CHAPTER II
REVIEW OF RELATED LITERATURE
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2.1 Introduction:

Human being is such animals who can take advantage of the knowledge and findings of the previous generations as well as from the surroundings. Whatever has been done earlier may prove to be beneficial to the coming generations or the present generation.

Scott and Wortheimor (1932) have stated that review of related literature may serve to avoid unnecessary duplication and may help to make progress towards the solution of new problems. According to Borg and Gill (1971) “the literature in any field forms the foundation upon which all future work will be built. If we fail to build the foundation or knowledge provided by the review of literature our work is likely to be shallow and naive and will often duplicate work that has already been done better by someone else”.

Vockell (1983) pointed out the following major purpose of reviewing of research literature (a) the main purpose of review is to put the hypotheses to be examined the research report into its proper context (b) Secondary purpose are to provide readers with guidelines regarding where they can look to find more information and to establish the authors credential by letting readers know that research is aware of that has been going on with regard to the current and related topics.

Good, Barr and Scates (1941) have mentioned the following purposes of related research:

- To show whether the evidence already available solves the problems adequately without further investigations and thus to avoid the risk of duplication.
- To provide ideas, theories, explanations or hypotheses and variables in formulating the problem.
- To suggest methods of research appropriate to the problem.
- To locate comparative data useful in the interpretation of results.
- To contribute to the general scholarship of the investigator.
2.2 Importance of Review of Literature:
1. It shares with the results of other studies that are closely related to the study being reported.
2. It relates a study to the larger, on-going dialogue in the literature about a topic, filling in gaps and extending prior studies.
3. It helps to identify the inadequacies (in terms of coverage and methodology) of the earlier studies.
4. It provides a framework for establishing the importance of the study, as well benchmark for comparing the results with other findings.

In view of importance of review of related research in the conduct of scientific study, the present investigator made an attempt to review the related research. The present chapter thus provides a critical account of the studies conducted in foreign countries and in India on the theme of Thinking Style, Learning Style, Self-Efficacy, Emotional Intelligence, Achievement-Motivation and Attitude Towards Teaching.

2.3 Research Studies Conducted on Thinking Style in Abroad:
This section presents review of related studies conducted in foreign on Thinking Style. These were further analyzed in terms of determinants of Thinking Style and effects of Thinking Style.

2.3.1 Determinants of Thinking Style:
For the sake of systematic analysis determinants of Thinking Styles were divided into two categories viz. Psychological factors and Background factors.

2.3.1.1 Psychological Factors As Determinants of Thinking Style:
From the scrutiny of studies it was found that Thinking Styles have been studied in context of number of variables.

2.3.1.1 (a) Thinking Style and Self-Esteem:  
Persinger and Makarec (1991) reported that right hemispheric style of thinking displayed the lowest self-esteem on both male and female groups of people with great left hemispheric display and elevated sense of self-esteem.

Zhang (2001) conducted a study on Thinking Style of University students of Hong Kong University. The first objective was to examine the relationship between Thinking Style and self-esteem. The second objective was to investigate the relationship of the participants, extracurricular experiences to both Thinking Styles and self-esteem. Thinking Style inventory and self-esteem inventory of Cooper Smith
and a Questionnaire design to elicit both personal and situational characteristics were administered on the subjects. From the analysis of the data it was found that Thinking Style and self-esteem were statistically related. Further both Thinking Style and self-esteem were statistically related to participants’ extracurricular experiences.

2.3.1.1 (b) Thinking Style and Creativity:

Mitchell (1988) reported that hemispheric styles of thinking and creative measurement were significantly related. More creative students tended to have higher level of right hemispheric style.

Sabaty and Davis (1989) conducted a study to explore the relationship between creativity and right and integrated Thinking Styles. The results indicated that creativity scores were positively correlated with right thinking scores and negatively correlated with left hemispheric scores.

2.3.1.1 (c) Thinking Style and Personality:

Pacini and Epstein (1999) studied the relationship between Thinking Styles and personality traits. It was found that a rational Thinking Style was inversely related to neuroticism and conservatism and strongly related to ego strength, openness and conscientiousness. Zhang (1999) found that participants Thinking Styles were different by age at university level.

Zhang (2000) inquired into the relationship between Thinking Styles and personality types in the context of Sternberg’s theory of mental self-government and Holland’s theory of personality types. A major finding was that Thinking Styles and personality overlap to a degree.

Zang and Huang (2001) investigated the relationship between Thinking Styles and the big five personality dimensions. It was found that Thinking Styles and personality dimensions overlap to a degree. As predicted, the more creativity generating and more complex Thinking Styles was related to the extraversion and openness personality dimensions, and the more norm favoring and simplistic Thinking Styles were related to neuroticism.

Fjell and Walhoved (2004) explored Thinking Styles in relation to personality traits. He was unable to find out the inter correlation between NEO-PI-R dimensions and TSI scales factors.
2.3.1.1 (d) Thinking Style and Perception:

Vingiano (1989) found that students with left hemispheric style viewed themselves in a positive light, while right hemispheric style of thinking groups were negative in their perception.

Cheng et al. (2001) studied Teachers and Students' Thinking Styles and their Interaction of Taiwan Primary School. He concluded that Teachers Thinking Styles had significant correlation with students' Thinking Styles. Matching of teacher-student's Thinking Styles had significant correlation with learning perception satisfaction and achievement. Students' Thinking Styles are more inclined to legislative global, liberal, and conservative style in pre-test than in post-test. Teacher's background had no canonical correlation with Teachers Thinking Styles. Teacher's legislative, executive and liberal Thinking Styles had significant effects on students' Thinking Styles.

2.3.1.1 (e) Thinking Style and Critical Thinking Dispositions:

Zhang (2002) investigated the nature of Thinking Styles with regard to the theory of mental self-government. Results from convergent statistical analysis procedure indicated that Thinking Styles and modes of thinking share certain common variances in the data. It was evident that the more creativity generating and more complex Thinking Styles are conforming and simplistic Thinking Styles are significantly related to an analytic mode of thinking. Furthermore, multiple regression analysis showed that both Thinking Styles and modes of thinking statistically contributed to students. Self-reported grade point was explained by their self-related ability scores.

Yeh (2002) investigated the relationship between pre-service teachers' critical thinking dispositions and three Thinking Styles (judicial, legislative and executive) and their behaviour change in a computer simulation. The findings in this study suggest that pre-service teachers with a high level of critical-thinking dispositions and those with judicial or legislative Thinking Styles are analytical and reflective vis.-a – vis. their teaching practice and as a consequence, they experienced great behaviour change, where as those with executive styles did not exhibit significant behaviour change at the end of the simulated teaching.

2.3.1.1 (f) Thinking Style and Anxiety:

Epstein et al. (1996) studied individual differences in intuitive experimental and analytical- rational Thinking Styles. The results reported in the study revealed that
there was negative significant relationship between analytical Thinking Style and depression, anxiety and stress in college life. Intuitive style of thinking was also negatively related to anxiety, stress and depression but the magnitude was smaller than former.

2.3.1.1 (g) Thinking Style and Academic Achievement:

Torrance and Frasier (1983) found that academic performance was negatively related to left hemisphere style of thinking.

Okabayashi and Torrance (1984) reported that under achievers had significantly higher scores on right style of thinking than their high achievers counterparts. The under achievers were also lower than the other two groups on the integrative style.

Grigorenko and Sternberg (1997) studied the relationship of styles of thinking abilities and academic performance. The results of the study show that after controlling for levels of abilities, styles of thinking contribute to prediction of academic performance. The correlation pattern suggest that judicial (+) and executive (-) style showed significant associations with academic performance. The relationship was significant in case of former two cases. They further found that students’ styles of thinking did not vary across sex variables. Both male and female students had almost similar Thinking Styles.

Sternberg (1997) investigated whether students do better in classrooms where their styles match rather than mismatch the styles of their teachers? It was noted that students performed better and were positively evaluated by the teachers when the students’ styles matched rather than mismatched the style of their teachers. In other words, the students performed better when they were more like their teachers stylistically, independent of actual level of achievement.

Sternberg (1997) observed that in public school both legislative and executive styles significantly predicted Academic Achievement (correlation of 0.36 and 0.29) suggesting different style was also significantly related to academic (0.29). In academically oriented private school, significant predictors of Academic Achievement were the judicial style (0.56), the liberal style (0.58) and the oligarchic style (0.55). In private school emphasizing emotional education, significant predictors were the legislative style (0.52) the global style (0.42) the liberal style (0.44), the conservative style in the negative direction (-0.38) and the hierarchic style (0.48). In the private catholic school significant predictors of achievement were the executive
style (0.51), the local style (0.39) the liberal style in the negative direction (-0.42), the conservative style (0.49) and the hierarchic style (0.51).

**Zhang and Sternberg (1998)** conducted a study to explore the relationship of Thinking Style abilities and Academic Achievement among Hong-Kong university students. The data analysis revealed that the Thinking Styles that tended to be positively associated with A-level achievement tests were the one that were conservative, hierarchic and internal. But legislative, liberal and external tended to be negatively associated with students' Academic Achievement. It was also noted that global Thinking Style was significantly and positively associated with academic scores whereas the local Thinking Style was significantly and negatively associated with Academic Achievement scores. Multiple regression analysis showed that Thinking Styles served as predictors of Academic Achievement over and above abilities.

**Zhang (2001)** conducted a study to identify individual differences in Academic Achievement attributable to Thinking Styles over and above what can be explained by self-rated abilities. The findings indicated that students rated their own analytical, creative and practical abilities on 10 point scale based on Sternberg triarchic theory of human intelligence. Participant’s Academic Achievement scores were also used. The prediction that Thinking Styles statistically predict academic styles was related differently in two groups Hong Kong and Mainland China. For Hong Kong sample, external Thinking Style was negatively correlated with achievement in physics accounting for 13% of the variance beyond self-rated abilities. The internal style was related to use of English, whereas, local style was negatively related to achievement in English students achievement in Chinese language was negatively related to judicial and legislative Thinking Styles but was positively related to hierarchical Thinking Styles. Three styles accounted for 14% of the variance in data. The liberal style was negatively related to students’ achievement in Geography, accounting for 6% of the variance beyond self-ratio abilities.

**Zhang (2001)** studied the Thinking Styles of secondary school students and found that Thinking Styles statistically predicted Academic Achievement beyond self-rated abilities. Conservative, executive and hierarchical were positively related to achievement. Legislative and liberal Thinking Styles were found to be negatively related to achievement.
Bernardo, Zang and Callueng (2002) studied the Thinking Style and Academic Achievement among Filipine students with the objective to determine whether the precepts of Sternberg’s (1988, 1997) theory of mental self-Government apply to non-western culture. Correlation analysis between Thinking Style and grade point average showed that Thinking Styles are related to Academic Achievement.

Albaili (2006) reported that certain Thinking Styles could be used as predictors of student’s Academic Achievement and performance.

2.3.1.1(h) Thinking Style and Socio-Economic status:
Sternberg and Grigorenko (1995) found that styles of thinking related to socio-economic status on the basis of paternal education and birth order. Socio-economic status (based on fathers’ education) found to be significantly related to executive style, judicial styles and conservative style. It had positive relation with legislative style and hierarchical style. Fathers’ occupational level was also found to negatively relate to judicial, local conservative and oligarchic styles of thinking.

Sternberg (1997) reported that socio-economic level related negatively to the judicial, local, conservative and oligarchic style. In other words students belonging to lower SES were found higher than students belonging to higher SES on above mentioned styles of thinking. The results are consistent with a notion that greater authoritarianism is found in the individuals of lower socio-economic class. SES (based on father’s education) comes to be related to executive style, judicial style, and conservative style. It had positive relation with legislative style and hierarchical style. Fathers’ occupational level has also found to be negatively related to judicial local, conservative and oligarchic styles of thinking.

2.3.1.1(i) Thinking Style and Teaching Style:
Zang (2004) undertook a study on university students preferred teaching styles and their conceptions of effecting teachers. The results indicated that even after age, gender, academic discipline were controlled; particular Thinking Styles predisposed students to own Thinking Styles. Result also indicated that students Thinking Styles made a difference in their conceptions of effective teachers.

2.3.1.1(j) Thinking Style and Vocational purpose:
Zhang (2004) designed a study to predict vocational purpose from Thinking Style of university students. Results indicated that Thinking Styles contributed to vocational purpose beyond self-rated abilities. Specifically, the more creativity-generating and complex Thinking Styles tended to contribute negatively to vocational purpose.
2.3.1.1(k) Thinking Style and Language proficiency:

*Maree and Boer (2003)* studied the relationship of Thinking Style preferences and language proficiency for South African Students whose native languages differ. Scores indicated a range of Thinking Style preferences but the group’s overall mean scores represented detail-oriented and feeling-based modes of thinking processes.

2.3.1.1(l) Thinking Style and Teacher Education:

*Zhang and Sachs (1997)* observed that higher-class students (research students) tend to employ external Thinking Style were more than the non-research students do. B.Ed. students were more likely to employ monarchic and local Thinking Styles than students from higher classes. Further, former scored lower on global style than the later. They further reported that men tended to be more global in their style of thinking than women.

2.3.1.2 Background Factors As Determinants of Thinking Style:

From the analysis of studies it became apparent that a number of background factors also play a significant role in the shaping of Thinking Styles.

2.3.1.2(a) Thinking Style and Gender:

*William (1981) and Allioti (1981)* reported that both male and female at high school level preferred integrated styles and male preferred right hemispheric style.

*Gilliagan (1982)* observed that stereotypes about differences in Thinking Styles associated with gender are widely held in western society. Rational thinking/logical thinking is associated with masculinity whereas intuitive/feeling thinking is associated with femininity.

*Soliman (1989)* reported that males scored significantly higher than females on the right hemispheric style. Further, male scored significantly higher than female on the left hemispheric style. Also, female scored significantly higher than male on the integrated style of thinking.

*Hebenchtet al. (1990)* did not report any significant differences in styles of thinking of male and female students.

*Cicchetti (1991)* reported that significant differences were found between the brain dominance mean scores for male and female leaders with each group showing a strong preference for left and right hemispheric respectively.

*Shaywitzet al. (1995) and Gur (1995)* have shown that male and female use different areas of brain when accomplishing the similar tasks. This and older studies further indicate that more female are left hemispheric dominant and more male are
right hemispheric dominant while no one knows for sure why this is so, there are several theories that attempt to explain these results.

**Saleh (1997)** found that significant gender difference was existed on the basis of gender. Male learned more towards left brain dominating style of thinking than female.

**Weng (1999)** undertook an investigation to make a study of teacher’s and student’s Thinking Styles and their interaction in instruction. The conclusions drawn from the analysis were as follows:-

In case of Teacher 1) there were significant differences between male and female in legislative, global, liberal, local, conservative Thinking Styles. 2) There were significant differences between high, mid and low age groups in executive, local conservative Thinking Styles. 3) There were significant differences between high, mid and low year’s groups in conservative Thinking Styles, and in case of students. 1) There were significant differences between male and female in legislative executive judicial, global Thinking Styles. 2) Birth order had no significant differences with Thinking Styles. 3) There were significant differences between high, mid and low mother’s education in judicial, global of Thinking Styles. Other results were 1) Executive Thinking Styles have significant correlation with achievement. 2) Teacher’s Thinking Styles had no significant correlation with student’s Thinking Styles.

**Cillers and Sternberg (2001)** found that female university students were found higher than male on executive Thinking Style. No other differences were recorded. However, when data were grouped according to variables of gender and language, it was found that female had pattern executive, hierarchic, global and conservative and males had pattern legislative, hierarchic, global, internal and conservative.

**Chao and Huang (2002)** studied Thinking Styles of school teachers and university students in mathematics using the enquiry mode questionnaire by Harrison and Bramson. The multivariate analysis of variance showed that the 21 female teachers and college students scored as more idealistic than their 12 male peers. There was also a significant group by sex interaction, which indicated that the female college students preferred the analyst Thinking Styles frequently than their male peers, whereas, the male teachers preferred the analyst style more frequently than the
female teachers. On the whole, the most preferred Thinking Style was the analyst style and the least preferred one was the synthesist style.

2.3.1.2 (b) Thinking Style and Age:

Chou (2000) investigated the Thinking Styles of teachers and students in junior high schools by using Sternberg’s theoretical framework of Thinking Styles. The results indicated: A) among the 5 background variables in teachers Thinking Styles, both parents education and teaching subjects did not show significant relations with any of the 7 teachers Thinking Styles, but the other 3 variables (i.e. gender, age, teaching experience in terms of years) did, B) among the 3 background variables involved in students Thinking Styles, parents education showed no significant relations with any of the 13 students Thinking Styles, but gender and birth order did, C) teachers Thinking Styles were significantly related with their background variables and teaching practices, D) no significant relations between teachers and students Thinking Styles were found, nor were the similarities of teachers and students Thinking Styles on students satisfaction of instructional practices and their academic. E) Among the 7 kinds of teaching practices, the developmental method showed significant relations with 3 types of students Thinking Styles including legislative, external, and liberal.

2.3.1.2 (c) Thinking Style and Teaching Experience:

Sternberg and Grigorenko (1995) reported a significant relationship between teaching styles and grade taught, length of teaching experience and subject area taught specifically, teachers teaching at lower grade levels were more legislative than teachers teaching higher grade levels; complementarily, teachers teaching at lower grade levels were less executive than teachers at higher grade levels. It was shown that teachers with more teaching experience were more executive, local and conservative than were those teachers with less teaching experience. Furthermore, it was found that humanities teachers were more liberal than were science teachers.

Zhang and Sternberg (2001) investigated the relationship between Thinking Styles and teacher's characteristics. The results of the study showed that the TSQT is a reliable and valid inventory for assessing the Thinking Styles of Primary and Secondary school in service teachers in Hong Kong. Cronbach’s alphas range from .58 to .75 with a mean of .68 and a median of .66. A principal exist factor analysis followed by an oblique rotational resulted in two factors that accounted for 73.8% of the variance in the data. Moreover, results from stepwise multiple regression
procedures indicated that six characteristics of teachers were significantly correlated with the Thinking Styles specified by the theory of mental self-government.

2.3.1.2 (d) Thinking Style and Levels of Institutions:

Taggart (1984) asserted that left hemispheric Thinking Style predominate the schools and right Thinking Style predominates the college.

2.3.1.2 (e) Thinking Style and Subject/Stream/Faculty:

Silbey (1980) in a study of graduate and undergraduate students in a school business and observed that as a group they scored significantly lower on the right hemispheric style of thinking and higher on left hemispheric style of thinking than the national norms. Students in science and engineering fields tended to possess left hemispheric style of thinking whereas students measuring in arts, literature education, nursing, and communication fields tended to possess right brain dominant style.

Black (1983) found that individuals enrolled in particular major landscape architecture, interior design and art education, tend to possess particular style of thinking.

Agor (1983) investigated Thinking Styles of member of American society of public administration and found the dominant style of all government managers as integrative style of thinking.

Katz (1983) explored styles of thinking of architects, scientists and mathematician. Analysis of data revealed that involvement of both styles-right and left hemispheric styles but each profession demanded a significant contribution from the dominant hemispheric style of thinking with additional input provided by its complement.

Lash (1983) found students of computer programming had left hemispheric style of thinking.

Bruvold, Parlette et al. (1983) found that personnel workers were highest on the pragmatist style and the lowest on analysist style. Administrators were highest on the synthesist style. Insurance staff was quite higher on pragmatist style and lowest on the analysist. Scientists secured highest on synthesist and idealist styles and lowest on realist. Social workers were highest on idealist and lowest on analysist style.

McBratney (1983) observed that students receiving right brain instruction scored significantly higher on language subject of the CTBS.

Grun (1986) observed that certain styles of thinking were found to be associated with specific academic major.
Coulson and Strickland (1986) found significant differences in styles of thinking of chief executive officers and superintendents of school. Chief executive officers were described as cerebral right thinkers and superintendents as left thinkers.

Keinhol and Hritzuk (1986) studied Thinking Styles of architecture and medical students whose scores were significantly different. The students preferred the idealist Thinking Style while the medical students’ realists Thinking Style.

Bruno (1988) observed that data yielded significant differences in mathematics achievements when students were matched/mismatched with instrumental strategy congruent/incongruent with their hemispheric styles. Students achieved significantly higher when taught with complementary instructional strategies.

Monfort (1990) reported that students who had chosen major could be differentiated significantly by their scores on Thinking Styles. Students majoring in accounting, management, finance, and computer science, nursing and elementary education scored high on left hemisphere style of thinking. Conversely students who are majoring in interior design, music, art and architecture had higher scores in right hemisphere style of thinking. Students who scored a right brain Thinking Style founded to choose major who required spatial/temporal, visualization rather majors which were dependent on language base.

Lavach (1991) reported that humanities subject depended on a more diffuse and perhaps divergent Thinking Style. They exhibited right hemispheric styles whereas natural science subjects appear to prefer a more integrated of left hemispheric style. The similar preference of styles of thinking was exhibited by social science students.

Sternberg and Grigorenko (1993) studied the Thinking Styles of the gifted. The findings indicated that the correlation of the measure of mental self-government with IQ. Three styles correlated significantly with scholastic aptitude of math, but not with SAT verbal. There was no difference between gifted and non-gifted children. However, on requiring children actually to do tasks, the gifted children proved to be more legislative, judicial and liberal than non-gifted children, but less executive.

Huang and Sisco (1994) reported that on some of Thinking Styles differences were found among three major students’ social sciences or humanities and natural sciences was more idealist than the engineering students. The natural and engineering
students were more analytical and social sciences or humanities students and the engineering major was more realist than those from social science or humanities and natural science.

Sternberg and Grigorenko (1995) reported a significant effect of discipline/subject on Thinking Styles. Humanities teachers were found more liberal than science teachers and science teachers were found more local than humanities teachers.

Saleh (1997) reported that there were significant effect of relationship between brain hemispheric style and academic major students majoring in business, science and engineering field tended to possess left hemispheric style of thinking whereas students measuring in arts, literature, education, nursing, law and communication field to possess right brain dominant styles.

Sachs (1997) found that students of natural sciences and technological subjects had more global Thinking Style than those in areas of social science and humanities.

Sternberg (1997) reported that the legislative style showed significant correlation with the final examination (0.14) and with an independent project (0.17). The judicial style showed significant correlation with the final exam (0.18) and the independent project (0.15), as well as with quality of homework (0.21). The executive style showed a negative correlation with evaluation of the independent project (0.18).

Cheng and Chang (2000) examined the Thinking Styles of junior high school principals through the revised version of Thinking Style questionnaire Sternberg and Grigorenko, (1995) found that the Thinking Styles of junior high schools principals in Taiwan are in general more executive on function, more hierarchy on form, more on global level, more external on scope, more liberal on learning. As to the Gender factor, male principals’ scores higher on local Thinking Style than female principals and to the area of serving: principals in urban areas scores higher on legislative and internal Thinking Styles than those in rural area. There is no subject difference on the other categories.

2.3.1.2 (f) Thinking Style and Ethnicity/Race:
Huang and Sisco (1994) in the same investigation studied Thinking Styles of Chinese and American students in higher education. The analysis showed that the Chinese students’ scores as more pragmatic than American groups and Chinese men and American women scored as more idealist than Chinese women and American men.
Bogen (1995) have concluded that Afro-American, Native American and Japanese appear more right hemispheric in their style of thinking than Euro-American Caucasians.

2.3.1.2(g) Thinking Style and Type of Institutions:
Sternberg (1997) reported that styles of thinking differed significantly depending upon the type of school where the teachers were serving. The data analysis revealed that with regard to the legislature style the teachers in the private school emphasizing emotional education showed the highest mean. The lowest mean was in the public high school with regard to the executive style, the highest mean was in the elementary secondary catholic school. The lowest mean was in the private school emphasizing emotional educational with regard to judicial style. The highest mean was in the academically oriented, prestigious private school. The lowest mean was in the private school emphasizing emotional education.

2.4 Research Studies Conducted on Learning Style in Abroad:
This section presents review of related studies conducted in foreign on Learning Style. These were further analyzed in terms of determinants of Learning Style and effects of Learning Style.

2.4.1 Determinants of Learning Style: For the sake of systematic analysis determinants of Learning Styles were divided into two categories viz. Psychological factors and Background factors.

2.4.1.1 Psychological Factors As Determinants of Learning Style:
From the scrutiny of studies it was found that Learning Style have been studied in context of number of variables.

2.4.1.1 (a) Learning Style and Intelligence:
Comwell and Mafredo (1994) found that out of four primary Learning Styles doing, thinking, watching and feeling on Kolb's LSI thinking was positively related to mental ability measure.

Clocklin (1995) took a study to determine if a relationship existed between the manner in which nursing students preferred to learn and their ability to think critically. The findings revealed that a significant relationship appeared to exist between critical thinking skills and preferred Learning Styles. Students converges as diverges had lower mean composite across on the WGCTA. The convergers students had the higher mean scores than the divegers.
Fuji (1996) explored potential utility of understanding a brain injured Individual’s premorbid Learning Style in conceptualizing process underlying cognitive deficits. The result indicated converges and diverges Learning Styles on Kolb’s LSI significantly correlation with a factor of stronger verbal versus non-verbal reasoning.

Nathan (1997) explored the association between critical thinking and Learning Styles of nursing students. No significant relationship between WGCTA and Learning Style was observed from the findings.

Whitcomp (1999) attempted to find out the link between student cognitive developments to Learning Styles preference. The results showed that significant relationship existed between cognitive developments and Learning Style preference with dualistic students adopting Learning Style characterized by higher levels of reflection over action and more relativistic students favoring activity over reflection. Additionally, relativistic showed a preference for greater activeness in their learning.

Thompson (2001) attempted to discover the relationship between critical thinking and Learning Styles of students. The findings showed that abstract conceptualization was the only relation to students’ raw scores on WGCTA or the four Learning Styles on the LSI. Assimilators (a combination of abstract conceptualization and reflective observation) and Converges (a combination of abstract conceptualization and active experimentation) demonstrated a significant relationship to the ability to think critically.

2.4.1.1 (b) Learning Style and Creativity:

Hamburg (1964) concluded that significant positive relation existed between creativity and preference for open executes learning.

Torrance (1976) found that creative students exhibited different Learning Styles than less creative students.

2.4.1.1 (c) Learning Style and Personality:

West (1982) in a construct validity study investigated the relationship between leaning styles and personality characteristics. He found no significant relationship between Learning Styles and personality traits. Survey of Interpersonal values and the Omnibus Personality inventory of the seven factors considered significant and interpretable (e.g. social acceptability, extraversion, introversion, estheticism) from a
factor analysis of the MBTI, SIV, and OPI. Only one factor (social acceptability) was significant with one Learning Style.

**Petty (1985)** conducted a study to determine whether an identifiable profile relating personality type, Learning Style and leadership exists for college student leaders. Findings indicated that as a total group, students' personality types tended to be extroverted, both sensing and intuitive thinking and judgmental with 32% identified as accommodators, the highest Learning Style inventory score was reported as abstract conceptualizers.

**Hinkle (1986)** reported that Learning Style preferences and personality types were significantly related in the following ways: Concrete experience to extraversion, reflective observation to introversion, active experiments to extraversion, active experimentation to perceiving.

**Gilchrist (1987)** explored the relationship between personality orientations and Learning Style of middle aged adults. The results revealed that no meaningful association existed between personality orientations and Learning Styles of middle aged adults.

**Donoghue (1994)** determined relationship between personality type and Learning Styles. No significant relationship was found between the Converge/Diverge styles and the personality preferences of Sensing/Intuition, however, a relationship was shown to exist between Converge/Diverge styles and the combination of Intuition Perceiving (I/P) and Sensing-Judging (S/J).

**Fagerholm (1996)** explored the nexus between learning style and personality type among adults. The results of the study indicated the strength of the relationship between personality type and Learning Style varied across learning style by personality type and gender. The dominance and influence types each differed from the conscientious type for the Learning Style processing dimension in that the dominance and influence types preferred active experimentation and the conscientious type preferred reflective observations.

**Harbour (1997)** studied the relationship between personality type and Learning Styles of candidates in the external doctor of pharmacy programme. The results disclosed that no significant correlations by personality type and Learning Styles on Kolb's LSI were noted.

**Golden (2001)** made a canonical analysis of extroverting/introverting personality traits and reflective observation/active experimentation learning modes.
The Learning Preference Survey developed specifically for this study, provided the third measure of student introverted and extroverted learning orientation. The results revealed that low Personality Profiler on Facet Scales.

2.4.1.1 (d) Learning Style and Locus of Control:

Stewart (1979) studied the Learning Styles of gifted/talented students. The results of the study revealed that locus of control significantly affect Learning Style preferences.

Murphy (1980) found that there were relationship between Learning Style, perceptual style and locus of control depending upon age, position, specialty and degree.

Pandian (1983) reported that Learning Style of college students was found to be associated with their locus of control.

Meier, McCarthy and Schmeck (1984) reported that there were positive relationship between Deep Processing style and internal locus of control dimension.

Biggs (1985) concluded that individual differences variables associated with the development of a deep approach were not intelligence purse but an internal locus of control. He found that deep processor’s most distinctive feature was the internal locus of control.

Smalarz (1988) undertook a study to determine whether differences existed in Learning Style and locus of control of adult women enrolled in two different programmes in an institution of higher education. The findings indicated that a marginal relationship seemed to exist between internal locus of control and the assimilator style of Kolb’s LSI.

Murphy (1988) determined the relationship between field dependence/independence, Learning Styles and locus of control among Registered Nurses. The results showed that there were relationship between Learning Style, and perceptual style and locus of control depending upon age, position, specialty, and degree.

Diskowski (1991) explored the nature and degree of the relationship among principal’s locus of control, their Learning Styles and school effectiveness. The finding revealed that no statistically significant relationship was found between locus of control and Learning Style. However, correlation demonstrating a trend was found between principals with low Rotter’s Scores (internal orientation) and high abstract/sequential scores.
Culstion (1993) ascertained the impact of diagnosis and interpretation of Learning Style upon college students study orientation and feelings of powerlessness. The results indicated that significant difference for the business group was revealed in powerlessness, implying the relationship between Learning Style and locus of control.

Jonassen and Grabowski (1993) reported that externals were more avoidant and non-participant than internals in their Learning Style.

Schmeck, Geisier-Brenstein and Cercy (1993) studied the Learning Style of undergraduates students enrolled in psychology course. The correctional analysis revealed that through academic self-concept scale and its subscale viz., intrinsic motivation, Self-Efficacy, not-reiterative processing, self-esteem were found to be related to locus of control negatively and significantly, reflecting processing and reiterative processing their sub scale had no relationship with locus of control. Methodical study scale and locus of control yielded positive and significant relationship.

2.4.1.1 (e) Learning Style and Self-Esteem:
Price (1978) explored the relationship between Learning Style and self-concept of the subjects drawn from grades three, six and seven from twelve different schools. Individuals were clustered into two groups, those having a high self-concept (Mean of 159.56) and those having a low-concept (Mean 123.27) with the overall mean of both groups at 142.30. These two groups were compared on each of the twenty four areas of the LSI to determine if a significant relationship between self-concept and how individuals prefers to learn could be found. On this analysis, individuals having a high self-concept preferred quiet liked to study in a warm temperature, where adults and teacher motivated were consistent preferred to learn in several ways, namely by self or with peers, did not have auditory preferences and did not need mobility. In general individuals having a low self-concept preferred to study in a cool, noisy environment where adult or teacher motivated were not consistent preferred not to learn in several ways, and had auditory preferences and showed a need for mobility.

The variables that discriminated most between the two groups were persistence being teacher motivated and need mobility. Individuals with low self-concepts needed more mobility and required noise as well as the preference of adults. In addition, a dimension related to being unsettled, perhaps not wanting to be alone and learning through the auditory senses, seems to characterize individuals having a
low self-concept individual having a high self-concept were persistent, able to stay in one place and had to learn many different ways.

Price, Dunn and Sanders (1979) investigated into the relationship of Learning Style to self-concept. The authors described the differences among student with varied Learning Styles and achievement and self-concept levels.

Grigga and Price (1981) undertook a study to see how self-concept relates to Learning Style in the junior high schools; the findings revealed that there were statistical significant differences between students with high self-concept in comparison to those with a low self-concept on three sub-scales of the Learning Style Inventory. The high self-concept students were more persistent, more responsible and had less need for mobility than the low self-concept student.

Schmeck and Miller (1984) found that students who reported using elaborating processing most frequently were also high on self-esteem measures.

Gadzella, Ginther and Williamson (1986) determined the difference in self-concept between deep and shallow processors. They reported that deep processors were characterized by higher level of self-concept than shallow processors.

McCarthy and Schmeck (1988) reported that student with surface or shallow processing styles had low level of self-esteem as compared to student with deep processing style.

Schmeck, Geisler-Brenstein and Percy (1991) conducted a study to ensure the relationship between self-concept and Learning Styles of 129 American undergraduate students of various academic major obtained from two beginning-level psychology courses from a mid-western university. The findings indicated that the academic self-concept scales showed significant differences between the high and low self-concept groups. All sub-scales appeared to account more or less equality for the overall difference obtained for the deep and elaborate processing sub-scales. No significant differences were observed between high and low self-concept groups on any other scale or sub-scale with the exception of methodical Study Scale.

Lazzeti (1992) examined the relationship between self-esteem and Learning Style preference among selected students in catholic high schools in the archdiocese of New York. Pearson Product Moment Correlation was used to establish the relationship between Learning Style preferences and self-esteem of students. Some Learning Styles were positively correlated with high self-esteem while others were correlated with low self-esteem.
2.4.1.1 (f) Learning Style and Anxiety:

Hinkle (1986) investigated the relationship among Learning Style preferences, personality types and Mathematics anxiety of college students. The findings indicated that Mathematics anxiety was significantly correlated to reflective observation and negatively to concrete experience.

Dwyer (1998) reported that trait/context communication apprehension was significantly related to Learning Styles preferences of woman students. High communication apprehension group of women students preferred a Learning Style of reflective observation and thoughtful evaluation and guided active experimentation and practices.

2.4.1.1 (g) Learning Style and Academic Achievements:

Caskey (1981) reported that grade point average significantly affected cognitive Learning Styles preferences. It was discovered that higher GPAs’ were associated with an abstract and an active Learning Style while subjects with a lower GPAs’ tended to be reflective and concrete learners.

Herrons (1983) conducted a study to determine if there existed significant differences in academic success among the aviation officer candidates with different Learning Styles. The results indicated no significant difference between academic successes among Learning Style groups based on Kolb’s LSI.

Moore (1985) examined the productiveness of academic performance from Learning Styles, psychological type and Learning Style in combination of some other variables. The regression analysis indicated lack of predictive power of reflective observation and abstract conceptualization on Kolb’s Learning Style Inventory for academic performance.

Grun (1986) undertook a study to analyze the relationship of Learning Style and Academic Achievement based on experimental learning theory, conceptual level theory and right left brain hemisphere theory. The results showed that Learning Styles were significantly related to academic performance among education majors. Students having Learning Styles characterized as more theoretical and analytical performed better on abstract exams. Kolb’s Learning Styles accounted for about ten percent of the total variance in students’ performance. However, Learning Styles were unrelated to grade point average.

Hinkle (1986) studied the relationship among Learning Style preferences, personality types and Mathematics anxiety of college students. The result of the study
indicated that inductive (compared to sensing) students had significantly higher course performance scores. Abstract (compared to concrete) oriented students had a significantly higher course performance scores.

Kirk (1986) found that Learning Styles measured through Kolb’s LSI were correlated to grade point average. Accommodators earned the highest score in higher education.

Taylor (1986) explored the relationship of brain dominance and using style preference to student success. The results showed that using style preference measured by Kolb’s Learning Style Inventory did not influence class room success.

Hanier (1987) examined the relation of cognitive and Learning Styles of limited English proficient and English proficient high school students in context of academic performance. The findings indicated a statistically significant relationship between the cognitive style of Limited English proficiency students and measures of academic performance in Mathematics and English proficiency. There was also a significant relationship between reflective observation as a Learning Style dimension and reading achievement.

Chu-Richardson (1988) reported that academically successful and unsuccessful students did not differ significantly on Kolb’s Learning Style Inventory AE-RO subscale. The result lend support the contention that unsuccessful students may have Learning Styles which decreases the stress of academic success.

Relaford (1988) observed that there was a significant difference in grades earned by Learning Style with assimilators and convergers making the best grades.

Banner (1989) conducted a study to determine learning/cognitive styles and learning preferences of students and instructions as related to achievement. The learning/cognitive styles variables, as a group, accounted for a significant come out of variance in predicting student achievement compared to learning preference variables.

Piscopu (1989) conducted an investigation to determine the effect of Learning Style preferences on course performance of non-traditional undergraduate students in computer science programme. The results indicated that difference in course grades was based on Learning Style preferences for p-value of 1.00.

White (1990) investigated the relationship between individual Learning Style and persistence, Academic Achievement and satisfaction in an undergraduate external degree programme. The result indicated that no significant differences were found between Learning Styles measured by Kolb’s LSI and Academic Achievement.
Susabda (1992) reported that Learning Style of the average and below average students tended to be more concretely dimensional while superior students tended to be more abstract in their thinking. It was indicated that under-achievers had different Learning Styles characteristics on Kolb’s LSI than those of high achievers.

Badr (1993) designed a study to determine the predictors of success in self-instructional courses on micro computer application. The results revealed that there were significant difference among the four Learning Styles groups based on Kolb’s LSI. The converger achieved significant higher than assimilators. Accommodator and Diverges fall in between.

Apenahier (1993) reported that although Learning Style on Kolb’s LSI did not significantly influence the success in laboratory science, the difference between convergers and diverges were in the expected direction.

Rolle (1993) reported that majority of the post-secondary vocational students and managers had diverges as a predominant Learning Style on Kolb’s LSI.

Kee (1995) conducted an exploratory study to determine the associations of Learning Style preferences Academic Achievement and academic major in college students. The findings showed that partial support was found for a small but statically significant relationship between Learning Style preference and Academic Achievement. No relationship between Learning Style preferences, first term and fifth term Academic Achievement was found.

Mickens (1995) in a study found that Learning Style had no nursing student and examined the influence of their Learning Style preferences and selected demographic variables on successful completion of the practical nursing education program. This qualitative study revealed that Learning Style preferences had no important impact on Academic Achievement.

Bagdan (1999) examined the effects of leaning styles inventories on achievement gains. The findings indicated that one LSI, diverge was found to be related to undergraduate student with lower GPA.

Jones (2000) reported that there were statistical significant differences in students learning preferences by academic performance.

2.4.1.1 (h) Learning Style and Satisfaction:

Huch (1981) found that those students who had an accommodator Learning Style tended to be satisfied with their program of study. Those students with diverge style were the group indicating most dissatisfaction with their program of study.
2.4.1.1 (i) Learning Style and Learning Environment:

Agee (1989) included that there was no significant relationship between Learning Style and perception of the learning environment.

Okanlawan (1989) reported that some of the learning environments were perceived differently by individuals having four Learning Styles.

Pisarski (1994) reported that no significant relationship was found between styles (on Kolb’s LSI) and perception of higher education environment.

Powe (1996) found on statistical significant difference in Learning Styles based on age variability.

Reistroffer (1997) studied the relationship between individual Learning Style and the career choices among traditional and non-traditional theological students. The results revealed that there was no statistical significant correlation between career choice and Learning Style.

2.4.1.1 (j) Learning Style and Socio-Economic Status:

Caskey (1981) found that higher abstract conceptualization of college students scored significantly higher. Abstract conceptualization scores suggested that lower socio-economic status groups preferred a more concrete Learning Styles on Kolb’s Learning Style Inventory.

2.4.1.1 (k) Learning Style and Teaching Style:

Giunta (1984) studied the relation between learning and teaching styles of teachers. The results indicated that selected differences existed in the Learning Styles of teachers of different disciplines but instructors Learning Style preferences were not related systematically to corresponding teaching styles.

Avery (1985) investigated the effect on 12th grade students’ achievement when teacher styles and student Learning Styles were matched, the results of this study showed that:

1) There was no significant difference in the means for Academic Achievement between the students whose dominant styles match their teachers, and means for Academic Achievement of those students whose dominant style did not match their teacher.

2) There was no significant difference between means of the student dominant styles and the guesses of dominant style as made by their teachers.
3) There was no significant difference between dominant styles of females and that of the males.

4) There was no significance of difference between the means of students whose dominant styles and sex matched that their teachers and those whose dominant style or sex or both did not.

5) There was a significant difference between the academic means of the students whose sex matched that of their teachers and the means of that sex did not.

6) There was not a significant difference on dominant styles of vocational students.

**Bogomir Novak (2001)** studied the “Teacher Learning Style in the function of pupils learning and Thinking Styles in nine-year Primary schools and the results of the research showed that out of nine years schooling, in the last two years, the focus turned from teaching suited best for teacher and content oriented curriculum to teaching suited best for teacher and content oriented curriculum to teaching suited best to pupils interest, experiences and Learning Styles and teaching based on the objectives of the curricula of the subject areas studied. However, not many differences have been observed in learning and Thinking Styles of pupils nine year school”.

**Stulton (2003)** studied the elementary school teacher’s perception and match between the teachers teaching style and students Learning Styles. The questions encompassed teacher knowledge of their students Learning Style, teacher’s selection of their teaching styles, and teacher’s techniques for matching teaching strategies to Learning Styles. The results from this study suggested that flexibility was a means to match teaching styles which was basically congruent to prior research. This research suggested that higher level of motivation, Co-operative and Academic Achievement of effective teachers is useful for their classroom.

2.4.1.1 (1) Learning Styles of Prospective Teachers:

**Knox (1979)** reported that environmental press had an effect on student teachers to cause change in several Learning Style modalities as measured through Canfield’s Learning Style Inventory.

**Phillips (1982)** studied the Learning Style characteristics pre-service education students. The results showed that students of seven teaching specialty areas tended to exhibit different Learning Style preferences. There was marked differences between the older and younger students with respect to learning preferences.
Gade (1982) made a comparison of Learning Style preferences and creative behavior of male and female education students at the university level. The data analysis indicated that sexes did not differ significantly in preferences for the most Learning Style conditions with the exception of goal setting and independence. Individuals with high creativity quotients preferred independence of action and pursuits of own interests more often than those who have low creativity quotients. Higher ranking on exception of performance level were related to creative behavior more often than to the differences between sexes.

Curtis (1983) studied the Learning Style of vocational teacher education students by sex, age and occupation. The finding revealed that there were no differences in dominant Learning Styles of student teachers between the sexes, or a more age groups or occupation groups. But there were differences in the correlations between those who reported a Learning Style that matched with teaching style and those whose Learning Style did not.

Ferris (1984) investigated the effect of teacher – pupil relationship and similarities in teacher and pupil Learning Style on achievement. The results of the study indicated that there was no interaction between teacher-pupil relationship and similarity in Learning Style but it was found that from 2% to 4%, of the variance in achievement was associated with teacher-pupil relationship.

Sales (1985) studied the effect of Learning Style and type of feedback on the achievement of pre-service teachers in a computer based lessons. The analysis did not indicate a significant difference among the treatments, Learning Styles or treatment by Learning Style.

Pumipuntu (1992) reported that no significant relationship was found between age, grade point average on teaching experience and student types of industrial arts teacher, college students and their Learning Styles as measure. However, some relationships were observed between their Learning Styles and problem solving styles.

Garton (1993) found that a low negative, non-significant correlation was found between student teachers preferred Learning Style and problem solving ability when Learning Styles were assessed by Kolb’s inventory of Learning Styles.
2.4.1.2 Background Factors As Determinants of Learning Style:

From the analysis of studies, it became apparent that a number of background factors also play a significant role in the shaping of Learning Style. In the following paragraphs, such factors have been listed along with results.

2.4.1.2 (a) Learning Style and Gender:

Caskey (1981) did not find significant sex difference in Learning Style of community college students as measured by Kolb’s Learning Style Inventory.

Tucker (1983) attempted to determine the significant difference existed in the Learning Style of selected eight grade students using Kolb’s LSI. The data revealed that a significant difference was found between the sexes on AC-CE combination scale. The male showed preference for abstract over concrete abilities while the female showed preferences for concrete over abstract abilities.

Staplin (1984) found significant differences on Learning Style with regard to factors, noise, light, design, presence of an authority figure, teacher motivation, responsibility, tactile and preference for study in the afternoon between male and female students.

Moore (1984) reported that (1) Female to a greater extent than male preferred structure in terms of organization and details in the learning situation. Female wanted to know precisely what was expected in the learning situation but not in the authoritarian manner. (2) Male preferred content that involves practical computational skill in working with things while female preferred conventional activities involving other people. (3) Female differed significantly from male in their preference for learning as opposed to the learning modes of reading iconic or direct experience. (4) Female had a significantly higher expectation of academic success, anticipation (A’s and B’s) while male expected to be average (Cs) and had a significantly higher expectation of failure through unsatisfactory performance (Ds).

Davis (1985) focused upon the study of relationship of personality type and Learning Style. However, the secondary purpose of the study was to determine the relationship, if any of gender and grade level with personality type and Learning Styles. The investigator found that gender was correlated significantly with the LSI element of temperature, design motivation, visual learning, tactile learning, and learning in the afternoon.
Westhafer (1985) designed a study to assess preferred Learning Styles of high school students. Factors examined in this study included gender along with other variables. Analysis of the data revealed that female demonstrate a significantly higher preference for projects, simulation peer teaching, discussion, teaching games, programmed instruction and lecture than male students.

Bishop (1985) investigated Learning Styles of nineteen women in a private liberal arts college. When compared with men and women from other liberal arts colleges, these women were significantly more participative and collaborative and significantly less dependent and avoidant. They were competitive than the men as measured by the Grasha-Reichmann SLSQ. The women scored significantly higher on the concrete experience scale of Kolb’s LSI than the women and men in other liberal arts colleges. They scored significantly lower on the abstract conceptualization scale and higher on the active experimentation scale than did the men.

Rossman (1985) investigated Learning Style characteristics on the basis of gender. Learning Style characteristics were measured by the productivity environment preferences survey. Analysis of variance and simple effects were used to determine whether different Learning Style preferences existed for different sex groups. Scores on some Learning Style elements were found significantly different for male and female college students.

Avery (1985) found that there was no significant difference at the .05 level between the dominant Learning Style of female and male. The finding was based on one hundred and eleven twelfth grade vocational students.

Devenport’s (1985) studied differences of Learning Style related to gender among Wyoming Elderhostel participants. Results of the study indicated that gender was related to Learning Styles in two out of the four components channels. Data indicated that male scored significantly higher on the Abstract Sequential Channel than female and women scored significantly higher on the Abstract Random Channel. However, both sexes scored highest on the concrete sequential channel.

Bishop (1985) studied Learning Styles of women students. The results showed that the women concrete experimental and active experiencing learners with an accommodator mode of learning. Study further revealed that the women scored significantly higher on the concrete experiencing scale of Kolb’s LSI than the woman and men in other liberal arts colleges. They scored significantly lower on the abstract conceptualization scale and higher on active experimentation scale than did the men.
Kirk (1986) conducted a study to assess learning and cognitive development of adult students in higher education setting. The findings disclosed that gender was not significantly related to Learning Style preferences.

Simmons (1986) while investigating the relationship among learning modalities, Academic Achievement, and the sex of sixth grade students found that no significant relationship existed between sex and Learning Style modalities.

Hoflex (1986) ascertained whether adults learn more effectively through a dominant sensory modality across or within subject matter. In this study the investigator observed that dominant mode learning was related to gender.

Grunn (1986) investigated the proposition that whether individuals had distinct Learning Style and these Learning Styles influence academic performance. Kolb’s Learning Style Inventory was used for collection of the data. No significant relationship was found between Learning Style and sex.

Cohen (1986) attempted to find out the relationship between sex and Learning Styles. Two hundred three middle school students participated in the study. The results showed that there was a trend in gender differences in Learning Style with girls preferring a less formal design of learning environment. The girls of the Middle school tended to be more responsible about their school work than the boys and boys tended to be more on mobile factor on their Learning Style than that of the girls.

Diaz (1986) proved into preferred Learning Style of Community College career and transfer students. Based on the results of the study, it was concluded that female students had greater interest than male students for the following areas: qualitative, people and listening. Male students, on the other hand, had greater interest than female students for inanimate.

Larn-Phoon (1987) made a cooperative study of the Learning Styles of South-East Asian and American Caucasian College Students on two seventh day Adventist campuses. The study employed the productivity environmental preferences scale to measure the Learning Styles of the two groups. 309 under-graduated students formed the basis of the sample. The findings indicated that male as compared to female have a higher preferences for noise, tactile learning experience, intake, responsibility and they have a lower preference for learning in several ways, and peer oriented learning and persistence.

Keir (1987) found that no support could be given to the relationship between Learning Style and gender.
Johnson (1989) provided a comparative analysis of the Learning Styles of black and white college's freshmen. The results revealed that female and male were found to differ significantly on the sensing intuition sub-scale of the MBTI with females being more sensing than male.

Miller et al. (1990) conducted a comparative study between male and female using Schmeck's ILP and found significant differences between the genders. In this study it was found that male scored significantly high on deep processing style and female scored significantly higher on methodical style of learning.

Joerger (1992) conducted the research on the Learning Styles of undergraduate college students and their programs of study. The male students who as a group were assimilator, preferred to use their abstract conceptualization orientation to a greater degree than did the females, who as a group were divergers on Kolb's LSI.

Koziminsky and Kaufman (1992) using Schmeck's ILP conducted study on Academic Achievement and individual differences in Learning Styles of Israeli high school students. The findings revealed no significant gender difference in their Learning Styles.

Joerger (1992) reported that male students who as a Group were assimilators preferred to use their abstract conceptualization to a greater degree than did the female who as a Group were divergers. However, the technical college female was accommodators. The male and female technical college and community college instructor were accommodators.

Using Kolb's LSI Lucy (1993) in a study of distance education programme concluded that male subjects consistently preferred on abstract conceptualization learning modality. A concrete experience learning orientation was significantly associated with being female.

McCoun (1993) studied gender differences in Learning Styles of remedial Mathematics students. The results indicated that female scored significantly higher on the reflective observation mode of Kolb's Learning Style Inventory.

McCoun (1993) conducted a study to determine if gender differences in the non-remedial and general population also appeared in the remedial Mathematics population. Gender differences in three areas were investigated: attitudes, spatial visualization ability and Learning Styles. The results showed that females scored significant higher on the reflective observation mode of Kolb’s LSI.
Houston (1993) examined the relationship among Learning Styles, teaching styles, gender and performance in a collage computer science course. Subjects were assigned a Learning Style category according to their score on the Gregorc Style Delineator. The results revealed that the female also tended to be predominately concrete sequential learners which were the Learning Style associated with academic success.

Flores-Feist (1995) reported that there was significant difference on Kolb’s Learning Style between male and female in chemistry.

McKee (1995) in an exploratory study of Learning Styles of college students found that there was statistical significant relationship between Learning Style preference on Kolb’s LSI and gender of students.

Powe (1996) undertook a study to describe the relationship between Learning Styles and demographic characteristics of students’ registered nurse and certified registered nurse instructors. The findings disclosed that no statistically significant relationship was identified between Learning Styles measured by Kolb’s Learning Style Inventory and gender for both the students and instructors.

Harbour (1997) observed that male were more thinking and judging consciousness oriented and female were more balanced evenly the categories except for Learning Styles where the females were dominantly assimilator oriented.

Reistroffer (1997) reported that there was no statistical significant difference in Learning Style score for men and women on Kolb’s Learning Style Inventory.

Gallagher (1998) examined the gender differences in adults and traditional age students Learning Styles at selected universities. Statistically significant differences were found through chi-square analysis in Learning Styles of men and women students.

Picou et al. (1998) examined the Learning Styles of Hispanic students and concluded that males emphasized more abstract/sequential style, whereas females streamed more concrete/randomly.

Whitcomb (1999) in a study found that there were significantly gender differences in Learning Style preferences with men being more abstract, while women preferred more concreteness.

Hansen (2000) reported significant gender difference in Learning Styles. This indicates that the male and female differed significantly on Learning Style preferences of certified athletic trainers. Male certified athletic trainers preferred the
assimilator and converger Learning Styles whereas female certified athletic trainers preferred converger and accommodator Learning Styles. However, there was statistically significant relationship between student athletic trainers’ gender and Learning Styles measured through Kolb’s LSI.

**Williams (2001)** in a study of Learning Styles and Achievement-Motivation of community college students found that there were no significant differences in Learning Styles. Differences were noted, however, in the learning mode characteristics between men and women students.

**Keri (2002)** conducted a study on gender differences in college students using Canfield’s Learning Style Inventory. The findings revealed that female students were relational and more independent learners. More males indicated preference for applied Learning Styles, whereas females preferred abstract learning.

**Clump and Skogsberg (2003)** reported that male students of the university level scored significantly higher on deep processing and significantly low on methodical styles of learning than female counterparts.

### 2.4.1.2 (b) Learning Style and Age:

**Delargy (1961)** investigated the relationship among age, gender and Learning Styles as measured by Kolb’s Learning Style Inventory. Analysis revealed a significant main effect for age on AC scale. The older group was found more abstract conceptualizer than the younger. Significant interaction between age and gender were revealed on RO, AC, AE and AE-RO scales of LSI. Younger females scored higher in active experimentation. Younger males and older females scored higher on reflective observation than younger females and older males. Older females were significantly more abstract than the younger females who scored higher than other group on concrete experience. The higher negative LSI scale score correlations for the older group scores followed Kolb’s predictions and were between CE and AC and between AE and RO with the younger group (<=55 years). The higher negative correlation did not follow Kolb’s predictions. Instead they were between AC and AE and between CE and RO.

**Caskey (1981)** studied the cognitive Learning Styles of community college students using Kolb’s Learning Styles Inventory. The findings revealed that age factor did not differentiate the Learning Styles of such students.

**Phillips (1982)** found that there were marked differences between the older and younger students with respect to learning preferences on Kolb’s LSI.
Rusk (1983) made a comparative study of Learning Style and relation between traditional and non-traditional students at the University of Akron. The result revealed that there was a significant difference in the two groups (25 years of age and students over 50 years of age) on Learning Styles measured through Kolb’s LSI.

Fagerholm (1986) indicated that no age related differences in Kolb’s Learning Style were found.

Grun (1986) observed that some relationship was found between Learning Styles and age of the students.

Kirk (1986) found that age was not found to be related to Learning Style preferences as measured by Kolb’s Learning Style Inventory.

Keir (1987) found that age was not related to Learning Styles of the participants as measured by Kolb’s LSI.

Clere (1995) did not find any significant difference between traditional students (aged 25) and non-tradition students (older than 25) year Learning Style measured through Kolb’s Learning Style Inventory.

Mckee (1995) found that there was statistical significant relationship between age and Learning Style on Kolb’s Learning Styles Inventory.

Gallagher (1998) investigated the differences in Learning Styles measured by Kolb’s LSI in adults and traditional age students Learning Styles at selected Universities. Chi-square analysis did not indicate any statistical differences in Learning Styles due to age factor.

Whitcomb (1999) undertook a study to examine the relationship of cognitive development to Learning Style preferences of college students. Learning Style Preferences were determined by Kolb’s Learning Style Inventory. Results showed significant difference between age groupings with younger students being more reflective, while the older students were more active in their learning processes.

Gensberg (2002) made an analysis of Learning Styles among young old adults (age 65-74) and old adults (age 75-99). On Kolb’s Learning Styles Inventory, the result revealed that predominant Learning Styles among older adults were assimilators and divergers and five of the ten participants’ demonstrated use of more than one Learning Style. There were no differences existed in age groups with regard to Learning Styles
2.4.1.2(c) Learning Style and Stream/Discipline:

Miller (1979) reported that the engineers were perceived to be more relevant on abstract and reflective skills on Kolb’s LSI than those in a subsequent management positions.

Caskey (1981) investigated the effects of attribute variables of community college students on cognitive Learning Styles measured by Kolb’s Learning Styles. Selection of college was the major significant affected both the abstract/reflective dimensions of cognitive Learning Style. Architecture/engineering majors tend to be abstract learners while business major prefers an active Learning Style.

Gypen (1981) studied the Learning Styles of engineers and social worker and found that as engineers move up from the bench to a management position, they complement their initial strength in abstract conceptualization and active experimentation with the previously non-dominant orientation of concrete experience and reflective observation. As social workers move from direct service into administrating position, they move in the opposite direction of the engineers.

Dunn (1982) found that the mean performance of educators preferred Learning Style were significant different from those of business professionals. Using Kolb’s Learning Style Inventory (LSI) Biberand Buchanan (1986) surveyed accounting economics/finance management and marketing major that were well classified under the universal grouping of the business school. Their results suggested that the economics/finance majors scored significantly different from accounting students on Kolb’s LSI who scored similarly to science majors. The researchers also found that management and marketing major scored in the same range as the Humanities and applied majors, rather than grouping several areas of study under large generalized headings.

Grun (1986) found that certain Learning Styles of Kolb’s LSI was found to be associated with specific academic major.

Kirk (1986) found that Learning Styles on Kolb’s Learning Style Inventory was not found to be significantly related to academic major/minor.

Taylor (1986) investigated in the relationship of brain dominance and Learning Style preference to student success. Learning Styles were identified by Kolb’s Learning Style Inventory. The findings indicated that students’ choice of major was not related to Learning Style preference of students.
Smalarz (1986) found that a marginal relationship seemed to exist between the assimilator style on Kolb’s LSI and the nursing major.

Reading, Brown and Hayden (1989) using Kolb’s Learning Styles Inventory compared the Learning Styles of students of similar majors who were enrolled in courses at the liberal arts college with their cohorts attending a college with a decided technical focus. Even though the students major were similar there were significant differences between their Learning Styles.

Using Kolb’s LSI, Winant (1989) found that dominant Learning Style preferences of engineering faculty were assimilator and converger, although all the four Learning Styles were present. Students in both off campus and on campus were predominantly convergers and assimilator in their Learning Styles.

Banks (1991) undertook a study to determine whether there is a preferred Learning Style of software engineering on Kolb’s Learning Style Inventory and Honey and Mumford’s Learning Style Questionnaire. The result of the study clearly indicated that there was a demonstrated preferred Learning Style and a least preferred Learning Style. Result from Kolb’s LSI-II indicated a strong preference for the converger and assimilator Learning Styles. These two Learning Styles showed a common learning mode of abstract conceptualization. Result from LSQ indicates a strong preference for reflector Learning Style.

Mckee (1995) undertook a study to ascertain the relationship of Learning Style with Academic Achievement, academic major and demographic variability using Kolb’s Learning Style Inventory. The findings indicated that a statistical significant relationship was found between Learning Style preference and academic major, but not in the direction hypotheses based on previous research. The relationship between the preference for abstraction scale and academic major was statistically significant.

Gallagher (1998) reported no significant relationship of Learning Styles as measured by Kolb’s LSI to academic major.

Jones (2000) conducted a study to determine whether Learning Styles of college students vary across four subject areas/disciplines English, Math, Science and social study using Kolb’s modified Learning Style Inventory. The results of the study revealed statistically significant differences in the student learning preferences by subject area.
Elfant (2002) found that there was no significant effect for student Learning Style for humanity based course, but there was a significant effect for student Learning Style for the natural science and Mathematics based courses.

2.4.1.2 (d) Learning Style and Type of Institutions:
Joerger (1992) reported that on Kolb's LSI as a single group, both community college and technical college students had a diverger Learning Style. When analyzed separately, the technical college students were divergers and community college students were assimilators.

2.4.1.2 (e) Learning Style and Residence:
Tappeden (1983) studied the Learning Styles of vocational education and non-vocational education students in eleventh and twelfth grades from rural, urban and suburban locations in Ohio. Students identified preferences for 24 Learning Style variables from the four categories of "environmental", "emotional", "sociological", and "physical" stimuli. Findings of the study indicated that rural vs. urban subjects differed significantly on eight of the 24 LSI variables and rural vs. suburban subjects differed significantly on five of the LSI variables.

Clyne (1984) investigated the relationship between learning styles preference and reading achievement of urban Alaskan Native students. The data analysis suggested that acculturation may modify Native preferred Learning Styles.

Kier (1987) undertook a study on Learning Styles of older adults. The study led to the conclusion that no support can be given to the relationship between Learning Style and place of residence.

Atchison (1988) determined the relationship between the Learning Style and reading achievement of sixth-grade students in the state of Alabama. Statistically significant relationship existed between the Learning Style of students as identified by the Hunt Paragraph Completion Method and the location of their schools i.e. urban-rural.

Nan (1989) designed an investigation to explore the relationship of Korean students Learning Style with residence, gender, and achievement of Ninth grade. The 2x2 MANOVA (residence by gender) using the GEFT and the ten factor scores of LSP indicated that Learning Style differences existed between urban and rural. Urban students were more field independent, more proficient in cognitive differentiation.
tasks, less sensitive to external environment and preferred afternoon time than rural students.

2.4.1.2 (f) Learning Style and Culture/Race/Ethnicity:

Kagan and Madisen (1971) found that Mexican American Children scored high on the cooperative scale than their Anglo counterparts.

Wilson (1971) made an attempt to compare the Learning Styles in African Tribal groups with Afro-American learning situations and the channels connection. Infect it was not an empirical study. The investigation involved an analysis of documentary material. It was observed that Afro-American had imitative Learning Style. This was similar to that of Learning Style of African tribes. Similarly, it was attributed to the nature of the culture and associated socialization process.

Caskey (1981) reported that Learning Styles on Kolb’s KSI in community college students were not found to be significantly influenced by ethnicity variables.

Senneville (1982) conducted a study to determine if there were any significant difference among Learning Style profile of selected secondary school students from Canada, Mexico and the United States. The data analysis yielded that a) Subjects from Mexico differed significantly from those of Canada and the United States in the cognitive style category of Learning Style. However, subjects from Canada and the United States strikingly similar Learning Style profiles.

Tucker (1983) using Kolb’s LSI found no significant difference between black participants and white participants existed with regard to Learning Style of eight grade students.

Hussein (1986) compared Learning Styles of International and American graduates’ students by mailing a questionnaire. On the basis of analysis of the results it was found that the largest groups of International and American graduated students expressed very strong preference for (a) organized courses work (b) hearing information (c) very strong expectancy of outstanding performance, moderate preference for peer affiliation, settings one’s own goal, and having close and personal relationship with instructors.

Kreuze and Layne (1989) found that there was no significant difference between Hispanics and Anglo College Students on Learning Styles.

Weasel Head (1989) studied the Learning Style of tribal college Indian students and University of Indian students in Montana. The Canfield Learning Style Inventory was used to collect the data on Learning Styles. Analysis of the data
indicated that American-Indian students do have preference for Learning Styles. These preferences were more pronounced when gender and institution were considered. Female and male preferred different Learning Styles. This preference also depended upon the institution attended.

Johnson (1989) made a comparative analysis of Learning Styles of black and white college freshmen on Kolb's Learning Style Inventory, backs as group used the assimilator mode of processing information as compared to whites who used the diverger learning modality to a great extent.

Johnson (1989) made a comparative analysis of Learning Styles of black and white colleges' freshmen. The independent measures were race, gender, grade point average size of high school and the dependent measures were the two out scales of Kolb's (1985) Learning Style Inventory and four subscales of the Myers-Briggs Type Indicator. Significant differences were found in the Learning Styles of blacks and whites on both the LSI and MBTI black were significantly more sensitive and thinking than their white counterparts. On the LSI blacks as group used the 'assimilator' mode of processing information as compared to whites who used the 'diverger' learning modality to a greater extent. Female and male were found to differ significantly on the 'sensing/intuition' scale with female being more 'sensing' than male. Blacks also tended to prefer 'thinking' over 'feeling' on the MBTI significantly more than whites. The race-gender interactions were also not significant.

Stokes (1989) attempted an analysis of the relationship between Learning Style, race and gender. The research findings did not yield substantive data to support the contention that achievement disparities were related to racial and gender variances in Learning Style preferences. The findings indicated that the interaction of race and gender with Learning Style preferences was not statistically significant in predicting achievement. But, it was found significant in predicting reading achievement. The results further evidenced there were racial and gender variations in Learning Style preferences. Eight of the ten variables addressed in the study significantly discriminated between the racial and gender subgroups.

La Pointe (1990) concluded a cross cultural study of the relationship between cultures, Learning Styles, classroom environment and teaching procedures. The analysis revealed certain differences between groups. Also some similarities, all the groups had highest percentage of agreement with the collaborative Learning Style. Other than that, Indian was more independent than whites regarding teachers'
presentations and; they were more dependent than both Asian and Whites on course and classroom structure. They were more competitive than whites with all students but also more collaborative than whites with all students and within group. Asian and Indian resembled each other closely both in competitive and in collaborative Learning Styles.

May (1991) undertook a study to seek to determine if there was difference in Learning Styles base on the personality types of eight and twelfth grade urban African-American and white students. One of the major finding of the study was the difference in the sensing perception scale between both eight and twelfth grade African-American and white students. Statistical significant differences were also found in the SJ and PJ styles for both the African-American and white students.

Wang’s (1992) studied aimed at identifying and describing Learning Styles of Chinese and American Graduate students. The results of the study indicated that (a) American graduates students preferred 9 more social real-world Learning Styles. Most of them were found in the typologies of Independent/applied, social/conceptual and social. They preferred to have opportunities to interest with peers, and instructors, to work inactivates directly related to real-world experience (b) Chinese graduates students preferred to work with highly organized language-oriented materials. Most of them were found in the typologies of independent/conceptual, independent and conceptual. They preferred self-selected and self-paced programs, reading literature, searches and reviews. (c) Differences existed between American students and Chinese students in the variables of conditions for learning and area of interest. There was similarity in variables of mode of learning and expectation for course grade between American and Chinese graduate students.

Hudgens (1992) investigated the relationship of cognitive Learning Style, planning ability and locus of control to achievement for three ethnic groups. Anglo, African-American and Hispanic middle and secondary school students group embedded. The results indicated that (a) field independence, internal locus of control and high planning ability were associated with high achievement. (b) Minorities were more field dependent than Anglos (c) females performed males for planning ability, language skills Math’s computation and study skills (d) grater locus of control was seen in African America males and Hispanic female while externality was noted for African-American females and Hispanic males. It was concluded that Learning Style preference and locus of control were differentiated by culture and gender.
Nieto (1992) reported that Hispanic children had field dependence and diverger type styles.

Smith (1992) explored the effect of computer-based integrated learning system on the Academic Achievement of high school students by race and Learning Style. The data analysis revealed that Learning Style was not a significant factor in the integrated Learning Style. However race was significant in determining the achievement in reading and Mathematics.

Royal (1994) ascertained the applicability and predictability of Kolb’s LSI in Asian context, Singoren students scored higher on abstract conceptualization and low in concrete experience ability. It confirmed the hypotheses that styles of learning were related with different educational and cultural backgrounds.

Emanuel (1995) compared Learning Styles, self-concept and teacher expectations of Native American students in middle school. Three comparison groups were Native American, African American, and Caucasian cultures. The results indicated that teachers observed that Native American students learn more with different styles from other students.

Flores-Feist (1995) reported that there was a significant difference in Learning Styles between Hispanic and Anglo students in chemistry as measured by Kolb’s LSI.

Aragon (1996) reported that several significant differences were found between Native American and Hispanic adult learners, using nine instruments for assessing Learning Styles and cognitive styles including Kolb’s Learning Style Inventory.

Sanchez (1996) reported that Hispanic learners had very low preference for dependence over independence intrapersonal over independent extrovert over introvert and for field dependence over field independence. This group had a medium preference for influence, media, pacing active role, deep processing, methodical study time management, anxiety, support techniques, self-testing, concrete experience reflective observation, abstract conceptual sensing over intuition, and for thinking were feeling. The profile shows that Hispanic children had a high preference for feedback participation over avoidance, collaboration over competition, fact retention, elaborative processing, attitude, motivation, concentration, information processing, selecting main idea, testing strategies, active experiment and for judgment over perception.
**Reno (1997)** conducted a study to make comparison of the perceptual Learning Style of Native Hispanic adults and European-American Adults. The analysis of results revealed significant differences in perceptual learning preferences of the group based on culture language.

**Nuby and Oxford (1998)** explored the Learning Style preferences of Native American and African American secondary students. Using MBIT, they found that overall both groups favored extraversion, sensing and thinking, although with different degrees of preference. Major differences were found between the two groups for judging (preferred on half of the African-Americans but by fewer than 25% of the Native American, who overwhelming chose perceiving). Male and female patterns (extraverted, sensing, thinking, and perceiving) were similar in broad terms, but percentages were different particularly on thinking and feeling.

**Sanchez (1998)** undertook on analysis of Learning Styles of Mexican American adults to determine if difference exists between three US estimates of MBTI. The results indicated that there were significant differences on the sensing/thinking, thinking/feeling and judgment/perception scales. Further significant difference was found on thinking and feeling scale between males and females. Interaction between gender and culture Learning Style was found. Analyses obtained differences on sensing/intuition scale for males and for females and males were significantly different on the judgment/perception scale. The findings suggest that culture and acculturation levels make a significant difference in Learning Styles.

**Gallagher (1998)** explored the difference in Learning Styles using Kolb's Learning Style Inventory in adult and traditional age students Learning Styles at selected university. Ethnicity did not emerge as significant factor with reference to differences in Learning Styles.

**Gadzella (1999)** did not find significant difference between Caucasian students and African-American students on Schmeck's Inventory of Learning Processes.

**Mathew (1994)** found significant difference in the Learning Styles of Caucasian and African-American students using Canfield's LSI.

**Mealer et al. (1999)** examined Learning Styles and personality of African-American children of High School. This study showed Learning Style difference among African American youth and white male students. Additionally the Learning Styles of African Americans were shown to have more heterogeneity that has been
previously reported. Sixth graders were more like to prefer feeling than 11th graders. African American HSS showed preferences for sensing/thinking and sensing/perceiving. Gadzella et al. (1999) investigated whether there was significant difference between African American and Caucasian students on critical thinking and Learning Styles. In this study Schmeck’s Inventory of Learning Styles was employed in association to Watson-Glasser Critical Thinking Appraisal. Analysis showed that Caucasian students had significantly higher mean scores than African American students on 4 sub-test scores of the critical thinking. It was further observed that there was no significant difference between the two groups on the Learning Styles as assessed by Schmeck’s ILS.

Adams (2000) studied the learning preferences of Mexican-American students. In this study the relationship among cultural levels, socioeconomic status, academic performance and learning preference were considered at elementary age level. However, the findings were not be traced.

Williams (2001) reported that there were no significant differences on Learning Styles of men and women community college students when Learning Styles were assessed by Kolb’s Learning Style Inventory. The difference between race/ethnicity categories however, noted in learning made characteristics.

Depaula (2002) compared Learning Styles of Brazilian versus other adolescents from diverse nations by age, genders and Academic Achievement. The finding indicated that there were significant interactions with age by country with regard to Learning Styles.

Franchi (2002) made the comparison of Learning Styles preferences styles of cross-cultural populations. Finding from this research study indicated that there was a relationship between culture and preference for a particular learning productive style.

Fridlane (2002) studied adult Learning Styles in cultural background. The finding suggests that adults from different cultural backgrounds approach learning in similar style.

Wubabora (2003) found that Russian adolescents differed from adolescents in a number of countries on a number of Learning Style preferences.

Lal (2003) conducted a cross cultural study of Learning Styles of under graduate students of Taiwan and the United States Using Kolb’s LSI. The findings revealed that Learning Styles of the two groups exhibited slight difference. The Taiwanese hospitality students had more assimilators and fewer accommodators than
their US Counterparts. The research suggested that more assimilators might be the result of Taiwani test oriented educational system and ethnic difference in cognitive style (FI/FD) have been reported. No significant differences were reported in the investigations of Figueroa 1980, Hernandez, 1973, Martinez and Norman 1984, Neison et al. 1980 and Kush 1996.

2.5 Research Studies Conducted on Self-Efficacy in Abroad:
This section presents review of related studies conducted on Self-Efficacy in foreign. These were further analyzed in terms of determinants of Self-Efficacy and effects of Self-Efficacy.

2.5.1 Determinants of Self-Efficacy:
For the sake of systematic analysis determinants of Self-Efficacy were divided into two categories viz. Psychological Factors and Background Factors.

2.5.1.1 Psychological Factors As Determinants of Self-Efficacy:
From the scrutiny of studies, it was found that Self-Efficacy have been studied in context of number of variables.

2.5.1.1 (a) Self-Efficacy and Self-Concept:

Pajares and Johnson (1994) reported that writing Self-Efficacy (.53), perceived usefulness (.55), and previous writing achievement (.57) had correlations with the writing performance of undergraduates. However, in a multiple regression model that accounted for 68% of the variance in writing performance, only the students’ Self-Efficacy and aptitude were significant predictors.

Pajares and Miller (1994) reported that Self-Efficacy to solve Math problems was more predictive of that performance than were prior determinants such as sex or Math background or variables such as Math anxiety, Math self-concept or perceived usefulness of Mathematics.

2.5.1.1 (b) Self-Efficacy, Locus of Control and Anxiety:
McCarthy et al. (1985) identified 19 writing skills and asked undergraduates whether they could demonstrate them. They also assessed anxiety, locus of control orientation
and cognitive processing. In two studies conducted with the same students, Self-Efficacy that students had in their writing skills was related to holistically scored essay scores on the first study, Self-Efficacy and writing anxiety correlated with essay scores on the second. The relationship between Self-Efficacy and essay scores was moderate (.33).

**Guskey et al. (1995)** studied teacher's efficacy and its dimensions. 59 prospective and 283 experienced teachers completed an altered form of the teacher efficacy scale. The factors corresponded to internal vs. external distinction was similar to locus of control measures of casual attribution, suggesting that teacher efficacy is a multidimensional construct. The internal factor represented perceptions on personal influence, power and impact on teaching and learning situations, the external factors related to influences outside the classroom not in direct control of the teachers.

**Aleidan and Abdullah (2002)** found no significant difference between gender and career decision making Self-Efficacy.

### 2.5.1.1 (c) Self-Efficacy and Academic Achievement:

**Berman et al. (1977)** concluded that Teacher's sense of efficacy had a strong positive effect not only on student performance but on the percent of project goals achieved, on the amount of teacher change and on the continued use of project methods and material after the project ended.

**Schunk (1981)** showed that efficacy accounted for significant increments of children's achievement gain in Mathematics. He also stated that a heightened sense of efficacy sustains task involvement and results in greater achievement and lower percepts of efficacy lead to less persistence and lower achievement.

**Collins (1982)** identified children of low, middle and high Mathematics ability who had, within each ability level, either high or low Mathematics Self-Efficacy. After instruction, the children were given new problems to solve and an opportunity to rework those they missed. Collins reported that ability was related to performance but that, regardless of ability level, children with high Self-Efficacy completed more problems correctly and reworked more of the ones they missed.

**Lent et al (1984, 1986)**, in studies of college students who pursue science and engineering courses, high Self-Efficacy has been demonstrated to influence the academic persistence necessary to maintain high Academic Achievement.
Multon, Brown and Lent (1991) conducted a meta-analysis of studies published between 1977 and 1988 and revealed that efficacy beliefs were positively related to Academic Achievement. Effects were stronger for high school (d = .41) and college students (d = .35) than for elementary students (d = .21). The strongest effects were obtained when achievement indices were assessed with basic skills measures (d = .52) or classroom based indices such as grades (d = .36) than with standardized achievement tests (d = .13).

Zimmerman et al. (1992) used path analysis to demonstrate that academic Self-Efficacy mediated the influence of Self-Efficacy for self-regulated learning on Academic Achievement. Academic Self-Efficacy influenced achievement directly (B = .21) as well as indirectly by raising students' grade goals (B = .36).

Mone, Baker and Jeffries (1995) also reported that Self-Efficacy had greater predictive validity for academic performance than did self-esteem.

Pajares and Kranzler (1995) reported that accuracy of self-perception was strongly correlated with academic performance and with general mental ability and they urged researchers to explore the relationship between Self-Efficacy beliefs and other Math-related variables in high-ability students as this stronger sense of academic efficacy and greater accuracy of self-perception may alter the predictive and mediator role that efficacy judgments play in their academic performances.

Pajares and Miller (1997) reported that when Self-Efficacy beliefs correspond to the academic outcome with which they are compared, prediction is enhanced and the relationship between Self-Efficacy and academic performance is positive and strong.

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 scores also had high Academic Achievement.

Thongnoun and Duanpen (2002) concluded that high achieving students reported higher Self-Efficacy than low achieving students.

2.5.1.1 (d) Self-Efficacy and Environmental Factors:

Andersen et al. (2004) studied science teaching Self-Efficacy beliefs among new teachers 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 = .011, n = 39).
2.5.1.1 (e) Self-Efficacy and Goal Orientation:

Braten et al. (2004) examined perceived Self-Efficacy moderated the relationship between performance goals and self-regulatory strategy use in two different samples of 178 and 108 Norwegian post-secondary students. Using multiple regressions with interaction terms, they found that perceived Self-Efficacy moderated the relation between performance-avoidance goals and reported use of self-regulatory strategies for students in a competitive, performance-oriented context. Specifically, in that context, there seemed to be a negative effect of increased performance-avoidance goal orientation for students with high Self-Efficacy and a positive effect of increased performance-avoidance goal orientation for students with low Self-Efficacy.

2.5.1.1 (f) Self-Efficacy and Self-Regulatory Strategy:

Zimmerman and Pons (1989) asked 45 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 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 Asian Students came from middle-class homes. Gifted students displayed significantly higher verbal efficacy, Mathematical efficacy and strategy use than regular students. Students’ perceptions of both verbal and Mathematical efficacy were related to their use of self-regulated strategies.

2.5.1.1 (g) Self-Efficacy and Job Satisfaction:

Mottet, et al. (2004) studied the effects of student’s verbal and nonverbal responsiveness on teacher Self-Efficacy and job satisfaction. Over a quarter (26%) of the total variance in teacher Self-Efficacy and over half (53%) of the total variance in teacher job satisfaction were attributable to student verbal and nonverbal responsiveness. Overall, student nonverbal responsiveness had a greater effect on teacher Self-Efficacy and job satisfaction than verbal responsiveness. Also teacher job satisfaction was more susceptible to student verbal and nonverbal responsiveness than teacher Self-Efficacy.

Williamson and Jennifer (2006) studied the relationship between teacher’s level of social interest and teacher efficacy and their degree of job satisfaction. The purpose of this study was to explore whether there was relationship between the job satisfaction of teachers and teachers sense of efficacy and social interest. This study also explored whether there was a relationship between job satisfaction and job conditions, age and years of experience, gender and size of school. This study found
significant relationship between job satisfaction and teacher efficacy, social interest and job conditions. Age and years of experience were not found to possess significant relationship with job satisfaction and differences were found between male and female teachers as well as between teachers in large and small schools.

2.5.1.2 Background Factors as determinants of Self-Efficacy:
From the analysis of studies it became apparent that a number of background factors also play a significant role in the shaping of Self-Efficacy.

2.5.1.2 (a) Self-Efficacy and Gender:
Meier et al. (1984) reported that writing Self-Efficacy predicted the writing performance of college students, but they did not explore the nature of the relationships among variables such as Self-Efficacy, apprehension, aptitude and performance. Hackett (1985) also found that, when male and female students differ in Mathematics performance, the difference is in large part mediated by Self-Efficacy perceptions.

Kammer and Smith (1985) examined the relationship among sex and Math/Science career Self-Efficacy, interests and consideration for disadvantaged students who participated in a pre-college program. The finding indicated sex differences in Self-Efficacy for three Math/Science careers, no sex difference emerged for non-Math/Science careers. Results of regression analyses suggested that consideration of careers was most highly related to interest in the career. For females, confidence in meeting educational requirements was also shown to be related to consideration of a career.

Fouad and Smith (1996) found that the Mathematics Self-Efficacy beliefs of middle school boys and girls did not differ in path model that included age, interest, outcome expectations and intentions to enroll in Mathematics related career.


Britner et.al (2002) discovered that Science grade Self-Efficacy was positively associated with the grades obtained by boys and girls. Also, girls reported stronger Science Self-Efficacy and received higher grades in Science class.

Fernandez 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 posited structural model, socio-economic-status contributed to both perceived
personal Self-Efficacy to manage one’s life circumstances and individual efficacy to contribute to the betterment of social conditions.

**Kiviet and Andile (2003)** studied sex difference in Self-Efficacy beliefs of elementary Science teachers. Significant mean sex differences (t=-4.55, P<.01) were not observed on the personal subscale but on the general subscale. This result has major implications for educational planners and administrator employing female have prepared them as well as their male peers for teaching science. It is concluded that female teachers need support to change their beliefs about Self-Efficacy regarding teaching science.

**Daugherty and Yvette (2003)** found no significance difference between the Self-Efficacy scores of female students and that of male students.

2.5.1.2 (b) Self-Efficacy and Subject/Stream/Faculty:

**Midgley et al. (1988)** found that the rate of change within the school year in students’ expectancies, perceived performance, and perceived task difficulty in Math differed at years 1 and 2, depending on teacher efficacy before and after the transition. The differences in pre and post transition teachers’ view of their efficacy had a stronger relationship to low-achieving than to high-achieving students’ beliefs in Mathematics.

**Lepez and Lent (1992)** found no difference in the reported sources of the Mathematics Self-Efficacy beliefs of high school students.

**Ledford and Dionne (2002)** reported that teaching-efficacy is significantly correlated to both Math and reading achievement, although more strongly related to reading achievement.

**Brown (2006)** studied about two teachers Emily and Rebecca who started their teaching careers in their forties were interviewed and followed for 3 years to document their experiences in teaching profession. They reported that with experience their attitude and efficacy became more favorable.

2.5.1.2(c) Self-Efficacy and Organizational Resources:

**Salonova et al. (2006)** conducted the present 2-wave study among 258 secondary school teachers and investigated the relationship between personal and organizational resources on the hand work related flow on the other hand. The results of a series of structural equation modeling analysis offer clear support for hypotheses formulated for the purpose.
2.6 Research Studies Conducted on Emotional Intelligence in Abroad:

This section presents review of related studies conducted on Emotional Intelligence in foreign. These were further analyzed in terms of determinants of Emotional Intelligence and significance for Prospective Teachers.

2.6.1 Emotional Intelligence, its Significance and Historical Perspectives:


Elias, et al. (2002) examined the relationship between socio emotional teaching and school success. An effective SEL programme can improve variables like school attitudes (that include motivation responsibility attachment), school behaviour (engagement, attendance study habits) and school performance (that includes grades, subject mastery and test performance). These are important components that can foster commitment to academics and effective performance.

Goleman (1998, 2001 and 2002), Fernandez–Aroaoz (2001), Kelly (1998): Spencer and Spencer (1993) conducted several brain and behavioural researches and showed the factors at work to reason out as to why people of high IQ found whereas those of modest IQ do surprisingly well. These factors, which include self-awareness, self-discipline and empathy, add up to a differently way of being smart. They called it “Emotional Intelligence” in one term. The entire above psychologist suggested that IQ alone does not predict performance and career success. Competencies that integrate cognitive, emotional and social abilities account for all round success in life and for job-performance.
2.6.2 Emotional Intelligence and its Significance for Prospective Teachers: 

Salovey and Sluyter (1997) wrote a book on emotional development and Emotional Intelligence, which talk about emotional regulations during childhood. They cited a number of good and relevant studies about how adults can influence kids, especially teachers by moulding an appropriate behavior in the classroom. Teachers who are aware of the problems maltreated children can deal with them effectively only if they themselves have emotional competencies.

Colleen and Wood (1999) from Ontario compared the Emotional Quotient profiles of general teachers and master teachers with the help of “Emotional Quotient Profile”. He found that although the profiles were very similar still the master teachers scored higher on few scales like social segment scale and leadership qualities at an interpersonal level. This shows that experience and constant feedback on Emotional Intelligence can lead to development of such competencies. Thus, it becomes more imperative to develop a measure to map the profile of Emotional Intelligence of school teachers.

Ball and Stacy (2004) developed a new measure entitled “Reactions to Teaching Situation, to indicate levels of Emotional Intelligence among beginning teachers. The correlations ranged from 0.72 to 0.82. An average of individual difference was reported. Gender differences were found where female teacher reported likelihood of demonstrating Emotional Intelligence compared to male teacher. In the above study, specific teaching situations were dealt with and not the general emotional competencies of teacher.

Gardner (2006) developed, implemented and evaluated an Emotional Intelligence training programme for teachers from various educational settings (Primary secondary, tertiary) wherein 79 teachers participated in a 5 week psycho educational Emotional Intelligence training and result indicated improvement in Emotional Intelligence after the training programme.

2.6.3 Emotional Intelligence and Assessment Tool:

Salovey and Caruso (1990, 2002) provided the first demonstration of how the Emotional Intelligence may be measured. The authors developed several standard criteria for a new intelligence.

Cooper and Orioli (1997) developed the EQ map to measure the five factors of Emotional Intelligence with 20 scales. The factor in the EQ map are directly related
to one’s ability to stay healthy under pressure, develop trusting relationship and creative sense and pursue opportunity for one’s future.

Reuven (1997) developed a self-report instrument of 133 items designed to assess personal qualities correlated to greater wellbeing. It is a self-report measure to assess “Emotional Intelligence behavior”.

Schutt et al. (1998) developed self-report unit factor measure of Emotional Intelligence called SREIT (Self Report Emotional Intelligence Tool). It consisted of 62 self-report items that were primarily based on Salovey and Mayer’s early model of Emotional Intelligence. The scale significantly correlated with measure that assess interpersonal relation, including empathic perspective taking, social skills, and marital satisfaction and supervisor rating of student counsellors who worked at mental health agencies.

Goleman and Boyatzis (1999) developed the Emotional Intelligence Inventory using 4-Quadrant model of Goleman. The ECI measures a spectrum of critical competencies shown to affect workplace performance. It is a useful tool to assess personal and professional development. It is effective for giving a feed back to people about their team members and their behavior and relationship with them.

Freeman (2001) gave the six seconds model of Emotional Intelligence. The test is self-explanatory and used in training programs (e.g. EQ leadership, selling with EQ and EQ team). The test measure 8 fundamental skills in the three areas-know yourself, give yourself and choose yourself.

Brackett and Mayer (2002) of the University Hampshire have cited and compared almost all the important Emotional Intelligence test available in abroad. The study investigated the convergent, discriminate and incremental validity of MSCIET, EQ-I and SREIT.

2.6.4 Emotional Intelligence and Different Factors:

Boyatzis (1982) found that star performers were able to balance their drive, ambition and assertiveness with Emotional Self-control. Additional such performs were also able to harness their personal needs in the service of organizational goals.

George and Bettenhausen (1990) and Bachman (1988) studied outstanding leadership styles and found that more positive the style of leader, the more positive, helpful and cooperative are those in this group. The emotional tone set up by a leader tends to ripple outward with remarkable power.
McCrae (1992) found the Emotional Intelligence significantly predicated grade point average at the end of the year (r = .32, P<.01). Further it was highly positive related to openness to experience, a trait from NEO personality inventory.

Crant (1995) and Rosier (1996) found that initiative competence is the key to farsightedness that makes the critical difference between a wise decision and a poor one. Individuals who lack initiative are reactive rather than proactive. This competence leads to development of personal relationship with clients especially in business as financial service or consulting.

Goleman (1998) showed that the single most important factor is not IQ advance degrees or technical expertise but the quality Goleman calls Emotional Intelligence. Self-awareness, self-confidence, self-control, commitment and integrity, the ability to communicate the influence to initiate and accept change these competencies form the overall construct of Emotional Intelligence. The higher up the leadership ladder one goes, the more vital these skills become. As Goleman shows that all people possess the potential to improve their Emotional Intelligence, at any stage in their career.

House (1998) studied the leadership styles of top executives and found that “Change Catalyst” is a highly valued competence in leaders. Leaders with such competence recognize the need for change, remove barriers, challenge the status quo and enlist others in pursuit of new initiatives. A teacher’s (leader’s) competence at catalyzing change brings greater efforts and better performance from students, making their work more effective.

Schutte et al. (1998) observed that Emotional Intelligence was negatively and significantly correlated with pessimism (r = -.43) depression (r = -.37) impulsivity (r = -.39) but positively correlated with greater clarity of feelings (r = .52) and greater attention to feeling (r = .63).

Sweeney et al. (1999) found that teamwork itself depends on the collective Emotional Intelligence of its members; the most productive teams are those that exhibit Emotional Intelligence competencies at the top level. Team members send to share moods, both good and bad with better moods improving performance. The positive mood of team leader at work promotes work effectiveness and promotes retention. Finally, positive emotions and harmony on a top management team predict its effectiveness.
Cherniss and Goleman (2000) gave the Emotional Intelligence based theory of performance. After a detailed internal research at hundreds of corporations and organizations, a workplace performance model was unveiled and factors that distinguish best individual from average ones were identified. These factors constitute the overall construct of Emotional Intelligence, in other words the Emotional Intelligence range of competencies.

2.7 Research Studies Conducted on Achievement-Motivation in Abroad:

This section presents review of related foreign studies on Achievement-Motivation. These were further analyzed in terms of determinants of Achievement-Motivation and effects of Achievement-Motivation.

2.7.1 Determinants of Achievement-Motivation:

For the sake of systematic analysis determinants of Achievement-Motivation were divided into two categories viz. Psychological factors and Background factors.

2.7.1.1 Psychological Factors as determinants of Achievement-Motivation:

From the scrutiny of studies it was found that Achievement-Motivation has been studied in context of number of variables.

2.7.1.1 (a) Achievement-Motivation, Intelligence and vocational Interest:

Abrol (1977) studied Achievement-Motivation in relation to intelligence, vocational interest, achievement, sex and SES and found that:

(i) Achievement-Motivation is higher among student whose fathers belong to professional group of occupations than those whose father belong to clerical or petty shopkeepers group or to unskilled workers group.

(ii) Achievement-Motivation and scholastic achievement are positively correlated.

(iii) Students belonging to different types of schools differ in their Achievement-Motivation scores.

2.7.1.1 (b) Achievement-Motivation and Locus of Control:

Weiner et al. (1971) classified the causes in two dimensions i.e. locus of control and stability. A number of laboratory studies have confirmed the importance of these dimensions in understanding achievement related behavior.

Paul (1972) conducted an investigation into the antecedents of variable of I-E control of reinforcement. He observed that when family relationship are marked by a
lack of harmony and exhibit fighting, conflict and tension, children are likely to
develop external orientation, perhaps as a defense against aversive circumstances.

**Bedian and Hyder (1977)** found that relationship between locus of control
was significantly and negatively correlated for androgynous females, indicating a
tendency for n-ach, to increase as feelings of external control decrease.

**Nowicki and Schneewind (1982)** also supported the view that external
orientation develops in any child when family relationship are marked by lack of
harmony and exhibit fighting, conflict and tensions. It is observed that boys who are
externals on ‘chance’ dimension locus of control perceive more tension in their
homes.

### 2.7.1.1 (c) Achievement-Motivation and Academic Achievement:

**Weisher (2002)** studied the effect of various types of parental involvements on
student’s motivation and achievements and parental involvements did not exhort a
great effect on student achievements. This effect was frequently in negative direction.

**Osun (2007)** studied the impact of motivation on Academic Achievement and
learning outcomes of secondary school students and found that motivation has impact
in Academic Achievement of secondary school students in Mathematics with regard
to gender.

### 2.7.1.2 Background Factors as Determinants of Achievement-Motivation:

From the analysis of studies, it became apparent that a number of background factors
also played a significant role in shaping of Achievement-Motivation.

### 2.7.1.2 (a) Achievement-Motivation and Gender:

**Broussard and Garrison (2004)** concluded that the relationship between
Achievement-Motivation and academic successes has been better established in adults
than with younger children. As a part of a larger project, the purpose of this study was
to examine the relationship between classroom motivation and Academic
Achievements in young elementary – school- aged children. The finding from the
current study were consistent with previous research in that higher levels of mastery
motivation and judgments motivation were found to be related to higher Math and
reading trades in third graders. However, higher levels of mastery motivation, no
judgment motivation were related to higher Math and reading grades in first grade.
2.8 Research Studies Conducted on Attitude Towards Teaching in Abroad:

This section presents review of related foreign studies on Attitude Towards Teaching. These were further analyzed in terms of determinants of Attitude Towards Teaching and effects of Attitude Towards Teaching.

2.8.1 Determinants of Attitude towards Teaching:

For the sake of systematic analysis determinants of Attitude Towards Teaching were divided into two categories viz. Psychological factors and Background factors.

2.8.1.1 Psychological Factors As Determinants of Attitude Towards Teaching:

From the scrutiny of studies it was found that Attitude Towards Teaching have been studied in context of number of variables.

2.8.1.1 (a) Attitude Towards Teaching and B.Ed. Course:

George (1979) conducted a study on the effect of student teaching and pretesting on student teachers attitude and found that attitude of student teachers can be improved by student teaching experience provided that they are not pre-tested concerning their attitudes.

Diran Taiwo (1980) studied the influence of previous exposure to science education on attitude of pre-service science teachers towards science teaching. Major finding was: previous exposure to science education as a discipline before registering for bachelor's degree in science education in Nigerian Universities seems to significantly affect the attitude towards science teaching.

Mathema and Bhagat (1988) studied wastage of teacher education in the secondary schools of Nepal as related to intelligence, personality, vocational aspirations and Attitude towards Teaching of drop-outs from the profession found that the drop-out came from a higher SES background. Lack of interest in teaching, the low social and economic status according to the profession and compulsion to leave teaching were important factors responsible for the teacher dropout phenomenon. The dropouts were more intelligent and had higher vocational aspirations than the teachers and had a favourable Attitude towards Teaching. No significant difference existed between male and female teachers on intelligence level and Attitude towards Teaching. Male teachers had a strong need for deference and order.
Ava and Others (1991) conducted a study, on investigation of Pre-service Teachers' Attitude toward Theory and Practical Application in Teacher preparation. The study noted whether they felt competent about subject matter, audiovisuals, classroom management and routine, and communication. Results found their attitudes more positive in the fall on all four measures.

Koontz and Franklin (1992) concluded that a formal course in the selection and utilization of instructional media can function as a primary factor in the development of student's attitudes in a positive direction.

John and Others (1992) conducted a study in the Educational Attitudes of Pre-service Teachers. Two populations of undergraduate students (pre-service elementary education majors and non-education majors) were compared with respect to their attitudes toward learning. Data suggest that education majors' attitudes reflect generalized ambivalence toward important subject areas taught in elementary school, with significantly more positive attitudes displayed toward reading and literature. In spite of highly visible recommendations for more extensive academic coursework, results indicate the impracticability of address in teacher competence through added coursework before appropriate attitude adjustment processes have been planned and implemented.

Baxter and Anthony (1993) conducted a study on improving Teaching candidates' Attitudes toward Learning Theoretical knowledge. It was concluded that teacher candidate who were exposed to a theory oriented normative model and given theory - oriented reinforcement within a practice-oriented context would manifest more positive attitudes toward learning theoretical knowledge than those who were not so exposed.

Goodwin and Others (1993) investigated the integration of interactive video technology into a traditional teacher education program, analyses student attitudes about classroom management strategies. Subjects revealed positive attitudes toward the use of interactive video.

Huber et al. (1993) conducted a study on Attitude toward Diversity: Can Teacher Education programme really make a difference. They concluded that teacher education programme was revised to develop sensitive, nurturing teachers who understand student diversity. Pretests and posttests examining students' professional and personal opinion about diversity found that field experiences create significant
differences in attitudes toward diversity and social distance preference in educational settings.

Marso and Pigge (1996) investigated the relationship between pre and post preparation development of attitudes, anxieties and confidence about teaching, and candidate success or failure in making the transition to teaching on 241 teacher candidates and it was found that teacher preparation itself has an impact upon teacher candidates' affective characteristics.

Pigge and Others (1997) studied the development of Attitudes towards Teaching career in a longitudinal sample of Teacher Candidates Progressing Through Preparation and Five Years of Teaching. The study revealed that the development of attitude toward teaching does not follow the same pattern for all teacher candidates and suggested a possible explanation for sometimes apparent contradictions noted in the findings from previous research of teacher attitude development.

White and Joy (1997) conducted a study about the "Effects of Teaching Techniques and Teacher Attitude on Maths Anxiety in Secondary Level Students". The purpose of this study was to determine if teaching techniques and teacher attitudes tend to reduce Math anxiety. The marks of pretest and posttest comparison indicated that both the control and experimental groups began and ended the study with the same level of anxiety. Likewise both groups started the study on the same basic skill level and performed on the same level at the end of the study.

Wang (1999) conducted a study on how a pre-service teacher education program in Taiwan influenced the attitude and teaching behaviours of four elementary pre-service teachers and revealed that the representative pre-service teachers used a variety of instructional approaches to nurture student's positive attitudes towards science and to motivate student higher order thinking through hands-on-experiences and cooperative learning. The attitudes and teaching behaviours held by the pre-service teachers matched reasonably well the teaching philosophy espoused by the teacher's college professors. The linkage between the science teacher preparation programme and pre-service teachers was found to be strong in developing positive attitude towards science teaching.

Zhihuli (2004) found that during the block experience the students became more prepared and confident to teach children who experience reading difficulties, developed new conceptions of teaching and learning process and gained a more positive attitude towards and respect for the teaching profession. They argued that the
pre-service teacher’s professional growth was facilitated by an integrated block of courses that afford time, intensity and richness of experience and by a learning context consistent with the special constructivist experience. They further suggest that it is possible to design and implement a coherent curriculum that is at once, intensely academic and intensely practical. On that emphasis the cultivation of professional knowledge and wisdom, without losing sight of the need for skill development.

2.8.1.2 Background Factors as determinants of Attitude Towards Teaching:

From the analysis of studies it became apparent that a number of background factors also play a significant role in shaping of Attitude Towards Teaching.

2.8.1.2 (a) Attitude Towards Teaching and Classroom Behaviour:

Khatoon (1985) studied the relationship between teacher's classroom verbal behaviour and Attitude towards Teaching found that teachers' Attitude towards Teaching has nothing to do with the teachers' influence in classroom.

Austin (1985) found significant differences between attitudes of teachers and principals concerning various aspects of main streaming practices. Teachers show a great deal of concern about classroom behaviour and academic progress of students, whereas principals tend to show a greater concern about philosophy of students.

Chidolue (1996) conducted a study between teacher characteristics and classroom environment, student achievement and student attitude in high school biology. Classes were studied in an ex-post factor design involving 11 teachers and 375 biology students in Nigeria. Significant positive relationships were found between teacher experience, teacher locality, student attitude and achievement.

Robert and Others (1996) conducted a study of Rural Teachers' Attitudes toward inclusion. Over 60% of respondents indicated that inclusion will not succeed because of resistance from regular education teachers. They do not have the instructional skills and educational background to teach special needs students; regular education teachers prefer sending special needs students to special education classroom rather than having special education teachers deliver services in the regular classroom. Special and regular education teachers should demonstrate collaboration with all special needs students in the regular classroom; necessary resources are not available for inclusion to succeed; and special needs students improve their social skills when in a regular classroom, but they need more attention and assistance than the regular education teacher can provide.
2.8.1.2 (b) Attitude Towards Teaching and Gender:

Poozhikuth (1989) found that female teachers have high Attitude towards Teaching than male teachers and age is not significantly associated with Attitude towards Teaching whereas length of service is associated with Attitude towards Teaching.

Anderson (1995) studied about the pre-service Teacher's Attitude toward children. Results from a teacher attitude questionnaire given to 1,405 pre-service teachers revealed large differences in attitudes toward children, associated with age, gender, and major. The most positive were females in elementary, least positive males in secondary level. Those in special education were most positive in music, art and physical education least positive. Whether these attitudes manifest themselves in the classroom remains unknown.

2.8.1.2 (c) Attitude Towards Teaching and Professional Development:

Gary and Others (1993) conducted a study about the Professional Development School's Impact on Student Teacher's Attitudes. Two groups of student teachers were compared. A one way analysis of variance revealed significant differences for 7 of the 38 items.

2.8.1.2 (d) Attitude Towards Teaching and Subject/Stream:

Karen and Silliman (1991) conducted a study on the Elementary School Teachers' Attitudes toward Mathematics. The teaching behaviour and instructional methods of elementary school teachers were investigated to determine whether teachers with positive attitude toward Mathematics employ different methods in Mathematics instruction than those with negative attitudes. Overall, teachers with negative attitudes employed methods that fostered dependency whereas teachers with positive attitudes encourage student initiative and independence.

Jan, Janet and Others (1997) conducted a study about the science process skills and Attitudes of pre-service Elementary Teachers. This study examined whether there was a relationship between pre-service elementary teachers' competency in science process skills and attitude towards the field of science. Data analysis found a significant positive relationship between how well teachers performed science process skills and their attitudes toward science. The two subscales that significantly correlated with the performance of science process skills are the confident in learning science scale and the teacher scale.

Cornelious (2000) investigated the factors affecting teacher competence of teacher trainees at the secondary level revealed that intelligence, Attitude towards
Teaching profession and Academic Achievement of teacher trainees are the discriminating factors of the different groups of subjects.

2.8.1.2 (e) Attitude Towards Teaching and Experience of Pre-service Teachers: 
Marie and Others (1995) in their study investigated the effects of early field experience on the attitudes of elementary pre-service teachers toward teaching. Pre-test and post-test data were collected by means of an instrument employing a semantic differential scale measuring attitudes towards teaching. Results offer support for the inference that these pre-service elementary teachers have positive attitude towards teaching prior to early field experience and have even more positive attitude towards teaching after their field experience.

Marso and Pigge (1998), in a study, found that candidates teaching 7 years after commencement of teacher preparation possess theoretically more desirable affective traits than non-teaching candidates.

Bakari (2000) while studying the development and validation of an instrument to measure pre-service teachers’ Attitude towards Teaching. African American students suggested that TAASS (The Teaching African American Student Survey) is a measurement of pre-service teacher’s Attitude towards Teaching African American students that has evidence of validity and reliability. It has acceptable psychometric properties and it captures the duality of pre-service teacher’s Attitude towards Teaching African American students, namely willingness to teach African American students and cultural sensitivity towards African American students.

2.9 Research Studies Conducted on Thinking Style in India:
This section presents review of related Indian studies on Thinking Styles. These were further analyzed in terms of determinants of Thinking Style and effects of Thinking Styles.

2.9.1 Determinants of Thinking Style:
For the sake of systematic analysis determinants of Thinking Styles were divided into two categories viz. Psychological factors and Background factors.

2.9.1.1 Psychological Factors As Determinants of Thinking Style:
From the scrutiny of studies it was found that Thinking Styles have been studied in context of number of variables.
2.9.1.1 (a) Thinking Style and Personality:

Sood (2000) reported that students having extrovert and introvert type of personality exhibited significant difference on judicial Thinking Style. Extroverts were found to be higher on judicial Thinking Style than introvert type students. He further reported that female students tend to employ external style of thinking more than male students.

Sharma (2002) in the study of college students found that low achievement were significantly higher on right hemispheric Thinking Styles than the low achievers, no gender difference in left right and integrated styles, science students were more left hemispheric Thinking Style dominated than the arts students whereas, arts students have more right hemispheric Thinking Style as compared to science and commerce students. Introvert students were more inclined towards left hemispheric Thinking Style than extrovert students. Neurotic and stable students did not show any significant difference in their Thinking Styles, students with high and low levels of intrinsic motivation and extrinsic motivation also did not differ significantly on their Thinking Styles.

Verma and Sharma (2003) undertook a study to determine Thinking Styles of prospective secondary teachers in relations to gender, residence stream, intelligence and personality type. Thinking Styles were assessed through Sternberg and Wagners Thinking Style inventory. The results revealed that male Prospective Teachers were more oligarchic in their Thinking Styles than their female counterparts. Stream was found to be significantly related to right Thinking Style. Personality type was also found to be associated with two Thinking Styles.

2.9.1.1 (b) Thinking Style and Self Esteem:

Bhatnagar and Rastogi (1986) found that field independent university students had a more positive and psychologically better developed sense of identity than did those who field dependent.

Attri (2003) found that the principal having different levels of administrative effectiveness decisional self-esteem, decisional stress, age and administrative experience are significantly different on their Thinking Styles.

2.9.1.1 (c) Thinking Style of Prospective Teachers:

Aggrwal and Sexena (2011) studied Thinking Styles of Prospective Teachers. The analysis of Thinking Style of Prospective Teachers has revealed that the oligarchic and conservative Thinking Styles are least prevalent among them. Liberal Style of
Thinking is the most prevalent among the males followed by external and hierarchic styles. However, among female Prospective Teachers, liberal Thinking Style falls at the fourth place in terms of the mean scores. Female scores were more on External, Hierarchic and Executive Styles of Thinking. Liberal and external Thinking Styles are more prevalent in urban Prospective Teachers and external Thinking Style dominates the rural prospective teachers.

2.9.1.2 Background Factors As Determinants of Thinking Style:

From the analysis of studies it became apparent that a number of background factors also play a significant role in the shaping of Thinking Styles.

2.9.1.2 (a) Thinking Style and Gender:

Gupta and Gupta (1984) found that female had integrated and males had right style at college level.

Verma (1994) reported that male students had left hemispheric style inclination than female students.

Sundaram and Kumar (2000) found that there was association between hemisphericity and sex of students at higher secondary level. Girls were right hemispheric dominated (boys 28.78%, Girls 71.21%) and boys left hemispheric dominant (Boys 51.26%, Girls 48.73%).

Verma (2001) studied gender difference in Thinking Styles of senior secondary students. The data was collected through Sternberg’s Thinking Style inventory. Statistical analysis yielded that female students were superior to male students on executive Thinking Style.

Kumari (2001) found that there was no significant difference in Thinking Style of male and female post-graduate students in second semester, but in next semester female students were found to be significantly higher on anarchic Thinking Style.

Verma (2001) undertook a study to ascertain the differences in Thinking Styles of college students based on sex, course type and residential background. Gender differences were observed in some Thinking Styles. Female students scored significantly higher than male students on legislative and executive styles. On the other hand, male students scored significantly higher than female students did monarchic style. On rest of the Thinking Styles, sex difference did not emerge as significant.
Sood (2002) concluded that legislative and liberal Thinking Styles of high, average and low creative student differ significantly. However, there is no significant difference between average creative and low creative students with Thinking Style and on rest of Thinking Styles. Three groups of creative students don't show any significant difference. There is no interrelation between the creativity and gender with reference to any Thinking Style. There is no significant interaction between creativity and school location with regard to Thinking Style. Finally, creative student belonging to science and art stream differ significantly on monarchic and external Thinking Style.

Kumari (2003) showed that male and female students differ significantly with respect to judicial and executive style of thinking.

2.9.1.2 (b) Thinking Style and Subject/Stream/Faculty:
Ghose (1980) compared Thinking Styles of musically, artistically and mathematically gifted students. The analysis of data yielded that mathematically gifted students had left and integrated hemispheric style while musically gifted students had more right and integrated styles and artistically talented showed a right hemispheric style of thinking.

Raina and Vats (1983) observed that females had higher scores in right hemispheric style of thinking in comparison of males but the differences in mean scores was not statistically significant.

Raina and Vats (1983) in the same study reported that arts students had greater scores in the right hemispheric style of thinking in comparison to science students but the difference in mean scores was not significant.

Misra (1998) reported that in general, students belonging to commerce, management and fine arts mostly prefer right hemispheric style of thinking. On contrary, students belonging to arts prefer to left hemispheric style of thinking science students, however, found to use left and right hemispheric styles of thinking.

2.9.1.2 (c) Thinking Style and Residence:
Suresh (1990) undertook a study to find out the relation between hemispheric information processing styles and Achievement-Motivation. The result showed a significant positive correlation between integrated functioning of both the hemispheric (left and right) and Achievement-Motivation and a significant negative correlation with anxiety.
Sundaram and Kumar (2000) were associated between rural and urban residential background students and their Thinking Styles. Urban students were found to have more inclination towards right hemispheric Thinking Style and rural students were found to possess more likely towards the use of left hemispheric Thinking Style.

Verma (2001) found that rural territory students were more inclined to use hierarchical style of thinking and the urban history students were more prone to use oligarchic style than their counter part students.

2.10 Research Studies Conducted on Learning Style in India:

This section presents review of related Indian studies on Learning Styles. These were further analyzed in terms of determinants of learning style and effects of learning styles.

2.10.1 Determinants of Learning Style:

For the sake of systematic analysis determinants of Learning Styles were divided into two categories viz. Psychological Factors and Background Factors.

2.10.1.1 Psychological Factors As Determinants of Learning Style:

From the scrutiny of studies it was found that Learning Styles have been studied in context of number of variables, in brief they are presented in the following paragraphs.

2.10.1.1 (a) Learning Style and Intelligence:

Singh (2001) observed that high and average intelligent boys had Individualistic and long attention span Learning Styles. The group of high and low intelligence girls had non-individualistic and short attention span Learning Styles. Low intelligent boys and girls were not found different in their Learning Style preferences.

2.10.1.1 (b) Learning Style and Creativity:

Aggarwal (1983) reported that high creative students had preference for flexible, visual, field dependent and environment oriented Learning Styles, while low creative students preferred non-flexible, aural, field dependent and environment free Learning Styles.

Verma (1992) did not observe any significant relationship between students having more and less creative personality.

Verma (1993) reported that high and low creative students differed significantly on ‘meaningful orientation’ of learning and its two components (relating ideas and comprehension learning). Though they did not exhibit significant difference
on reproduction orientation of learning but more fear of failure was shown to try low creative students.

2.10.1.1 (c) Learning Style and Personality:
Singh (2001) found that extrovert boys and girls were not found different in their preference. At average level, boys were found to be individualistic whereas the girls were non-individualistic in their Learning Style. The introvert boys were found individualistic and fewer environments oriented than the introvert girls. The introvert boys appeared to have long attention span and introvert girls reflected short attention span Learning Styles. At neurotic and an average neurotic level, the boys were individualistic and the girls were not-individualist in Learning Style. Stable girls were found to have short attention span and stable boys have long attention span Learning Style. Stable girls also appeared higher in visual Learning Style than the stable boys.

2.10.1.1 (d) Learning Style and Locus of Control:
Verma (1994) made an attempt to ascertain whether learning modes and Learning Style of University students differed as a function of their locus of control. The results of the study revealed that students with internal and external locus of control were found to be similar with respect to four learning modes viz. concrete experience, abstract conceptualization, reflective observation and active experimentation. They were also found alike with regard to four Learning Styles namely diverger, converger, assimilator, and accommodate Learning Styles.

2.10.1.1 (e) Learning Style and Self Esteem:
Bhatt (1987) reported that there was significant positive relationship between self-concept and elements of Learning Style of Scheduled Tribes students. Learning Style measured by Hindi adopted version of Learning Style Inventory of Dunn and Dunn.

Srivastava (1992) studied the effect on self-concept on the Learning Style preferences of high school pupils. The findings of the study revealed that as the self-concept level of urban increased, showed increased preferences for flexible, non-individualistic, visual independent; and environment free Learning Styles. With the increase self-concept the rural boys showed their increasing preferences towards flexibility, non-individualistic visual, field-dependent attention span, and free Learning Style.

Verma (1993) studied the difference in Learning Style of adolescent girl students possessing high and low self-concept. The findings indicated that girls processing high self-concept seemed to prefer field independent and long attention
span Learning Style while girls with low self-concept seemed to prefer field dependent and short attention span leaning styles. On rest of the Learning Styles, girls having high and low level of self-concept did not exhibit any significant difference.

2.10.1.1 (f) Learning Style and Self-Actualization:
Verma (1996) undertook a study to explore the effects of personality and motivation on Learning Styles of University students. The results showed no significant difference in learning modes and Learning Styles of students having high, medium and low level of self-actualization.

2.10.1.1 (g) Learning Style and Socio–Economic-Status:
Singh (2001) reported that boys from high and low SES preferred individualistic Learning Style, while boys from average SES preferred non-individualistic Learning Style. The girls from high SES and average SES preferred non-individualistic, field-dependent and motivation centered Learning Styles, while girls from low SES showed preference for individualistic Learning Style.

2.10.1.1 (h) Learning Style of Prospective Teachers:
Verma (1997) reported that sex differences did not exist in Learning Styles of Prospective Teachers but, high and low achieving Prospective Teachers were found to differ significantly on three styles of learning. High achieving group had significantly higher mean scores on deep processing style, elaborative processing and fact retention than low achieving group.

Verma (1999) observed that there were no significant differences in cerebral hemispheric styles of pre-service teachers who had high and low levels of self-esteem. But, pre-service teachers with high self-esteem were found more prone to deep processing style of learning than their counterparts pre-service teachers with low self-esteem.

2.10.1.1 (i) Learning Style and Cognitive Style:
Shrivastav (1992) reported that students with high deep processing Learning Style tended to be more field-independent than those with low deep processing. Students with high and low on methodical study, fact retention and elaborative processing Learning Style did not show any significant difference in their field independent/field dependent cognitive style.

Littin (2001) found that specific Learning Style elements correlated significantly with measures of cognitive style and hemispheroids.
2.10.1.2 Background Factors As Determinants of Learning Style:

From the analysis of studies it became apparent that a number of background factors also play a significant role in the shaping of Learning Styles. In the following paragraphs, such factors have been listed along with results.

2.10.1.2 (a) Learning Style and Gender:

Agrawal (1982) investigated Learning Style preferences of secondary students in relation to gender. For identifying Learning Style preferences of students Learning Style Inventory constructed by the investigator was used. The most preferred Learning Style of boys came out to be flexible, motivation centered, environment oriented, field dependent, individualistic visual and short/long attention span. While most preferred Learning Style of girls were flexible, environment oriented, aural, long attention span, motivation centered, individualistic and field dependent.

Singh (1987) observed that high school boys showed more preferences for quiet atmosphere and dim light than girls. But girls preferred cool temperature more often than boys. Boys showed less preference for an adult motivation than girls. Girls showed more reliance on self-motivation than boys. There options were clear and more varied than those of boys. Girls have more linking for group-work than boys. They liked to study more in pairs than their counterparts. Boys had shown linking for more auditory experiences than girls. But, they did not like to take anything at the time of their studies. They preferred to study in later period of day and night. However, they were more mobile than girls at the time of their studies.

Kumari and Verma (1988) investigated the Learning Style preferences of senior secondary students in relation to their gender. The result of the study revealed that there were gender differences in case of three comparisons of Learning Styles. Make students exhibited stronger preferences for individualistic Learning Style whereas female students demonstrated more preference for field independent and environment oriented Learning Style. However, no sex differences were observed with regard to rest of Learning Styles. The investigator concluded that gender differences were partly related with Learning Style preferences.

Verma (1994) studied Learning Styles of distance learners and reported that there was no significant gender difference in Learning Styles.

Prakash (2006) reported that male prospective secondary teachers preferred learning through abstract conceptualization and active experimentation, whereas
female Prospective Teachers preferred learning through concrete experience and reflective mode. Further, it was found that female Prospective Teachers had greater preference for imaginative Learning Style, whereas male Prospective Teachers showed greater preference for precision Learning Style. On assimilation/analytical and accommodation dynamic Learning Style gender differences were not found significant.

2.10.1.2 (b) Learning Style and Residence:
Verma (1991-92) undertook a study of ascertain the relationship between rural-urban residential background and Learning Style preference. The analysis of data revealed that Learning Style preferences of female students were significantly related to their residential background in two out of seven sets of Learning Styles. Students belonging to rural residential background tended to show more inclination for non-individualistic Learning Style while students coming from urban residential background demonstrated their more preference for individualistic Learning Style. Further, students with rural residential background exhibited similar preferences for environment oriented Learning Styles than free Learning Styles while students with urban residential background indicated their stronger preferences for environment oriented Learning Styles than environment free Learning Styles.

2.11 Research Studies Conducted on Emotional Intelligence in India:

2.11.1 Emotional Intelligence, its Significance and Historical Perspectives:
Roopsmit (2002) confirmed that Emotional Intelligence increases with age. Thus, emotional maturity can leads to higher Emotional Intelligence in individuals.

Pradhan, Bansal, and Biswas (2005) conducted a study showed the positive relationship between Emotional Intelligence and Personal Effectiveness. This has a number of implications for work related performance factor. This kind of assessment of identifies, analyse and understand the emotional nature of individual and their personal attributes. This help in the long run to foster Emotional Intelligence and enhance personal effectiveness.

2.11.2 Emotional Intelligence and its Significance for Prospective Teachers:
Singh (2003) attempted to find whether different professions require different Emotional Intelligence. Further he graded the professions in descending order of Emotional Quotient. The findings of his study revealed that teaching profession requires high Emotional Quotient of the range of 270-280. Secondly he made cluster
analysis where all the 18 professions he studies were grouped into clusters. The professions falling into one cluster required an equal level of Emotional Quotient level.

**Bansibihari and Pathan (2004)** studied the level of Emotional Intelligence of secondary teachers in relation to gender and age. 500 secondary teachers ranging from 24 to 56 years of age were selected from different secondary schools both, urban and rural from Dhule District of Maharashtra. Out of these, 350 were male and 150 female. The results indicated that nearly all (98.4%) the teachers fall under “Low” category of Emotional Intelligence. There is no significant difference between the Emotional Intelligence of males and females and age is independent of Emotional Quotient.

**Negi (2011)** studied an Emotional Intelligence of Teachers Working in Government and Private Senior Secondary Schools. It was found male teachers are not significantly different from female teachers on the intrapersonal management component of Emotional Intelligence. Teachers from Government Schools are significantly higher on intrapersonal management component of Emotional Intelligence than of private school teachers. Government and private school teachers do not differ significantly from each other on Interpersonal Management component of Emotional Intelligence. Government and private School teachers differ significantly from each other on total Emotional Intelligence.

### 2.11.3 Emotional Intelligence and Assessment of Tools:

**Chadha (2001)** has devised a measure of Emotional Intelligence (EI) which has been standardized on Indian managers, businessmen, bureaucrats and industrial workers. The test contains 15 situations measuring different emotional responses and their blends. The retest reliability was 0.92. The empirical validity of the scale to a sample of 60 subjects was found to be 0.89.

**Chadha and Singh (2003)** constructed a devise to measure the Emotional Intelligence of general adults and it has been standardized on Indian population. It has a reliability of 0.94 and validity of 0.92.

**Mangal and Mangal (2004)** constructed a devise to measure the Emotional Intelligence of general adults. It has been standardized on the college going population of the graduate students (including B.Ed. students).
2.11.4 Emotional Intelligence and Different Factors:

Thingujam and Ram (1999) reported that Emotional Intelligence was co-related with trait anxiety coping with stream and belief in social relations yielding significant \( r = .36, .50 & .27 \) respectively. They also found that females seemed significantly higher than males on Emotional Intelligence.

Pradhan et al. (2001) examined the concept of EQ competencies and leadership effectiveness in middle level managers in India. This study reported a positive relationship between the two.

Mansi (2002) attempted to study the relationship between Emotional Intelligence and decision making among Indian managers. The findings indicated that not only academic qualifications of managers were important but have Emotional Intelligence was also a factor in decision making.

Regina (2002) conducted a study of Emotional Intelligence burnout and conflict resolution styles of executives. The finding indicated that there was no significant difference in their means scores of Emotional Intelligence. The results further indicated that executive with above and below average Emotional Intelligence were found to be significantly different on smoothing and collaborative resolution styles. Above EQ executive were superior in their two styles than that of counterparts. However, no significant relationships were found between Emotional Intelligence and Burnout measures.

Singh (2003) conducted research on India organization and managers in Indian industry which indicated that leaders should learn to be optimistic to boost their self-esteem. High self-esteem gives a manager realistic confidence to perceive challenges as learning opportunities.

2.12 Research Studies Conducted on Achievement-Motivation in India:

This section presents review of related Indian studies on Achievement-Motivation. These were further analyzed in terms of determinants of Achievement-Motivation and effects of Achievement-Motivation.

2.12.1 Determinants of Achievement-Motivation:

For the sake of systematic analysis determinants of Achievement-Motivation were divided into two categories viz. Psychological factors and Background factors.

2.12.1.1 Psychological Factors As determinants of Achievement-Motivation:

From the scrutiny of studies it was found that Achievement-Motivation have been
2.12.1.1 (a) Achievement-Motivation and Locus of Control:

Mishra (1983) studied the association of locus of control, creativity, and educational achievement of urban, rural, and tribal children. The findings of the study were:

i) The trait locus of control was significantly related to creativity and educational achievement.

ii) The internal locus of control subjects secured higher scores on creativity, educational achievements than external locus of control subjects.

iii) The relationship between locus of control and creativity and between locus of control and educational achievement were positive and statistically significant. The locus of control scores were higher for the urban disadvantaged children compared to those of the rural and tribal children.

Mistry (1985) investigated need achievement, job satisfaction, job involvement as a function of role stress, locus of control, and participation in academic climate of college and secondary school teachers. The results showed that no significant relationship was observed between locus of control and various dimensions of job satisfaction.

Sharma (1985) carried out an investigation on locus of control among higher and lower achievers at different levels of socio-economic status. He found that locus of control was significantly related to socio-economic status of the students. The means of locus of control scores and socio-economic were found to be indicative of the fact that low SES groups were non-internal than high SES groups of students.

Beharwal (1987) investigated into locus of control and attribution of responsibility for success and failure. The findings showed that there was an overall trend for internals as contrasted to externals to attribute their performance outcome to personal source. High achievement oriented attributed the outcome to ability and internals. Low achievement oriented subject’s perceived outcome as due to fate and externality. Internals with high Achievement-Motivation had greater faith in their higher ability and sufficient effort expenditure. They also consider it to be the function of internality, stability, and controllability. The externals held fate and family environment responsible for the outcome.

Verma and Sharma (1988) studied Academic Achievement as a function of locus of control among adolescent students. The findings revealed that there was
negative coefficient of correlation between scores of locus of control and marks of Academic Achievement of students, suggesting internal subjects get higher Academic Achievement marks and external subjects get lower Academic Achievement marks. But the correlation was not found to be placed in the conclusion. Extreme group analysis also did not yield any significant difference in the mean scores of locus of control.

Verma, Sharma and Sinha (1989) conducted a study on locus of control and self-concept of higher, backward and scheduled caste students. The finding revealed that there were no significant differences among the three groups with regards to these variables.

Kothari (1993) conducted a study on the effect of locus of control, an anxiety and Achievement-Motivation. The findings of study were:

1. The internals differed significantly from the externals in their anxiety.
2. It was found that externals were more anxious than internals.
3. It was also found that the internals differ significantly from externals in their Achievement-Motivation.
4. On comparing the internals and externals, it was found that the internals were significantly highly Achievement-Motivation than externals.

Karunanidhi and Sai (1995) conducted a study on religious attitude, locus of control and Achievement-Motivation of students belonging to different religions. The study revealed that:

1. No significant correlation was found between religious attitude and locus of control, Achievement-Motivation and locus of control whereas, religious attitude and Achievement-Motivation was found to have high correlation.
2. Significant difference was found among three religious groups in terms of religious attitude and Achievement-Motivation except on locus of control.
3. Significant difference was found on religious attitude but not on locus of control and achievement. Difference was noticed on religious attitude expressing favorable attitude towards religion by boys than girls.

Bansal, Thind and Jaswal (2006) conducted a study entitled “Relationship between quality of home environment, locus of control and Achievement-Motivation among high achiever urban female adolescents.” They found that quality of home environment plays an important role in determining magnitude of Achievement-
Motivation and internal locus of control for high level of Academic Achievement. The result also subscribed to the view that where parents of high achievers provide good quality home environment, ensuring balance in all its quality dimensions, children get induced to higher achievement level and tend to inculcate internal locus of control.

2.12.1.1 (b) Achievement-Motivation and Emotional Maturity:

Choudhari and Uppal (1996) conducted a study on Achievement-Motivation and emotional maturity of adolescents staying at home and orphanage. Study revealed that adolescents staying at homes with parents had higher level emotional maturity as compared to their counterpart staying in the orphanages.

Hungal and Aminabhavi (2007) conducted a study on self-concept, emotional maturity and Achievement-Motivation of the adolescent children of employee mothers and home makers. The study revealed that children of employed mothers have significantly high emotional maturity as compare to their counterparts. The children of employed mothers are more socially maladjusted and lacked independence to a very highly significant level as compare to the children of home markers. Female children of home makers have significantly higher emotional maturity compare to male children.

2.12.1.1 (c) Achievement-Motivation and Psycho-Social Factors:

Mansuri (1980) found that

(i) Grade was an effective variable in Achievement-Motivation. The difference among means of grade V, VI and VII were significant in favor of successive grades. The students of successive grades show successive achievement in Achievement-Motivation.

(ii) The students with high SES levels were found to be significantly higher in their achievements than those with low SES levels.

(ii) The students having high levels of motivation towards school were better in Achievement-Motivation towards school.

(iii) The students having good general ability had high levels of Achievement-Motivation.

2.12.1.1 (d) Achievement-Motivation and Academic Achievement:

Tripathi (1986) found that

1. The average level of Achievement-Motivation of boys and girls was found to be low.
2. The achievement made a remarkable contribution to the variance in achievement values and anxiety scores.

3. Achievement-Motivation of boys and girls was significantly correlated with intelligence and achievement.

4. It was found that among the correlation of Achievement-Motivation, Academic Achievement proved to be the most dominant factors.

Kamalanabhan and Iayer (2006) studied Achievement-Motivation and performance of scientist in research and development organization. They found that Achievement-Motivation is not a one-dimensional construct. Rather, it would appear to be a derivative of a set of other more specific Achievement-Motivation.

Kaur (2007) studied the Achievement-Motivation of students in schools without smart classes and school with smart classes and found that use of technology of smart classroom in school has a positive influence upon the level of Achievement-Motivation of the students.

Chaturvedi (2009) studied the effect of environment on Achievement-Motivation and Academic Achievement and found that the most important factors associated with children’s school environment and Academic Achievement are the teacher-student relationship, security of school and parents and school relationship. Further, more lack of attachment may lead to a sense of isolation in school and could eventually result in school failure.

2.12.1.2 Background Factors As Determinants of Achievement-Motivation:

From the analysis of studies it became apparent that a number of background factors also play a significant role in the shaping of Achievement-Motivation. In the following paragraphs, such factors have been listed along with results.

2.12.1.2 (a) Achievement-Motivation and Socio-Demographic factors:

Gokulnathan (1972) reported that tribal students had significantly higher level of Achievement-Motivation than non-tribal students.

Singh (1979) conducted a study on personality of tribal students of undergraduate college. The results revealed that Santal students were lower in Achievement-Motivation than not-Santals.

Chauhan (1984) reported that scheduled tribe and scheduled caste students did not differ significantly in relation to their Achievement-Motivation. However, scheduled caste boys and girls had slightly higher Achievement-Motivation than the
scheduled tribe boys and girls. Boys and girls did not differ significantly in relation to their Achievement-Motivation.

**Fatmi (1986)** conducted a study of achievement related motivation among tribal and non-tribal high school students. The major conclusion was that racial background significantly influenced the achievement related motivations.

**Balkrishanan (1990)** observed that Christian tribal had higher level of Achievement-Motivation than non-Christian tribal students.

**Nayak (1990)** reported that Achievement-Motivation for success; Achievement-Motivation for failure and Achievement-Motivation for total of non-tribal children were significantly higher than that of tribal students.

**Narain (1996)** found that: (i) tribal women had significantly lower achievement-motivation than the non-tribal women; and (ii) Achievement-Motivation of santal tribal women varied significantly by the effect of mother’s education.

**Chand (2005)** studied the effect of socio demographic factors on Achievement-Motivation of high school students and observed that:

1. Boys and girls do not differ significantly in relation to the Achievement-Motivation. Girls have slightly higher mean of Achievement-Motivation scores than the boys but, this difference is not significant statistically.
2. The Achievement-Motivation of students belonging to different social categories, i.e. general category, scheduled castes and scheduled tribes do not differ significantly. However, the student belonging to scheduled tribe category have highest mean of Achievement-Motivation scores followed by general category and scheduled caste student. But, this difference is not statistically significant.

**Anand (2006)** found that

1. The girls have higher means of Achievement-Motivation scores than boys.
2. The students belonging to different social categories i.e. scheduled caste and scheduled tribe and general did not differ significantly in their Achievement-Motivation.
3. Gender and social category did not interact significantly with regard to their Achievement-Motivation.

**Mahavidya (2008)** found that gender difference in Achievement-Motivation is significant. Male students have higher and average level on Achievement-Motivation respectively. Caste rendered significant effect on Achievement-
Motivation. Further, scheduled caste students have higher Achievement-Motivation while other backward and nomadic tribes’ students have below average Achievement-Motivation. Caste, gender and economic background of family do not jointly affect Achievement-Motivation of college students.

2.12.1.2 (b) Achievement-Motivation and Gender:
Gokulnathan (1972) conducted a study on “Achievement-Motivation and educational achievement among secondary school pupils and found that girls have an overall significantly higher Achievement-Motivation than the boys.

Aggarwal (1974) found that girls have a significantly higher Achievement-Motivation as compared to boys.

Ahluwalia (1985) found that
1. Sex of child had no effect on Achievement-Motivation.
2. Age was significantly and positively related to Achievement-Motivation.
3. Achievement-Motivation was not affected by birth order.
4. Father’s education significantly affected Achievement-Motivation while mother’s education had no effect on achievement of children.
5. Achievement-Motivation was not affected either by father’s occupation/mother’s occupation.

Singh (1986) found that
1. Boys and girls do not differ significantly in relation to their Achievement-Motivation.
2. Adolescent coming from nuclear family have significantly higher Achievement-Motivation as compared to the adolescents coming from joint families.
3. Sex and type of family do not interact significantly in relation to Achievement-Motivation.

Singh et al. (2002) found that
1. Highest mean was found in case of female distance learners on competitiveness component of Achievement-Motivation.
2. The male distance learners from rural area had a better score on the work, mastery and competitiveness of Achievement-Motivation.
3. There is no significant difference between male and female distance learner on work, mastery and competitiveness of motivation.
4. There is no significant difference between rural and urban distance learners on work, mastery and competitiveness of Achievement-Motivation.

Sharma et al. (2006) observed that
1. No relationship was found between self-concept and Achievement-Motivation among boys, while a significant positive relationship is found between self-concept and all dimensions of Achievement-Motivation among girls.
2. There is no significant positive relationship between self-concept and all dimensions of Achievement-Motivation among boys.
3. Both, boys and girls have shown a significant positive relationship between Achievement-Motivation and achievement in Mathematics.

2.12.1.1 (c) Achievement-Motivation and Subject/Stream:

Tiwari (2009) studied the Achievement-Motivation across different academic major and found that student of science faculty have significantly high Achievement-Motivation than the student other faculties which is possible because in the science major student looking the more career opportunities and in real condition in the science faculty available many better opportunities in comparisons to other academic majors.

2.13 Research Studies Conducted on Attitude Towards Teaching in India:

This section presents review of related Indian studies on Attitude Towards Teaching. These were further analyzed in terms of determinants of Attitude Towards Teaching and effects of Attitude Towards Teaching.

2.13.1 Determinants of Attitude Towards Teaching:

For the sake of systematic analysis determinants of Attitude Towards Teaching were divided into two categories viz. Psychological factors and Background factors.

2.13.1.1 Psychological Factors As Determinants of Attitude Towards Teaching:
From the scrutiny of studies it was found that Attitude Towards Teaching have been studied in context of number of variables, in brief they are presented in the following paragraphs.

2.13.1.1 (a) Attitude of teachers, Self-Concept and Social Maturity:
Ganapathy (1992) studied the self-concept of student teachers and their Attitude towards teaching profession and found that both male and female teachers had a favourable Attitude towards teaching profession. Similarly, both male and female student teachers had a positive self-concept.
2.13.1.1 (b) Attitude Towards Teaching, Adjustment, Interest and Values:

Mehta (1985) studied the change in the attitude and values of teacher trainees with respect to some personality variables and found that the impact of teacher training programme in the CIE was such that a significant positive change in the attitude took place in all sub groups of subjects and the maximum positive change took place in the subgroup of high extroversion with low psychoticism and low neuroticism. The impact of teacher training programme was such that theoretical, aesthetic and political values changed negatively as a result of the effect of extroversion, psychoticism and neuroticism.

Rao (1986) found inter -relationship of values, adjustment and teaching attitude of pupil- teachers. It was found that impaired emotional adjustment adversely affected home, health, social and educational adjustments. It also retarded proper functioning and adequate development of attitude conducive to effective teaching. It significantly disrupted proper procurement of knowledge value. Correlations revealed that proper adjustment to all areas, favourable attitude towards other attitude components, high regards for social, knowledge and aesthetic values; and curtailment of over weights already placed upon hedonistic, power and economic values, promoted desirable attitude towards pupils (ATP).

Shakuntala (1999) studied the teacher adjustment as related to interest in and Attitude towards Teaching and found that there was a significant and positive correlation between adjustment of secondary school teachers and their interest and Attitude towards Teaching. Difference in interest in teaching, aptitude towards teaching, sex, types of management, marital status, age and experience of secondary school teachers accounted for significant difference in their adjustment.

2.13.1.1 (c) Attitude Towards Teaching and B. Ed course:

Roy (1971) studied the relationship between teacher attitude and teaching efficiency and found a positive relationship between them.

Mehrotra (1973) studied the effect of teacher education programmes on the attitude of teachers towards the teaching profession revealed that the attitude of those who completed the course was more favourable than those who did not. The attitude of female students was more favourable than that of the male students. The mean attitude score of full time students was lower than that of correspondence course students at the beginning of the course but it was higher at the end. The attitude of
higher age group was more favourable and it increased as the age increased except a
decrease in between the age group thirty two to thirty six.

Naidu (1974) in his study on career orientation and professional preparation
among the women teacher trainees revealed that women took up teaching profession
due to its suitability to their nature and temperament. The women teacher had positive
attitude towards career building. The two roles viz. career and home making,
produced role conflict in majority of the married women teachers. The teacher taught
relationship seemed to be deteriorating. The training colleges work as vital organs in
smoothen the process of career orientation, job motivation and professional
preparation among the teacher trainees.

Dash (1985) found that the private training colleges in the state of Orissa were
established mostly with commercial motives and parochial feelings. Faulty admission
procedures for trainees and their negative Attitude towards Teaching profession were
indicators of poor performance of the training programme. Inadequate physical
facilities, in-efficient teachers, poor quality of trainees, unsuitable practice teaching
and undue expansion of training colleges, were reflected as the responsible factors for
the poor status of teacher-training programme in the state.

Srivastava (1989) in his study examined the impact of teacher education
programme on pupil-teacher’s attitude and teaching efficiency and revealed that most
of the trainees group changed their teacher attitude positively and significantly and
appreciable improvement in their classroom teaching performance. But the
experienced male trainees did not show any change in their teacher attitude. After the
completion of the training, the female showed better teacher attitude and aptitude than
the male trainees.

Gupta and Srinivasan (1990) found a marked change in the Attitude towards
Teaching profession and the equality of enrolment in the B.Ed. course as far as female
candidates were concerned. The reason for joining the B.Ed. course revealed that the
teaching as a profession enjoyed high status in the eyes of female B.Ed. trainees.
Value preference of the trainees revealed a positive trend and indicated that the value
crisis was not really all pervasive.
2.13.1.2 Background Factors As Determinants of Attitude Towards Teaching:
From the analysis of studies, it became apparent that a number of background factors also play a significant role in the shaping of Attitude towards Teaching. In the following paragraphs, such factors have been listed along with results.

2.13.1.2 (a) Attitude Towards Teaching and Qualification of Teacher:
Bhandarkar (1980) in a study on polytechnic teacher's Attitude towards Teaching profession and its correlation found that Attitude towards Teaching profession is not significantly related to the qualification of the teachers.

2.13.1.2 (b) Attitude Towards Teaching and Gender:
Sukhwal (1976) conducted study on attitude of married lady teachers towards teaching profession, those teachers who have favourable Attitude towards Teaching profession has the highest percentage of problems in actual work situations.

Ramakrishnaih, (1980) revealed through his study that women teachers have a significant and more favourable Attitude towards Teaching than men teachers.

Gupta (1984) conducted a study on Attitude of Teachers and found that male and female teachers differ significantly in Attitude towards Teaching profession.

Rawat and Sreevastava (1984) conducted a comparative study of the attitude of male and female teacher trainees towards teaching. Significant difference was found between male and female teacher trainees in their Attitude Towards Teaching profession.

Ramachandran (1991) conducted an enquiry into the attitude of student teachers towards teaching and found that the regular college teacher trainees had a more favourable Attitude towards Teaching than correspondence course teacher trainees and female teacher-trainees had more favourable Attitude towards Teaching than male teacher trainees. The sons and daughters of teachers had a highly favourable Attitude towards Teaching.

Kumar (1995) found that there is significant difference in the attitude of male and female teacher trainees towards teaching profession. Reddy (1995) studied the attitudes of student teachers and success of student teachers and reported that attitude of teachers do not significantly influence the success of student teachers.

Balan (1996) found no significant gender difference in Attitude towards Teaching of student teachers of Kerala and there exists significant relationship between Attitude towards Teaching and self-concept of the female student teachers.
2.13.1.2 (e) Attitude Towards Teaching, Teaching Experience and Job Satisfaction:

Pushpam (2003) while examining the attitude of women teachers towards teaching profession on a sample of 725 teachers found significant and positive relationship between attitudes of women teachers towards teaching profession and job satisfaction.

Devi (2005) found that moderate and highly significant correlation exists between success in teaching and the predictor variables like role conflict, Attitude towards Teaching profession and job satisfaction. It was also reported that role conflict and Attitude towards Teaching profession are the two variables capable of significantly and efficiently discriminating between successful and less successful groups of women teachers of Kerala.

Suja (2007) found that Attitude towards Teaching, interest in teaching and teaching experience have significant main effect on job commitment of teachers.

2.14 Research Studies Conducted on Learning Styles and Achievement-Motivation:

Studies on the relationship of Achievement-Motivation and Learning Styles have been summarized below:

Ismail (1982) examined the relationship between Achievement-Motivation and Learning Style as measured by Mehrabian and Bank's measures of achieving tendency and Kolb's Learning Style Inventory respectively. The study was conducted on Malaysian student attending University. The results disclosed that correlation's between Achievement-Motivation and each of the Learning Style subscales ranged from 35 to 44. It was concluded that motive to avoid failure was related to concrete learning.

1. The motive to avoid failure was related to concrete learning. 2) The motive to achieve success was related to abstract learning. 3) Achievement-Motivation was found to be independent of the dominant Learning Style preferences. 4) Academic major group and level of schooling were significant factors in correlating Achievement-Motivation with Learning Style and 5) Achievement-Motivation was found to be independent of the dominant Learning Styles preferences.

Verma (1996) conducted a study on the relationship of personality and Achievement-Motivation with Learning Style of postgraduate students. In this Achievement-Motivation was measured by Helmreich and Spence' Achievement-
Motivation scale and Learning Styles by Kolb’s Learning Style Inventory. The findings revealed that Achievement-Motivation was not found to be a significant factor in concrete experience, abstract conceptualization active experimentation, diverger, converger, assimilator and accommodator Learning Styles. However, reflective observation was found to be significantly influenced by Achievement-Motivation. Highly achievement motivated demonstrated more preference motivation.

Williams (2001) undertook a study to examine the relationship between Learning Styles and Achievement-Motivation. The relation of Learning Style was also explored with gender and ethnicity/race. Using the Kolb’s Learning Style Inventory and the Myers’ Achievement-Motivation scale, the investigator found that there was no significant difference, correlation or association between Learning Styles and Achievement-Motivation. A correlation between Achievement-Motivation and learning mode was acted.

2.15 Reflection on Review of Studies on Thinking Style:

Thinking Styles have been investigated in relation to personality traits (Pacini and Epstein, 1999; Zhang, 2000; Sood, 2000; Zhang and Huang, 2001; Verma et al., 2003), Stream (Monfort, 1990; Sternberg and Grigorenko, 1993; Voelz, 1994; Verma et al., 2003), Socio-economic-status (Sternberg, 1997; Cheng and Cheng, 2000; Verma, S., 2001), course type (Verma, 2001; Zhang, 2001), type of school (Sternberg, 1997), teacher education (Zhang and Such, 1997), Abilities (Zhang and Sternberg, 1998), age differences (Zhang; 1999; Judy Weng, 1999), Individual differences (Zhang, 2001) anomalous experiences (Wolfardt, 1999), Self-esteem (Zang, 2001), Intelligence (Verma, S; et al., 2003), Language proficiency (Maree and Boer, 2003), Teacher characteristics (Zhang and Sternberg, 2002), Instruction Behaviour (Cheng and Weng, 2001), Mode of Thinking Styles (Zhang, 2002) and self-rated abilities (Zhang, 2001).

Attempts have been made to study Thinking Styles in relation to gender. Some researcher (Grigorenko and Sternberg, 1997; Zhang, 1999) found no significance difference between males and females on all Thinking Styles. Some researchers reported females more tended toward executive (Verma, Saroj, 2001; Verma Amita, 2001), external (Sood, 2000), legislative (Verma, S., 2001) and analytic (Chao and Huang, 2002) styles of thinking than males.
But some other researchers found male more adopting global (Zhang and Sach, 1997; Judy Weng, 1999), local (Cheng and Cheng, 2000), legislative, executive, judicial (Judy Weng, 1999) and oligarchic (Verma, S. et al., 2003) styles of thinking than female counterparts. Some concluded that male preferred right hemispheric style (Tan William, 1981; Allot (1981)) and rational / logical Thinking Style (Gilliagan, 1982) and female preferred intuitive / feeling Thinking Style (Gilliagan, 1982).

Thinking Styles have been also investigated in relation to Academic Achievement. Some researchers found Academic Achievement was positively related to judicial (Grigorenko and Sternberg, 1997), legislative (Grigorenko and Sternberg, 1997), executive (Grigorenko and Sternberg, 1997; Judy Weng, 1999; Zhang, 2001, conservative (Zhang and Sternberg, 1998; Zhang, 2001), hierarchical, global and internal (Zhang and Sternberg, 1998) Thinking Styles and negatively related to legislative, liberal, external and local (Zhang and Sternberg, 1998) Thinking Styles. Underachievers scored higher on right style of thinking (Okabayashi and Torrance, 1984) and on global Thinking Style (Yu-Shaung Chou, 2000) than high achievers. Torrance and Fraser, 1983 found that Academic Achievement was negatively related to left hemisphere style.

2.16 Reflection on Review of Studies on Learning Style:
Review of studies indicated that Intelligence was significantly related to Learning Styles. The studies conducted by Clocklin (1995) and Thomson (2001) revealed that intelligence had positive association with converger/precision Learning Style and assimilator/analytical Learning Styles. However, Nathan (1997) found no significant impact of intelligence on Learning Styles.

Study conducted by Aggarwal (1983) revealed that high and low creative students differed significant on Learning Style. Other investigation done by Clark and Hamburg (1964) reported that creativity had positive relation with accommodation/dynamic Learning Style, whereas, Verma (1992) reported no significant relation between creativity and Learning Styles.

Studies pertaining to Academic Achievement and Learning Styles conducted by Caskey (1981). Rolle (1993) and Badgan (1999) revealed that reflection and concrete experimentation had significant relation with Academic Achievement. One study conducted by Relaford (1988) showed the positive relation of Academic Achievement with assimilator/analytical Learning Style. On the other hand, Relaford (1980) Al-Badar (1993) reported Academic Achievement to be significantly
associated with abstract and active experimentation modes of learning. Also Kirk (1986) reported that Academic Achievement had significant on dynamic/accommodators Learning Style. However, some investigators (Herrons, 1983; Bame, 1984; Moore, 1986, Taylor, 1986; Decoux, 1997, White, 1990; Mickens, 1995 and Yates, 1998) found no significant relation of Academic Achievement with Learning Styles.

Study conducted Petty (1985) pointed out that higher trait of personality there positively associated with Learning Styles. Whereas majority of studies conducted on personality and Learning Styles revealed no significant relation between the constructs (WEST, 1982; Gilchrist, 1987; Harbour, 1997 and Golden, 2001).


Studies conducted by Hinle (1986) and Dwyer (1998) revealed that students with low level of anxiety had stronger preference for reflective observation. The study conducted by Huch (1981) pointed out positive relation of satisfaction with accommodator Learning Style. One investigation done by Okanlawan (1989) revealed that learning environment was significantly related to Learning Styles. However, studies conducted by Agree (1989), Piskan (1994) and Powe (1996) reported no significant impact of learning environment on Learning Styles. The studies conducted by Gilchrist (1987), Okanlawan (1989) and Reistroffer (1997) did not find any significant relation of Career Choices with Learning Styles of the students.

Number of studies conducted on gender differences reported that males had stronger preference for independent, competitive, abstract, conceptualization, active experimentation, avoidant, Individualistic, sensing, deep processing, assimilator, applied and precision Learning Styles (Hopkins, 1982; Tuckler, 1983; Moore, 1984; Bishop, 1985; Kumari and Verma, 1986, Johnson, 1989; Miller et al. 1990, Joerger, 1992; Whiteomb, 1999; Keri 2002; Chump and Skogsberg, 2003 and Prakash, 2006). On the other hand some studies (Hopkins, 1982; Tuckler, 1983; Moore, 1984; Bishop,

A number of studies conducted on the association of age on Learning Styles, the studies conducted by Delargy (1961) and White (1999) revealed that younger males and older females showed their preferences for reflective observation mode of learning, while, study of Delagry (1961) showed preference of older male towards abstract conceptualization mode of learning. On the other hand they studies Delagy (1961) and Whiteomb (1999) reported that younger females and stronger preference for active experimentation mode of learning. However, the studies conducted by Cackey (1981), Fagerholm (1986), Kirk (1986), Keir (1987), Clere (1995). Gallagher (1998) and Gensberg (2002) demonstrated no significant impact of age on learning.

The majority of studies conducted (Miller, 1979; Caskey, 1981; Gypen, 1961; Winant, 1989; and Bank, 1991) on Learning Styles reported that engineering/architecture/technical students had the stronger preference of reflective observation, abstract conceptualize and converger and assimilator Learning Styles as compared to the students of other disciplines/streams. However, the studies conducted by Kirk (1986), Taylor (1986), Gallagher (1998) and Ifanto (2002) reported no significant relation of stream/discipline with Learning Styles.

The studies pertaining to types of institution and Learning Styles, only one study conducted by Joerger (1992) revealed that technical college students had stronger preference for diverger Learning Styles whereas community college students preferred assimilator Learning Styles. The investigations done on residence and Learning Styles, only the study of Verma (1991-92) revealed the stronger preferred of rural students towards non-individualistic Learning Style as compared to their urban counterparts. The two studies of Nah (1989) and Verma (1991-92) reported the stronger preference of urban students towards field independent and individualistic Learning Styles as compared to their rural counterparts. However, only one study
conducted by Keir (1987) reported no significant relation of residence with Learning Styles.

The studies pertaining to Scio-economic status and Learning Styles, only one study of Carskey (1981) reported significant association of high socio-economic status with abstract conceptualization and concreteness. On the other hand, study conducted by Singh (2001) revealed that students of high and low levels of socio-economic status differed on individualistic Learning Style. However, Singh (2001) in his study also reported that average socio-economic status had significant relation with non-individualistic Learning Style. The various studies conducted on culture/race/ethnicity and Learning Styles. The study of Wilson (1971) revealed the preference of Afro-American and African Tribate students towards initiative Learning Style. The field dependence Learning Styles was preferred by Mexican-American and Hispanic children as reported by the studies conducted by Remeriz and Price Williams (1974) and Nieto (1992).

Only one study-conducted by Sennaville (1982) revealed stronger preference of Mexico and US students towards cognitive Learning Style. The studies conducted by Johnson (1989) and Lal (2003) reported Black and Taiwanese students had stronger preference for assimilator Learning Style. Whereas, Johnson (1989) in his study reported that Whites were more divergers in their Learning Style. Other two studies conducted by La Pointe (1990) and Sanchex (1996) revealed the significant relation of Indian and Hispanic students with independent Learning Style. On the other hand, the study Yuen and Lee (1994) pointed out the stronger preference of Singoren students towards abstract conceptualization mode of learning. However, Number of studies conducted (Caskey, 1981; Tuckler, 1983; Kreuze and Layne, 1982; Stockes, 1989; La Pointe, 1990; Royal, 1993; Gallagher, 1998; Gadzella, 1999; Mathew, 1999; and Adams, 2000) revealed no significant relation of culture/race/ethnicity with Learning Styles.

2.17 Reflection on Review of Studies on Self-Efficacy:

Interest (Phyllis, 1985), self-regulatory strategy (Zimmerman et al., 1989; Braten, 2004), environmental factors (Anderson et al., 2004), job satisfaction (Timothy Mottet et al., 2004), Goal orientation (Braten et al., 2004), Socio-economic status (Fernandez-Ballesteros et al., 2002), cognitive processes (McCarchy et al., 1985; Pajares, 1996), task difficulty (Carol et al., 1988), stress, health and adjustment (Chemers et al., 2000).

Some researchers reported no significance difference between males and females on Self-Efficacy (Burch, 1995; Pajares, 1996; Fouad and Smith, 1996; Middleton and Midgley, 1997; Pajares, Miller and Hampton and Mason, 1998; Pajares and Valiante, 1999; Johnson, 1999; Pajares and Valiante, 1999, Pastorell et al. (2001). But some other researchers reported that males had higher Self-Efficacy than female (Matsui et al., 1988; Junge and Drentzke, 1995; Wigfield et al., 1996; Grainor and Lent, 1998; Fernandez- Ballesteros et al., 2002) On the other hand Matsui et al., (1988) also reported that females reported higher Self-Efficacy in female-dominated occupations.

However, some researchers found significance difference between males and females but did not provide the direction of the difference (Hakett, 1985; Shell, 1995; Phyllis and Philip, 1985).

Attempts have also been made to examine the Self-Efficacy in relation to Academic Achievement. Some researchers (Marsh et al., 1991; Champman and Tunner, 1995) found strong and direct effect of Academic Achievement on Self-Efficacy, while some researchers (Berman et al., 1977; Shunk, 1981, 1982; Collins, 1982; Lent et al., 1984, 1986; Multon, Brown and Lent, 1991; Pajares and Jhonson, 1996) reported positive effects of Self-Efficacy on achievement.

A number of researchers (Reliech, 1983; Pajares and Johnson, 1994; Chemer, Hu and Garcia, 2000; Pietsch, Walker and Chapman, 2002) concluded that Self-Efficacy and Academic Achievement were strongly correlated. Pajares and Kranzler, 1995 found that Self-Efficacy was the stronger predictor of Academic Achievement and Zimmerman 1992 concluded that Self-Efficacy influenced Academic Achievement directly and indirectly.

2.18 Reflection on Review of Studies on Emotional Intelligence:

Review of studies indicates that Emotional Intelligence was significantly related to different professions. The studies conducted by Finegan (1998), Bar-on
(2000) and Kabat (2003) revealed that different professions required different levels of Emotional quotient. Study conducted by Pradhan and Biswas (2005) pointed out positive relationship between Emotional Intelligence and personal effectiveness. Roopsmit reported that Emotional Intelligence increases with age. Goleman et. al. (2000, 2002) revealed that I.Q alone does not predict performance, there are also other factors called emotional Intelligence account for all round success in life. Emotional Intelligence was directly linked with prospective teachers. The studies conducted by Salovey (1997) pointed out that if prospective teachers are aware of emotional competencies only then they can deal with children effectively in the classroom. Colleln (1999) and Lisa (2006) revealed that training and constant feedback result indicated the improvement of Emotional Intelligence of Prospective Teachers.


Studies pertaining to different background factors and Emotional Intelligence, Boyatzis (1982), George (1990) and McCrae (1992) found that Emotional Intelligence affect style of leader. Craut (1995), Rosier (1996) and Mansi (2002) reported relationship between Emotional Intelligence and decision making. Thingujam and Ram (1999) reported positive correlation between anxiety and Emotional Intelligence. However, only one study conducted by Pradhan et al (2001) reported positive relationship between leadership effectiveness and Emotional Intelligence. Regina (2002) did not find any significant relationship between Emotional Intelligence and Burnont measures.

2.19 Reflection on Review of Studies on Achievement- Motivation:

Review of study indicated that Achievement Motivation was positively correlated with Scholastic achievement. Achievement Motivation has been investigated in relation to locus of control(Weiner et al. (1971), Paul(1972), Bedian and Hyder (1977), Nowicki and Schneewind (1982), Mishra (1983), Mistry (1985), Sharma (1985), Beharwal (1987), Verma and Sharma (1988), Verma, Sharma and

A number of researchers (Tripathi (1986), Kamalanabhan and Iyer 2006, Kaur 2007, Chaturvedi; 2009) concluded that Achievement Motivation was significantly correlated with academic achievement. Tella Osun (2007) found that motivation has impact in Academic Achievement of secondary school students in maths with regard to gender. However, Weisher (2002) conclude that parental involvements did not exert a great effect in Achievement Motivation of students.

Attempts have also been made to examine the Achievement Motivation in relation to emotional maturity. Choudhari and Uppal (1996) concludes that adolescents staying at homes with parents had higher level of emotional maturity as compared to orphanages. Hungal and Aminabhavi (2007) studied that children of employed mothers have significantly high emotional maturity as compared to homemakers.

The studies pertaining to socio demographic factors and Achievement Motivation (Gokulnathan; 1972, Singh; 1979, Fatmi; 1986, Balkrishanan; 1990) revealed that tribal students had significant influenced on Achievement Motivation. However, only one study conducted by Chauhan (1984) reported no significant relation between scheduled tribe and scheduled caste students to their Achievement Motivation. Anand (2006) found that students belonging to different social categories i.e. schedule caste, schedule tribe and general did not differ significantly in their Achievement Motivation. Mahavidya (2008) also found that caste rendered significant effect on Achievement Motivation.

Broussard and Garrison (2004) conclude the relationship between Achievement Motivation and academic success has been better established in adults than younger children.

Gokulnathan (1972), Aggarwal (1974) found that girls have a significantly high Achievement Motivation than boys. However, Ahluwalia (1985), Singh (1986) conclude that boys and girls do not differ significantly in relation to their Achievement Motivation. Sharma, et. al. (2006) also reported that both boys and girls have shown a significant positive relationship between Achievement Motivation and achievement in maths.
Study reported by Tiwari (2009) revealed that student of science faculty have significantly high Achievement Motivation than the students of other faculties.

**2.20 Reflection on Review of Studies on Attitude Towards Teaching:**

Review on studies indicated that both male and female student teachers had a favourable attitude towards teaching profession. The study conducted by Ganapathy (1992) revealed that student teachers had a positive self-concept.

Studies pertaining to B. Ed course and Attitude towards Teaching were conducted by George (1979), Diran (1980), Mathema and Bhagat (1998), Pugh and others (1991), Kuoontz and Franklin (1992), Piel and others (1992), Baxter G (1993), Goodwin and others (1993), Hube et al. (1993), Roy (1971), Mehrotra (1973), Naidu 1974, Dash (1985), Srivastava (1989), Gupta and Srinivasan (1990). One study conducted by Pigge, et al. (1997) showed that development of Attitude towards Teaching does not follow the same pattern for all teacher candidates. White, et al. reported that teaching techniques and teacher attitudes have no effect on maths anxiety. Study conducted by Lang (1999) pointed out that linkage between the science teacher preparation programme and pre-service teachers was found to be strong in developing positive attitude towards science teaching. Zhihuli (2004) also found that during the block experience the students become more prepared and confident to teach children and gained a more positive attitude and respect for the teaching profession. The studies conducted by Roy (1971), Mehrotra (1973) and Naidu (1974) revealed that attitude of female students was more favorable than that of male students.

Study conducted by Srivastava (1989) pointed out that most of the trainees group changed their teacher attitude positively and significantly. Gupta and Srinivasan (1990) found that the teaching as a profession enjoyed high status in the eyes of female B.Ed. trainees.

A number of studies conducted on association of personality traits and Attitude towards Teaching by Mehta (1985) revealed that a significant positive change in the attitude took place in all subgroups of teacher training. Shakuntala (1999) found that there was a significant and positive correlation between adjustment of secondary school teachers and interest and Attitude towards Teaching.
Austin (1979) found that the attitude of student teachers can be improved by a student teaching experience. Khatoon (1985) also studies that attitude towards teaching profession has nothing to do with the teachers classroom behavior. Chidolue, et. al., (1995) found significant positive relationships between teacher experience, teacher locality, student attitude and achievement. Monohan and others (1996) reported that over sixty percent of the regular education teachers prefer sending special needs students to special education classrooms.

Number of studies conducted on gender difference and attitude towards teaching (Sukhwal, 1976; Ramakrishnaah, 1980; Gupta, 1984; Rawal et. al, 1984; Pazhikuth, 1989; Anderson, et al., 1995; Balan, 1996; and Ramachandran, 1991).

Karp et. al., (1991) reported that teachers with negative attitudes employed methods that fostered dependency where as teachers with positive attitudes encourages student initiative and independence. Downing et al., (1997) found significant positive relationship between science process skills and attitude towards science. Cornelins (2000) revealed that attitude towards teaching profession is a discriminating factor of teacher competence of different groups, Pushpam (2003) reported significant positive relationship between Attitude towards Teaching and job satisfaction of women teachers. Devi (2005) studied moderate and significant correlation exists between success in teaching and attitude towards teaching profession. Suja (2007) found attitude towards teaching, interest and teaching experience have significant main effect on job commitment.

Studies reviewed on Attitude towards Teaching profession reveal that Attitude towards Teaching profession is a significant predictor of teaching efficiency. Studies prove that attitude can be improved through practical experience. It is also found that more effective and less effective teachers differ in Attitude towards Teaching. Previous exposure can increase the level of attitude. Some studies indicate that female teachers possess a high degree of attitude than male teachers. Teachers with positive attitudes encourage their students. Significant relationship of Attitude towards Teaching with variables like teaching interest, satisfaction, creativity intelligence, teaching effectiveness, commitment, achievement, technology, teaching experience are established in a majority of studies. But a few studies show no relationship with the variables viz., qualification, class room behaviour, age, sex, locale, etc. However, Attitude Towards Teaching is a significant variable related to teaching that majority of studies established its relationship.
2.21 Reflection on Review of Studies on Learning Style and Achievement–Motivation:

A few researcher conducted studies on relationship between Learning Style and Achievement-Motivation. Ismail (1982) pointed out that Achievement-Motivation found to be independent of the dominant learning style preferences. Another study conducted by Verma (1996) revealed that Achievement motivation was directly linked to reflective observation learning mode of students. On the other hand, the study conducted by Williams (2001) pointed out no significant relation of Achievement-Motivation with Learning Styles.

2.22 Conclusion:

On the basis of the above studies in India and Abroad on above variables, it can be concluded that these variables, that is, Thinking Style, Learning Style, Self-Efficacy, Emotional Intelligence, Achievement-Motivation and Attitude Towards Teaching have definite effect on the personality of the learners. Therefore, it is essential that the Prospective Teachers should be given the specific training during their stay in the institution to adopt these qualities in them. Only then they will be competent to inculcate qualities in students while teaching in the educational institution.

The above review and reflection on studies gives the clue that (a) no study till date has been conducted on Thinking Style and Learning Style of Prospective Teachers in India and Abroad. (b) The obtained results in different studies do not indicate that Self-Efficacy, Emotional Intelligence, Achievement-Motivation and Attitude Towards Teaching are important variables and have effects on Thinking Style and Learning Style of Prospective Teachers. Hence, review of studies gave the base to select the present problem as well as to formulate the hypotheses for testing.