions; the study also discusses how the process challenged participants’ identity by bringing them to the threshold of moral disequilibrium.

Pop and Turner (2009) explored the relationships of pre-service teachers’ levels of commitment to teaching as a career. Participants were undergraduate students enrolled in a teacher education programme at a major university in the southeast. Overall, the finding from this study that pre-service teachers understanding of their goal of becoming teachers and interpretations of their motivation for teaching were unique, yet the types of influences on their career choices were similar across participants’ stories.

Geoffrey Liu (2010) attempts to identify and establish spontaneous group decision making in collaborative learning as a new research direction, with particular attention to collaborative learning in distributed online environments. After a brief introduction, related concepts and theories are examined for differentiation of interpretation. The concept of “spontaneous group decision making” is established in the context of collaborative learning. Literature review is conducted to glean anecdotal observations from past research to identify potentially influential factors, and a diagram framework is proposed to charter the territory. The findings indicate that spontaneous group decision making is prevalent in distributed collaborative learning activities and suggest that this area be investigated from a perspective different from the mainstream research on group decision making in other settings.

Rots, Aelterman, Vlerick and Vermeulen (2010) conducted two wave survey study aimed at testing a hypothetical model of teacher education graduates’ decisions about whether or not to take a teaching position upon graduation. The model focused on the relationship between teacher education and graduates’ choice on job entrance. The results validated the relationship between teacher education variables and nearly graduates’ intention to enter the teaching profession. Furthermore, this intention proved an imperative predictor of graduates’ actual entrance.
Duze (2011) showed that students and teachers, irrespective of sex, indicated alike a low level of participation in administrative creative decisions which influenced their attitude to school work and school internal discipline. Furthermore, low level of participation was found to have significant unwholesome impact on their attitude to school work and the school internal discipline thus undermining accomplishment of set instructional objectives/educational goals. It was therefore recommended that all school administrators in Nigeria should wisely adopt participatory decision-making for optimal goal attainment.

Ahmed, Hasnain and Venkatesan (2012) examine the relation of personality and cognitive styles with the decision-making style of future managers. The results showed that intuitive personality type had a significant relationship with the conceptual decision style. The personality type ‘thinking’ showed positive correlation with directive decision style, but negative correlation with behavioral. However, the personality type, ‘feeling’ showed positive correlation with behavioral decision style. Personality type, ‘judging’ had a significant relationship with analytical decision style, whereas, personality type, ‘perceiver’ had an inverse relationship with it. Further, it was found that systematic and intuitive cognitive styles had an inverse relationship with behavioral decision style. Though systematic cognitive style had a significant relationship with analytical decision style, the study concludes the need for the inclusion of training programs on decision making for management students.

Rana, Arfan and Majid (2012) investigate the moderating role of emotional intelligence on the relationship among decision making styles and organizational performance. Findings of the study determine that employee’s different decision making styles influence organizational performance differently. Major findings include that rational and dependent decision making styles have high positive impact on organizational performance while avoidant decision making styles has negative impact on organizational performance. Study further determines that emotional intelligence moderates the relationship among decision making styles and organizational performance.

Yasemin and Thomas (2013) in his study compared the impact of three types of case-based methods (case-based reasoning, worked example, and faded worked example) on pre-service teachers’ (n=71) interaction with decision tasks and
whether decision related measures (task difficulty, mental effort, decision making performance) were associated with the differences in student characteristics (decision making styles, self-efficacy, confidence). Participants in this study received a short-term implementation of one of these three major approaches to case-based instruction. The results showed that while students’ perceptions of task difficulty and mental effort did not change as a function of treatment, the worked example group, compared to the case-based reasoning and faded worked example groups, performed better on making reason-based decisions related to classroom management.

2.4 RESEARCH STUDIES ON ACADEMIC ACHIEVEMENT

Available research studies on academic achievement have been reported below:

Avinashilangam, Vijaya and Singh (2001) found that classroom factors play a major role in affecting the student’s academic performance. The students’ inner urge, competency of teachers, no physical distraction and like mindedness colleagues contact make a student more competent to succeed in life.

Burchinal, Pelsner, Leing, Robert and Howes (2002) found that children tended to show better academic scales across time if their parents have more education.

Capara, Barabaranelli, Pastoreli, Bandura, Zimbardo (2002) demonstrated robust contributions of early pro-social behaviour of children’s developmental trajectories in academic and social doamins. both pro-social and aggressive behaviours in early childhood were tested as predictors of academic achievement and peer relations in adolescence 5 years later. Prosocialness included cooperating, helping, sharing and consoling, and the measures of anti-social aspects included proneness to verbal and physical aggression. Pro-socialness had a strong positive impact on later academic achievement and social preferences, but early aggression had no significant impact on either outcome. The conceptual model accounted for 35% of variance in later academic achievement and 37% of variance in social preferences. Additional analysis revealed that early academic achievement did not contribute to later academic achievement after controlling for effects of
early pro-social ness. Possible mediating process by which pro-social ness might affect academic achievement and other socially desirable development were proposed.

Rani (2003) studied the impact of home environment on academic achievement and educational aspirations of college students. Results of the study showed that homes that provided motivating educational environment had positive significant effect on academic achievement of college students in comparison to the homes where parents did not provide educational facilities or environment to the children.

Chaudhary (2004) found that academic achievement was associated with intelligence.

Rani and Latha (2005) in their study aimed to investigate the relationship between family environment, home adjustment and academic achievement in adolescents. The adolescents (106 boys and 86 girls) were assessed using the Moos and Moos family environment scale and Bell’s adjustment inventory. Academic scores were taken from the school records. Family environment appeared to influence home adjustment as well as academic performance. The majority of the sample perceived their family as cohesive, organized, achievement oriented and emphasizing on moral, religious issues with minimal conflict. Cohesion, conflict, control, intellectual-cultural orientation and independence in the family environment influenced home adjustment. Academic performance was significantly related to independence and conflict domains of family environment. Boys and girls differed in perception of the home and environment.

Ahuja and Goyal (2006) revealed in their study that highly involved parents have aspirations for their children and therefore are more concerned about academic development of their children and provide time, guidance, environment and encouragement to children with raises achievement level of these children.

Dhanya, Mary and Kumar (2007) found that there is significant relationship between self acceptance and academic achievement. As self acceptance increase academic achievement also increases.
Carroll, Houghton, Wood, Unsworth, Hattie, Gordon, and Bower (2008) the present research investigated the structural relations among self-efficacy, academic aspirations and delinquency, on the academic achievement of 935 students 11-18 years from 10 school in two Australian cities. The children’s self-efficacy scale, adapted self report delinquency scale (revised) and children’s academic aspirations scale were administered to participants prior to academic achievement being assessed using midyear school grades. Structural equation modeling was employed to test their alternative model for relationship from academic, social and self regulatory efficacy on academic achievement. A partial mediation model showed that best overall fit to the data. Academic and self regulator efficacy had an indirect negative effect through delinquency and a direct positive effect on academic achievement. Academic and social efficacy had positive and negative relationships, respectively, with academic aspiration and academic achievement; however the relationship between academic aspiration and academic achievement was not significant in the final model.

Litmanen, Hirsto, Lonka, Schmidt, Zdzinski, and Ballard (2010) results showed that students who perceived progress were capable and had intrinsic reasons for their goals advanced more rapidly in their studies. The implication is that variation in academic achievement is at least partly a consequence of variation in orientation towards studying at the beginning of the study period.

Dahar (2011) conducted a study to find out the impact of teacher quality on the academic achievement of students at secondary stage in Punjab the study delimited its scope to the five indicators of teacher quality i.e., academic and professional qualification, in-service refresher courses/training, teacher experience and teacher salary. The study found that there are no much difference in the quality of teachers of schools with higher academic achievement and that of the schools with lower academic achievement.
2.7 REFLECTION OF RELATED RESEARCHES

Self-Efficacy

Self-efficacy has been investigated in relation to teaching efficacy reported in (Whittington, McConnel and Knobloch, 2006; Settlage, Sotherland, Smith and Ceglie, 2009; Bruinsma and Jansen, 2010) study investigated pre service teachers’ intrinsic and extrinsic motivation. (Mohammad Taghi, Monshi and Afsaneh, 2012) to investigated the relationship between EFL teachers’ locus of control and self-regulation and the moderating role of self-efficacy. (Lamote and Engels, 2010; Sunjin Oh, 2011) study focuses on student teachers perceptions of their professional identity. (Hemmingsen and Rae, 2001) found that career self-efficacy is highly related to academic achievement and educational development in eleventh-grade students. (Odaci, 2013) to investigate the extent to which postgraduate students’ belief in their computer self-efficacy, self-esteem and subjective well-being predicts research self-efficacy. (Fernandez-Ballesteres, Diez-Nicoles, Caprara, Barbaranell, and Bandura, 2002) found that man had a higher sense of efficacy than women to contribute to the solution of social problems. (Anderson, Dragsted, Evans, and Sorensen, 2004) studied science teaching self-efficacy belief among new teacher of elementary science. (Mottet, Beebe, Raffeld and Medleck, 2004) studied that effects of student verbal and non-verbal responsiveness on teachers self-efficacy.

Some researchers reported self-efficacy in relation to gender. (Brusal, 2010; Hemmingsen and Rae, 2001; Yazachew, 2013) Attempt have also been made to examine the self-efficacy in relation to academic achievement. Some researchers (Woolfolk, 2007; Wolf, 2008; Ates, Ates and Alev, 2011; Lisa, Ellen and John, 2011) found strong and direct effect of academic achievement. (Ozgen Korkmaz, 2013) Gender and class level do not differentiate prospective teachers’ self-efficacy perceptions on programming.
Self-Esteem

Some research has been reported on the relationship between self-esteem and academic achievement among the students. (Mefteh, 2002; PourSina, 2003; Emamzadeh, 2004) did a research in order to compare the social skills and self-esteem and academic achievement. (Amini, 2004) conducted a research in order to study the role of self efficiency, self regular and self-esteem in high school students’ academic achievement. (Zeinvand, 2006) studied the relation between self-esteem, social support and student’s educational progression. (Chopra and Sahoo, 2006) students are having positive and balanced self-esteem in comparison to those students whose parents are less involved. (Furst, 2006) reported that higher self-esteem has not only positive effects in the present, but could also have positive effects for the child’s perception for the future. (Lentini and Knox, 2008) several meta analyses have found that personal benefits include items such as: higher self-esteem, self awareness, self-efficacy, self control. (Pullmann and Allik, 2008) there are some probable lines of description why low general self-esteem does not essentially signal a poor academic achievement. (Shobhna Joshi and Rekha Srivastava, 2009) to examine the gender differences in self-esteem and academic achievement. Boys would score significant 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. (Habibollah Naderi, Rohani Abdullah, Tengku Aizan, Jamaluddin Sharir, and Kumar, 2009; Nicole Martins and Kristen Harrison 2011) study examined self-esteem, gender and academic achievement and a significant difference between gender and self-esteem was observed. (Elan, Chavous, Jagers and Sellers, 2013) results also suggested strong, positive racial group identification supports psychologically adaptive connections between self-esteem and achievement.

Thinking Styles

Thinking styles have been investigated in relation to personality traits, gender and academic achievement. (Zhang, 2000) inquired in to the relationship between thinking style and personality types. (Zhang, 2001) studied the thinking style of secondary school students and found that thinking styles statistically predicted
academic achievement beyond self related abilities. (Bernardo, Zhang and Calluing, 2002; Aaron and Lynn, 2012) studied the thinking style and academic achievement. (Maree and Boer, 2003) studied the relationship off thinking style preference and language proficiency. (Zhang, 2004) undertook a study on university student preferred teaching style and their conception of effecting teachers. (Park, Park, and Choes, 2005) investigated the thinking styles of gifted students. (Richmond and Liu, 2006) evaluated the thinking styles education courses. (Albaili, 2007) examined the differences in thinking styles among low, average, and high achieving college students. (Sladek, Philips and Bond, 2008) conducted a study on thinking styles and doctors’ knowledge and behaviours relating to the acute coronary syndromes guidelines. (Castro and Bauml, 2009) sought to investigate the circumstances which enables career switches to move from merely thinking about teaching to actually becoming a teacher. (Zhang, 2010) research examines the roles of thinking styles in learning and achievement. (Saxena and Aggarwal, 2011) find out the prevalent thinking styles among prospective teachers and thinking styles significantly affected their teaching. (Sharma and Neetu, 2011) concluded that male and female secondary school students are not different in respect to their academic achievement whereas they are different in respect to their learning-thinking style. (Farrokhlagha and Zahra, 2012) the study pursued whether thinking styles could act as the predictors of meta-cognition. (Turki, 2012) the variable of gender in all the styles except the legislative and judicial style, the differences came to the favor of males. The differences of the executive style came to the favor of females. (Jieqiong and Zhang, 2013) environment played an important role in students’ thinking styles.

Decision Making Styles

Decision making styles have been investigated in relation to vocational decision making behavior, gender and academic achievement. (Scott and Bruce, 1995) found that internally controlled individual were more likely to employ a rational decision making style and less likely to making style and less likely to employ an avoidance decision making style than the externally controlled individual. (Mitchell and Walsh, 2004) suggested male and female want difference products and they are likely to have different ways of thinking about obtaining
these. This study further an understanding of how gender affects consumers approaches to decision making. (Cherubini, 2008) studied that professional values and ethics are central agencies innately connected to the teaching. (Pop and Turner, 2009) explored the relationships of pre-service teachers’ levels of commitment to teaching as a career. (Rots, Aelterman, Vlerick and Vermeulen, 2010) conducted two wave survey study aimed at testing a hypothetical model of teacher education graduates’ decisions about whether or not to take a teaching position upon graduation. (Duze, 2011) showed that students and teachers, irrespective of sex, indicated alike a low level of participation in administrative creative decisions which influenced their attitude to school work and school internal discipline. (Geoffrey Liu, 2010) attempts to identify and establish spontaneous group decision making in collaborative learning. (Ahmed, Hasnain and Venkatesan, 2012) examine the relation of personality and cognitive styles with the decision-making style. (Rana, Arfan and Majid, 2012) study determines that emotional intelligence moderates the relationship among decision making styles and organizational performance. Yasemin and Thomas (2013) on pre-service teachers’ interaction with decision tasks and whether decision related measures (task difficulty, mental effort, decision making performance) were associated with the differences in student characteristics (decision making styles, self-efficacy, confidence).

**Academic Achievement**

Academic achievement has been investigated in relation to classroom factors, family environment, home adjustment, teaching efficacy by researchers. (Avinashilangam, Vijaya and Upanaya, 2001) found that classroom factors play a major role in affecting the student’s academic performance. (Burchinal, Pelsner, Leing, Robert and Howes, 2002) found that children tended to show better academic scales across time if their parents have more education. (Capara, Barabaranelli., Pastoreli, Bandura, Zimbardo, 2002; Rani, 2003) studied the impact of home environment on academic achievement and educational aspirations of college students. (Chaudhary, 2004) found that academic achievement was associated with intelligence. (Rani and Latha, 2005; Ahuja and Goyal, 2006) in their study aimed to investigate the relationship between family environment, home adjustment and academic achievement in adolescents. (Dhanya, Mary, and Vijay.
2007) found that there is significant relationship between self acceptance and academic achievement. (Carroll, Houghton, Wood, Unsworth, Hattie, Gordon and Bower, 2008) the present research investigated the structural relations among self-efficacy, academic aspirations and delinquency, on the academic achievement. (Litmanen, Hirsto, Lonka, Schmidt, Zdzinski, and Ballard, 2010) results showed that students who perceived progress were capable and had intrinsic reasons for their goals advanced more rapidly in their studies. (Dahar, 2011) conducted a study to find out the impact of teacher quality on the academic achievement.

Thus it is abundantly clear from the foregoing discussion that self-efficacy, self-esteem, thinking style and decision making style have been studied by some researches in relation to gender and academic achievement. However no researches seems to have made any attempt to investigate the joint effect of gender and academic achievement with references to self-efficacy, self-esteem, thinking style and decision making style of prospective teachers which all among the major objective of the present investigation.