CHAPTER - II

REVIEW OF RELATED LITERATURE

Research in any field will be fruitful only when the researcher is aware of the past studies. Research is, and should be, a continuous process in any field of study. Research in education particularly has to be developed and supported by an accumulation of previous study, so as to help the virgin field of education to be professional on the scientific lines. A review of related research is necessary for every research study. The required insight into the problem can be developed as a result of survey of previous research.

This chapter deals with the review of the related literature. It is an attempt to discover relevant material published in the area under study. This covers the empirical research studies done previously in the problem area. The studies conducted during the last few decades in the field of achievement that are more relevant and pertinent to the present investigation are discussed in this chapter.

No research activity is possible without literature search and review. In tracing roots of problems, preparing outline of the study, discussing and interpreting the results and writing the research report, review of literature is one of the most important aspects. Its benefits are manifold. No research scholar may be able to develop a conceptual framework of his study without making an extensive as well as intensive review of related literature. By reviewing literature, researcher makes an attempt to lend credibility to his earnest effort to define the research problem in the light of facts already available and demarcate the boundaries of the field of inquiry. Review of literature helps the researcher to make a smooth transition from the past to the present in terms of facts.
Researchers often conduct reviews of the literature that examine a large number of previously conducted studies and attempt to synthesize their findings. They search for consistent patterns that will lead to more powerful and reliable conclusions than would be possible from a single study.

By reviewing the literature, the researcher may be able to avoid the unproductive and useless problem areas and spot out pitfalls that might have perhaps become stumbling blocks for the previous studies. This way he will economize on his resources, time, effort and energy in a big way.

2.1 Need and importance of Review of literature

The review of related literature is an important aspect in any research. Knowledge acquired through generation is well displayed in books, which are arranged in libraries. Each new generation of human beings makes use of accumulated knowledge as a foundation for building up further knowledge. Hence, the study of literature is necessary in any field of enquiry.

Review of literature gives us the relevant material published in the problem area under study. The studies conducted during the last few decades in the field of the teacher education that are more relevant and pertain to the present investigation are discussed in this chapter.

In the field of education as in other fields, the researcher needs to acquire up-to-date information about the area of research. Availability of adequate information and possession of sufficient familiarity with it, are unavoidable to a researcher. It helps the investigator to decide whether the evidence already available solves the problem adequately without further investigation, and thus to avoid risk of duplication.
The literature provides ideas, theories, explanation etc., valuable in formulating the problems and methods of research appropriate to it. The advantage of knowledge, which has accumulated in the past, is a result of human endeavour. A careful review of the research journals, books, dissertations and other sources of information on the problems to be investigated are one of the important steps in planning of any research work. In other words, research work begins in vacuum. The related literature is worthwhile for an effective research.

In the field of education as in the other fields too, the research worker needs to acquire up to date information about what has been thought and done in the particular area from which the investigator intends to take up a problem for research. But it is found that generally the extent of important, up to date information regarding educational research and ideas possessed by educational workers is very limited.

Availability of adequate information about educational thought and research does not by itself result in possession of its knowledge by the researcher. The researcher must apply himself keenly to the task. On the other hand a research worker may be very keen to possess up to date information regarding his field and may try hard to be posted up-to-date and yet fail to get enough information due to the non-existence of sources of such information.

Besides, the research investigator is scared from the repetition and resemblances of earlier works. It also monitors him to prepare a congenial ground for his investigation. Further, it helps him to overcome the lapses and leakages found in the earlier studies. Hence, it is not only obligatory but also propagator in the pursuit of any research investigation.
Study of the related literature allows the researcher to acquaint himself with current knowledge in the field or area in which he is going to conduct research serves the following purposes –

- The study of related literature enables the researcher to define the limits of his/her field.

- The researcher can select those areas in which positive findings are very likely to result and his/her endeavours would be likely to add to the knowledge in a meaningful way.

- It gives the researcher an understanding of the research methodology, which refers to the way the study, is to be conducted.

- It locates comparative data and findings useful in the interpretation and discussion of results.

- It helps in developing expertise and general scholarship of the investigator in the area investigated.

Keeping in view these purposes the investigator makes a study of the related literature in the following pages:

Research in any field will be fruitful only one when the researcher is aware of the past studies. Research is, and should be, a continuous process in any field of study. Research in education in particular has to be developed and supported by an accumulation of previous study, so as to help the virgin field of education to be professional on the scientific lines. A review of related research is necessary for every research study. The required insight into the problem can be developed as a result of survey of previous research.
Review of the previous literature is not only simply locating, reading and evaluating reports of research as well as reports of casual observations and opinions that are related to the individual planned research report project. Obviously in order to find the level of creativity, intelligence and teaching competency of the teacher trainees the investigator should become familiar with the location and use of sources of that information.

The review of literature gives the researcher the insight he needs to covert his tentative problem to a specific and concise one. The researcher becomes alert of the possibilities that have been over looked. Best (1959) rightly pointed out that - "A familiarity with the literature in any problem area helps the student to discover what is already known, what others have attempted to find out, what methods of problems solving have been promising or disappointing and what problems remain to be solved.

The review of related literature in the present chapter includes a critical study and appraisal of the reports of different report projects planned and pursued by them were helpful the present investigator in the interpretation of his own result. This review also helped the research worker to know what has been done and what have been overlooked or left unexplored. This investigation derived its motivation and direction from the studies of the related previous literature enabling the investigator to develop the right procedure to deal with the problem in its proper prospective.

Survey of related literature provides valuable help in the development of knowledge in research work. It helps the investigator to gain insight into various aspects of the problem area in formulating the frame work for the study, developing the methodology, constructing the tool for data collection and planning the analysis of the data.
Survey of related literature besides forming one of the early chapters in research report for orienting the researchers, serves some other purposes. Good, Barr and Scates (1941) analysed these purposes as given under.

1. To show whether the available evidence material solves the problem adequately without further investigation.
2. To provide ideas, theories, explanations or hypotheses valuable in formulating the present study.
3. To suggest the research methods appropriate to the problem.
4. To locate comparative data useful in the interpretation of results.
5. To contribute to the general scholarship of the investigator.

Since the problem under the investigation is the assessment of the level of creativity among teacher trainees in relation to their teaching competency and intelligence, the investigator tried to collect studies related to creativity in general and specific to teaching profession, general teaching competency and intelligence with special reference to the teachers and the influence of creativity on their level of teaching competency and intelligence of the teachers / teacher trainees. After going through the literature, the investigator has selected only those which are relevant for the present study and has classified them into four sub-headings as follows.

i. Studies related to Creativity in general and in teachers

ii. Studies related to Teaching Competency

iii. Studies related to Intelligence in general and in teachers

iv. Studies related to the relationship among creativity, teaching competency and intelligence.
2.2 Studies related to Creativity in general and in teachers

Creativity is essentially a human phenomenon. It is a process in man which helps him to achieve dignity and meaning in life. Creativity is considered to be identical with the expansion of the universe and the main task of man on this planet has revealed itself in his creative work and in his search for a type of cosmology which defined his destiny. Whether it is consider from the view point of its effects on society, or as one of the expressions of human spirit, creativity stands out as an activity to be studied, cherished and cultivated. In one form or another, there is a world-wide trend which shows great concern about creativity. Advanced countries are definitely interested in the study and development of creativity, are the Third World Countries, whose survival depends upon the creative vision and creative striving of the teachers (Raina, 1980).

Chadha and Sen (1981) found that boys and girls differed significantly on fluency factor and a trend was noted by them of girls scoring higher than boys on different dimensions of creativity as well as on the total creativity.

Kundu (1984) studied the relationship among creativity, ego strength and extraversion. The findings of the study were: (i) introverts were more creative than extraverts, (ii) creativity was negatively and highly related with psychotism, (iii) extroverts were higher on neuroticism than introverts.

Panda (1984) conducted a study on Saoras and their socio-cultural and personality aspects. That was the first study on the psychological aspect of Saora culture which revealed that both the least acculturated and most aculturated Saoras had introspective balance in the basic structure of personality. The former had both higher creativity and higher anxiety than latter but with a low ego function. Though the low aculturated children were more dependent, they were also more interested in practical concerns than in theorizing.
Rani (1986) conducted a study on ‘intellectual and non-intellectual correlates of creative female school students’. The results showed that high and low creative subjects were significantly differentiated on scholastic achievement in humanities, literature, together with overall achievement score, intolerance of ambiguity, friendliness and curiosity. Caste, mother’s education, economic status, achievement, ego strength, dominance, decisiveness, heterosexuality, masculinity and responsibility have insignificant correlation. The relationship between creativity and emotional stability as well as curiosity was dependent upon intelligence.

Yamamoto and Chimbids (1986) also conducted a study to find out the independent and interactive effects of acculturation and sex on creativity, personality, intelligence and mental health of Saora and Oriya students. The finding of the study was that Oriya students possessed higher creativity than least acculturated and more acculturated boys and girls.

Barar (1987) investigated the development of creativity in relation to intelligence among the school children of 13 to 18 years age. This study showed that fluid intelligence developed continuously. Creativity and intelligence increased with grade level. Creativity was found to be multi-dimensional in nature. Almost in all the grades, creativity and intelligence measures emerged as distinct factors, relatively independent of each other.

Patel (1988) carried out research on the topic ‘development of brain storming technique programme and to study its effects on creativity of secondary school students’. The study revealed that the students having high I.Q. gained more by brain storming training programme. There was significant interaction between treatment and high I.Q. The main effect of I.Q. on figural creativity, on fluency and on flexibility was significant. The brain storming technique procedure proved powerful for developing verbal, figural creativity and developing fluency and flexible component of creativity.
Raj Gopalan (1988) carried out research on ‘A study of creativity of secondary school students in relation to classroom climate, achievement motivation and mental ability’. The major findings were: (i) on the whole the creativity level of students of Madurai city was low, (ii) there was a dearth of originality among students. Students studying class IX had high originality as compared to students studying class VIII, (iii) the high class-room climate was found to be effective on the creative level of students of class VIII and IX, (iv) the achievement motivation had no effect on the level of creativity for the student of both the classes. Mental ability did not have any effect on the creative level of class IX, (v) the interactive effect between class-room climate and achievement motivation was not significant for both the classes, (vi) interaction between classroom climate and achievement motivation was not significant for both the classes. Interaction between achievement motivation and mental ability was also not significant.

Aggarwal (1988) studied on types of school and corresponding factors as predictors of creativity at secondary level. It was reported that – creativity of students differs according to the type of school; very low association was found between the perceptions of teachers and the creative experts of personality; socio-economic status influenced creativity and its components to a moderate degree only.

Dagaur (1988) conducted the study on relationship between neuroticism, anxiety and creative thinking in the context of extraversion, psychotism and sex. The results of the study were: (i) the creativity scores at different levels of anxiety did not differ significantly among students, (ii) extroverts were more creative than introverts except in the case of originality, (iii) there was interaction of psychotism and extraversion with anxiety, (iv) neuroticism was a highly significant factor in predicting the creative thinking behaviour of individuals, (v) neuroticism and extroversion and neuroticism
and psychotism had negligible relationship, (vi) there was high positive relationship between anxiety and neuroticism and between psychotism and anxiety.

Gupta (1988) studied the creative development of secondary school children in relation to sex, intelligence and urban and rural background. The major findings of the study are urban boys and girls developed rapidly in creativity from the age of 11 to the age 13 and 14; but later there was a sharp decline up to the age of 15. There existed low but positive correlation between creativity and intelligence of secondary school boys and girls of rural and urban area.

Bhandarkar (1989) carried out an experimental study to find the intellectual and creative suppression / stagnation faced by meritorious students in the present curriculum and found that there was very little difference between the highest and the lowest mean of the suppression expressed by the students. The high level group showed more suppression than the low level group; school was found to be the most suppressing factor and the environment and literature were the factors causing least suppression; it was found that ‘family’ was more of a suppressing factor than a ‘friend’ factor.

Datta (1989) tried to find out the difference in scientific creativity among high school students and reported that sex difference did exist in scientific creativity. Scientific creativity depends on intelligence, academic achievement and socio-economic status. Dominant factors of scientific creativity were fluency, flexibility and originality in case of both boys and girls.
Robert (1989) conducted a research on creativity and instructional technology and concluded that the use of technologies inhibits or enhances either the inculcation of creativity. Technology, if used with skill, in an appropriate strategy, could give better learning environment and shape the interactions so that creativity results.

Jawaharlal (1990) conducted a study to find out whether the structured creative teaching programme taught in brainstorming sessions will foster creativity among primary school children and reported that children’s creativity was enhanced through brainstorming; both male and female children had similar enhancement in creative abilities.

Tripati and Sukhia (1990) aimed at developing instructional materials for promoting creativity and in finding out its effectiveness on the students’ achievement as well as their capacity for the development of creative thinking. It was accounted that, there were certain dimensions of creativity that developed through training programme; however, there was certain other dimensions like originality which failed to register any noticeable impact of the training programme.

Jampole (1990) investigated the effect of ‘guided’ imaginary on gifted students’ creative writing and vividness of imaginary. The result showed that aspects of the subjects’ creativity were enhanced. On the creative writing, the high creative and imaginary treatment subjects generally outscores other subjects in originality and story strength.

Santhana Krishnan and Ramalingam (1990) studied creativity in relation to certain demographic variables. The main objectives of the study were -(i) whether there is any sex influence on creativity, (ii) whether age any
effect on creativity, (iii) whether birth order of exerts influence on creativity.
The sample for the study consisted of XI standard boys and girls drawn from
higher secondary schools of Pondicherry Town. The results of the study were
(i) there is no sex influence on creativity, (ii) there is no male domination or
female inferiority as far as creativity concerned. (iii) creativity is equally
spread out in both boys and girls, (iv) age as a variable does affect the level of
creativity, (v) there is a birth order influence on the level of creativity.

Abra and Valentine (1991) emphasized that creative achievement
depends upon both biological and environmental factors and that inborn
talents establish a potential whose fulfilment depends on appropriate
experience. Because men and women differ in both factors, either or both
could produce an achievement difference. Moreover, change in women roles
and cross-cultural studies might show further light on gender differences, but
environmental explanators alone were premature.

Badola (1991) studied ‘locus of control, achievement motivation and
anxiety as correlates of creativity’ and reported that: (i) creativity and locus of
control were positively related with each other, (ii) there was no significant
relationship between creativity and achievement motivation in general (iii)
there was significant relationship between students’ high creativity and
anxiety.

Biswa and Biswas (1991) studied the reactions to frustrations of
creative and the non-creative school-going adolescents and found that the two
groups differed significantly only in extra-aggression and group conformity
rating. The creative group showed less extra-aggressiveness than the non-
creative group.
McCabe’s (1991) findings demonstrated that subjects who achieved in English were more likely to score high on tests of creative thinking and obtain high intelligence quotient scores. Achievement in mathematics and art were not as highly correlated with creative thinking but were related to high I.Q scores.

Gujarthi (1992) conducted a study named ‘Preparation of an integrated programme of training in scientific creativity and experimental study of its effects on students of Grade IX’ and reported that after treatment experimental group showed high significant scientific creativity than expected and the test prepared by the investigator was found reliable and valid.

Ludwig and Arnold (1992) studied about the culture and creativity and found that the association of the originally with creativity was largely a western outlook; however, there tend to be individuals in all societies who challenge the cultural norm and social tradition and who thereby shape the nature and form of art.

Shah (1992) studied on effectiveness of an educational programme on decision-making skills, creative thinking skills and intellectual skills and found that creative thinking skill development programme led to the development of fluency and originality of skills.

Mondal (1992) found that the correlation between achievement and creativity score was the highest in case of medium achiever and the lowest in case of low achievers. The results showed that high achievers were not so much creative as medium achievers.
**Arora** (1992) carried out a study on 'intersectional effect of creativity and intelligence on emotional stability, personality adjustment and academic achievement'. Results revealed that high creative, intelligence were significantly highest in emotional stability, accommodity. All the high intelligence groups performed better than low ones.

**Kaur** (1992) studied relationship among creativity, intelligence and academic achievement in different subjects of 10th grade. Results revealed that for all students intelligence was positively correlated with creativity and their academic achievement also correlated with languages, mathematics and social studies. Achievement was positively related with originality but flexibility was not with different subjects.

**Talesara** (1992) in a study on literary creativity among adolescents found that overall creativity in relation to socio-economic status was a determining factor, which influences performance in overall literacy creativity.

**Prabasini** (1993) studied that male and female high school students did not differ in creative potential, but low-state and trait male students were most creative while high-state and trait male students were least creative.

**Dixon** (1993) based his study on axiomatic construction for language creativity and self-actualization. He said, Piagetion theory views intellective development in children as the unfolding of the axioms which form the basis of symbolic logic through maturation and learning. A central postulation regarding natural languages proposed by Chomsky (1966) was the creative aspect of language. This axiomatic construction might be generalized to account for the various aspects of creativity in personality theory, forming essential mechanisms of cognition, language behaviour and self-actualization.
Ellen et al. (1994) during their study on 'academically gifted students, use of imaginary for creative writing' concluded that gifted students while receiving training generated writings that were more original with more sensory description than other groups. While other groups wrote approximately the same number of words, but the imagery group wrote more (words) original poetry during the same time period. Thus, by use of personal imagery these students were able to develop writing samples that revealed an increase in their creativity and demonstrated their independent divergent thinking.

Sananda (1994) examined components of creativity, i.e., fluency, flexibility and originality to assess whether they were correlates of intelligence. Results showed positive correlation among all variables.

Thampuratty (1994) found that the main effect of creativity on achievement in mathematics was significant. She further added that the significant difference existed in the mean scores of achievement in mathematics between the three group pairs of creativity, viz., high-average creativity groups, high-low creativity groups and average-low creativity groups.

Bewa and Parvinder (1995) found in their study that there was a significant positive correlation between all the four measures of creativity and achievement in all the school subjects except social studies. Further, they added that the prediction of academic achievement in school subjects was quite reliable if it was made on the basis of measures of creativity.

Garcia (1995) carried out research in 'the influences of oral language proficiency and acculturation on the creative thinking of second grade children'. The results indicated that there were no significant differences
between the groups based on academic oral language proficiency. No significant differences were observed between students oriented to the dominant culture and those using both cultures.

Baer (1996) in his study investigated what effect divergent thinking training focused on a single task would have on the creative performance of seventh graders on a closely related task. Students received training in poetry-relevant, divergent-thinking skills. The training was found to have a significant impact on the students' creativity in writing poetry.

Choudhary and Gohsh (1996) revealed that both verbal and non-verbal creativity had a positive relationship with the achievement in chemistry.

Sucheta (1996) in a study in development of language creativity found that grade level and intelligence had their effect on the improvement of language creativity. Intelligence also affected the improvement in academic achievement scores.

Ai-girl (1999) investigated student teachers’ perceptions of the characteristics or roles teachers use in fostering creativity of primary and secondary students and reported that student teachers value primary teachers who exhibit pedagogical skills, creative and interpersonal disposition and classroom management skills and secondary teachers who have creative dispositions and social, pedagogical and thinking skills.

Ayers et al., (1999) in a study on the significance of transpersonal experiments and cognitive abilities in creativity found that creativity did not show multiple measures of trauma and emotional conflict.
Rajasekhar Reddy, Geetanadh and Dayakar Reddy (1999) studied on the creativity of teacher trainees of DIETs with the major objectives – (i) to find out whether male teacher trainees and female teacher trainees differ in their level of creativity (ii) to know whether teacher trainees of different DIETs differ in their level of creativity, (iii) whether male and female teacher trainees differ in their creativity (verbal and non-verbal). The sample consisted of 120 male and 120 female teacher trainees from 3 districts of Andhra Pradesh (Kadapa, Kurnool and Chittoor). The findings of the study were: (i) male and female teacher trainees do not differ significantly in their level of creativity, (ii) the teacher trainees of different DIETs are significantly differ with each other on their level of creativity. (iii) the teacher trainees of Kadapa district scored higher level of creativity compared to the teacher trainees of Kurnool and Chittoor Districts.

Soh (2000) developed and validated a self-rating scale for fostering creativity behaviours with a self-describing adjectives check-list. Analysis of the responses of teachers found adequate construct and concurrent validities. Specific teachers' creativity fostering behaviours were found to correlate with sex and ethnicity.

Johns et.al., (2000) conducted research on 'divergent production in gifted adolescents' using rate of creative production as measured by fluency alone or fluency and flexibility did not appreciably when additional time was allowed.

Kasinath (2000) during his study on 'effectiveness of inquiry method of teaching science in fostering science process skills, creativity and curiosity' observed that inquiry teaching method was more effective than conventional method in fostering science process skills, creativity and curiosity.
Michael *et al.*, (2001) studied on 'tradeoffs between ideas and structure: individual versus group performance in creative problem solving'. The study revealed that having more ideas available led to better individual performance. Group performance was enhanced by training appropriate to problem content that allowed for elaboration and refinement of ideas.

Shin *et al.*, (2002) in his study compares and analyses different measures of creativity in gifted and normal students to understand the nature of creativity and proposed guidelines for measuring creativity.

Alisa *et al.*, (2002) adjudged advertising creativity using the creative product semantic scale. Results of this study established that there was no significant difference in the judgement of college students, advertising professionals and general public regarding the originality and logic of the advertisements. With regard to how well crafted or well executed the ads were, however, the judgements of advertising professionals differed from those students and the public.

James (2002) aimed his study on 'Narrative and paradigmatic thinking styles in creative writers and journalism'. The findings of this study showed that creative writers scored significantly higher than journalists on narrative thought, but an interaction occurred on paradigmatic thought. Male journalists significantly outscored male creative writers, but a non-significant trend in the opposite direction was observed for female; these results stayed significant when personality and motivation factors were controlled.

Lisa (2002) carried out research on 'structured imagination and the writing of creative stories'. This study examined the relationship between structured imagination and creativity in story writing. Results showed that subjects of group-I (meaningful, original) and group – II (non-meaningful,
non-original) wrote psychologically meaningful stories significantly more than subjects in group-III (non-meaningful, non-original) and subject in group-II wrote original stories significantly more than subject in group-III. These differences were moderately related to the qualities of meaning and originality of early ideas.

Chung et.al., (2003) conducted study on ‘teaching creative writing skills to primary school children in Hong Kong: discordance between the views and practices of language teachers’. The purpose of this study was to compare the views of Chinese language teachers in Hong Kong about creativity and the acquisition of creative writing skills by primary school children. With respect to definition of creativity, teachers identified imagination foremost, followed by inspiration and original ideas. Teacher identified developing students’ confidence and providing an open atmosphere as essential means of fostering creativity.

Sunny (2004) studied the relation between creativity and teaching efficiency among student teachers from different training colleges and the product moment correlation found out indicated that there is positive relationship between creativity and its components fluency, flexibility and originality with teaching efficiently. The comparison based on sub-samples proved that the higher the creativity the higher is the teaching efficiency and higher the teaching efficiency the higher is the creativity.

Yu Chu Yeh (2004) examined the study ‘Seventh grades academic achievement, creativity and ability to construct a cross-domain map-brain function perspective’. The findings of this study suggested that – (i) the seventh graders might lack the awareness or ability to integrate knowledge and make connections between their learning and life experience, (ii) creative thinking, academic achievement and concept mapping shared similar
capacities and (iii) cross-domain concept mapping which fosters cross-domain information integration and connections between learning and life experiences could be an efficient mental tool in understanding the students' creative thinking and academic learning.

Srivastava (2004) conducted a study entitled ‘Non-cognitive factors in academic achievement’ on 1131 students of age group 15-17 years. He concluded that the level of creativity influences academic achievement; even of socio-economic status and intelligence were held constants. He further inferred that creativity and self-motivation were powerful factors which contribute to academic achievement irrespective of their socio-economic status and intelligence.

Malick (2006) studied the academic motivation and academic achievement of Private managed and Government managed high school students at different levels of creativity and found that there was no significant difference in the academic motivation of the boys and girls of private and government managed schools at their different levels of creativity. It was further concluded that sex, school and socio-economic status had no independent contribution to the creativity differences in the school students. However, when sex and socio-economic status were combined with type of school, it had highly influenced the level of academic motivation and academic achievement of high school students.

Kumar (2006) examined the verbal and non-verbal creativity of public and non-public high school students. After doing two way analysis of variance he found that boys were more verbal creative than girls and non-public high school students had high creativity than public high school students in both the categories i.e, verbal and non-verbal.
Gottfried (2007) conducted a study on academic intrinsic motivation and creativity in young elementary school children in California. The study showed relationship between academic intrinsic motivation and creativity and academic achievement and creativity. He also found a significant relationship between academic intrinsic motivation and achievement, creativity and anxiety, and perception of academic competence and creativity.

Imtisunga (2008) studied the intelligence and creativity of high school students in comparison with scholastic marks. He found that the scores of correlation coefficient were positive in all the cases but not high and the correlation coefficient between all variables were very low and some students with high IQ’s and creativity could score high academic marks and found as over achievers.

Vasuki and Kalavathi (2008) studied scientific creativity among high school students. The major objectives of the study were: i) to find out the significance of difference, if any, in scientific creativity in terms of sex, area of residence, medium of instruction, type of school, educational status and income of the parents, (ii) to find out the relationship between scientific creativity and achievement in science among the high school students. The sample of the study consists of 200 high school students in Dindigal District of Tamilnadu. The study reveals that the scientific creativity among high school students differ significantly with respect to living place, medium of instruction, type of school, educational qualification of parents and income of the parents and there is a significant relationship between scientific creativity and achievement in science.

Dholoka (2008) found a significant difference in the level of creativity between the student-teachers who teaches science subjects and humanity subjects. The student-teachers teaching science subjects scored significantly higher level of creativity compared to the student-teachers teaching humanity subjects.
Khan Neelofar (2008) examined in a study on teacher trainees with an objective to find the influence of training on the performance and creativity of teacher trainees of distance mode. The results showed that the creative teacher trainees performed well in relation to a standard of excellence or in comparison with others who are competitors and their achievement also suggest a high level of curiosity.

Pillai (2008) in his study on the evaluation in colleges of education found that – among the different optional subjects offered in the colleges of education he B.Ed student-teachers of English scored top in their level of creativity.

Vasanthal (2009) conducted a study on the relationship between student adjustment problems and their creativity. The findings were: (i) there was a significant positive correlation between adjustment problems and creativity. Creativity influences greatly the level of adjustment problems. Higher score on the creativity was observed on the students of low level adjustment problems. (ii) the scores of the students creativity was gradually increased with their parental educational qualification and occupational levels. (iii) the different age groups differed significantly on their level of creativity. It was found that the age increased the creativity scores also increased.

Dharmaraja (2009) observed from a study on B.Ed teacher trainees on their level of creativity with some variables that: (i) the men and women B.Ed teacher trainees had significantly differed in their level of creativity. The Women trainees expressed higher creativity score than the men trainees. (ii) Educational qualification of the teacher trainees showed a significant influence on their level of creativity. The trainees with postgraduate qualification exhibited higher creativity score than the trainees with graduate
qualification. (iii) the interest in teaching would not shown any influence with their level of creativity. (iv) the attitude towards teaching had a significant influence on their level of creativity. The level of increase in the attitude towards teaching increased the level of creativity among the B.Ed teacher trainees.

Bhogovit (2009) focused on a study to identify the levels of creativity among school teachers and found that – (i) the level of creativity is differed between men and women teachers. (ii) Age and Length of service showed a significant influence on their level of creativity. (iii) the place of working and the influence of the head of institution had also shown a significant impact on their level of creativity.

2.3 Studies related to Teaching Competency

The first recorded study of teacher competence (Kratz, 1986) was one of the earliest pieces of educational research of any kind to appear, set a design precedent that was to be followed for many years. A large group of elementary school pupils were asked to try to remember the best teacher each of them had ever encountered and to write down what made that teacher different from others. These descriptions were then collected and compared and from them was derived a list of characteristics that supported distinguished effective teachers from ineffective ones. For the next half-century or so this kind of study was repeated again and again with groups choose in various ways; sometimes the task was performed by pupils currently attending schools, sometimes by persons considered to be experts, educators or teacher educators. Perhaps the most extensive and sophisticated example of this was the monumental common wealth teachers training study". 
(a) Indian Studies:

Passi and Sharma (1982) focused on a study of teaching competency of secondary school teachers. The study was conducted on a sample of 107 teachers (48 teachers of Hindi and 59 teachers of English) and 9360 students with the major variables teaching competency, demographic, presage and product variables. The major findings of the study were: (i) some of the major skills of competencies identified were: giving assignment, loud reading, asking questions, introducing a lesson, managing the classroom, using blackboard, pausing, using reinforcement, avoiding repetition, dealing with pupil’s response, audibility, shifting sensory channel etc., (ii) the male and female teachers did not differ in their teaching competency, (iii) there was a positive significant correlation between the age of the language teachers teaching at the secondary level and their teaching competency, (iv) there was negative correlation between the self-perception of the language teachers and teaching competency, (v) there was significant positive relationship between the teachers’ teaching competency, the liking of their pupils of their teaching behaviour and the academic achievement of the pupils of grade IX in Hindi.

Choudary (1985) focused on a factorial study of the teaching competencies of teaching English at the secondary school level and found that: (i) the pedagogical domains of teaching competency in English consisted of 12 competencies which were independent of one another, (ii) the competency structuring questions accounted for 32 percent variance and correlated significantly with both the product variables, (iii) all the competencies correlated positively with the product variables, (iv) the contextual variables of location of school had an effect on half the number of competencies, (v) teachers’ intelligence and attitude were found to be associated with source of the competencies.
Sathiyagirirajan (1985) focussed on competency, personality, motivation and professional perception of college teachers. He made the findings that: (i) teacher competency was related to intelligence, emotional stability, consciousness, tender mindedness, trusted nature, placid nature, self-sufficiency and related factors of Cattell's 16 PF questionnaire, (ii) it was significantly related to creativity, dynamism, organized demeanor and warmth and acceptance, self-actualization and profession perception of teachers, (iii) the more competent teachers significantly differed from the less competent teachers in all the above variables, (iv) those variables that correlated significantly with teacher competence, inter-correlated with one another significantly.

Prakasam (1986) found from a study on teacher effectiveness as a function of school organizational climate and teaching competency that – (i) the teachers working in schools situated in industrial areas were found better in teaching competency than teachers working in semi-urban areas, (ii) teachers working in schools situated in urban areas were better than the teachers of all other areas in both teaching competency as well as teacher effectiveness, (iii) a positive and significant relationship was observed in the teacher effectiveness and teaching competency in different types of organizational climates.

Subbarayan (1985) and Mahapatra (1984) found no significant influence of sex on teacher competency. Padmanabhaiah (1986) observed that the age of the teachers could significantly influence the level of the teacher competency.

Rajameenakshi (1988) focused on the factors affecting teaching competency of B.Ed. trainees and found (i) there was a negative correlation
between age and teaching competence scores, (ii) trainees with higher socio-economic status scored significantly higher in teaching competence than others, (iii) the training in the skills of demonstration and micro-teaching significantly increased teaching competence.

Bhosle (1992) evaluated the new curriculum of teacher education and concluded that majority of principals, teacher-educators, student-teachers and teachers were of the view that the new curriculum was suitable for developing teaching competence among the student-teachers.

Raju (1994) found that there was a significant relationship between teaching competency of teachers and their attitude towards teaching.

In a study Naseema and Ayishabi (1995) examined perceived teaching competence was found to be significant.

Susheela Desai and Shashikala Desh Pande (1996) made an attempt to study the interactive effect of sources of feedback and student teacher personality on student-teacher competence. The findings of their study reveal that – (i) there was no significant difference in the teaching competence of high neurotic and low neurotic students-teachers.

Pradhan, Senapathy and Sahoo (1997) found that there is no significant difference between teacher competency and teacher effectiveness of male and female secondary school teachers.

Sharma (2001) investigated from a study on the teachers and found that there is a significant difference between teacher competencies and their personality characteristics.
Shakuntala (2001) studied the adjustment of secondary school teachers in relation to their teaching competency, emotional maturity and mental health. The main objective of the study is to study the relationship between adjustment and teaching competency of secondary school teachers in relation to different psycho-sociological variables. The sample of study consisted of 1000 secondary school teachers randomly selected from 100 schools belonged to the government, private aided and private unaided managements of Bangalore Urban district. The major findings of the study were:- (i) there was a high, positive and significant correlation between teachers’ adjustment and teaching competency of secondary school teachers. (ii) there was a high, positive and significant correlation between gender, adjustment, teaching competency, emotional maturity and mental health among the school teachers. (iii) there was a significant difference in teaching competency of secondary school men and women teachers. (iv) there was a significant difference in teaching competency of teachers working in government and private secondary schools. (v) there was a significant difference between age, adjustment and teaching competency of teachers working in government and private secondary school teachers. (vi) there was a significant difference in teaching experience, adjustment and teaching competency of secondary school men and women teachers. (vi) there was a significant difference in teaching experience, adjustment and teaching competency of teachers in government and private secondary schools.

Manjula (2002) studied teacher competencies and learner’s achievement in tribal areas of Karnataka. The results of the study are: (i) a majority of the teachers do not have the knowledge competencies in EVS-I and EVS-II. (ii) no highly competent teachers were found in all four subjects. (iii) in mathematics and EVS-I, though very low competencies boarding on the average line was observed. (iv) a significant relationship was found between the teacher’s competencies and learner’s achievement in language and mathematics in government school.
Vineetha Siroji (2004) found from a study on the levels of achievement of the teachers that the attitudes and self-concept of the teachers significantly influencing factors of their level of teaching competencies.

Pushpam and Sundararajan (2004) made an attempt to study teaching competencies of science teachers at higher secondary level. The main objectives of the study were: (i) to study the level of teaching competence of science teachers at higher secondary level, (ii) to study the association of the level of teaching competency of science teachers with their subject of specialization, qualification, experience, age, income, nature of the job and sex. (iii) to compare the level of teaching competencies of science teachers with reference to the type of management of the school. (iv) to compare the level of teaching competence of science teachers with reference to their extroversion – introversion behaviour. The major findings of the study were – (i) This study reveals that community of teachers and nature of the school did not influence significantly the teaching competency of science teachers. (ii) Post-graduate teachers with B.Ed., M.Ed or M.Phil have better teaching competency than the graduate teachers with B.Ed. (iii) private, un-aided school teachers have better teaching competencies than government and corporation school science teachers. (iv) Family size, sex of the teachers and location of the school did not influence significantly the teaching competency of science teachers.

Chahar (2005) studied the teaching competencies of student teachers in relation to certain non-cognitive variables. The main objective of the study is to study the general teaching competency of the student-teachers with different socio, psychological and demographic variables. The findings revealed that – (i) there is a significant relationship between General Teaching Competency and intelligence, General Teaching Competency and Attitude.
towards teaching, and General Teaching Competency and Socio-Economic Status of the student teachers. (ii) The mean General Teaching Competency scores of female student teachers is higher than that of the male student teachers. (iii) The mean General Teaching Competency scores of female student teachers is higher than that of the male student teachers in Science group. (iv) The mean General Teaching Competency scores of female student teachers is higher than that of the male student teachers in Arts group.

**Jeba** (2005) studied the teaching competency and mental health of the student teachers in DIET. The major objectives of the study were-(i) to find out the gender and group difference in teaching competency and mental health status of student teachers in DIET. (ii) to find out relationship between teaching competency and mental health status of student teachers in DIET. The size of the sample was 300 student teachers in a DIET undergoing D.Ed course. The findings of the study were:- (i) There is no significant difference between men and women student teachers in teaching competency and certain mental health dimensions. (ii) Science and Arts group student teachers significantly differed in their level of teaching competency. (iii) Mental health of the teacher trainees showed a significant, positive correlation with their level of teaching competency.

**Viswanathappa** (2005) made an attempt to study the influence of attitude towards teaching and teaching competence of student teachers at secondary level. The objective of the study was to find out the influence of attitude towards teaching, admission made and test rank on teaching competence of student teachers at secondary level. 200 student teachers of two education colleges constitute the sample. The major findings were:- (i) Attitude of the student teachers towards teaching as a predictor variable predicts their teaching competence in lesson planning, presentation, closure of
lesson and evaluation. (ii) Admission test rank, age, father’s occupation and father’s education of student teachers as predictor variables do not predict their teaching competence in lesson planning, presentation, closure of lesson and evaluation.

Rajasekharan and Anandan (2005) studied the relationship between teaching competency and attitude towards teaching of social science among distance learners of B.Ed. The objectives of the study were - (i) to measure the relationship between teaching competency and attitude towards teaching social science among global sample and (ii) to measure the relationship among teaching competency and attitude towards teaching social science of women and men bachelor-degree holders and master-degree holders and years of experience. The results of this study reveal that – (i) the relationship is significantly positive among men teachers between teaching competency and attitude towards teachers social science. (ii) the relationship between teaching competency and attitude towards teaching social of B.Ed distance learners among women is significantly positive. (iii) the relationship between competency and attitude towards teaching social science of B.Ed distance learners with bachelor degree is significantly positive and (iv) the relationship between teaching competency and attitude towards teaching History of B.Ed distance learners with Masters degree is significantly positive.

Pani (2006) investigated from a study on the teaching skills of teachers that the teaching competencies are related to the variables viz., classroom climate, teacher attitude, interpersonal relations with colleagues and higher officials and methods of teaching/techniques.

Kumar (2008) in his study on English language Teachers’ competencies found that learning motivation is a significant influencing factor
of their level of competencies. Audio-visual aids, interest of the students, proper utilization teaching-learning material, group discussions among the students may improve their level of teaching competencies.

Murthy and Kumar (2008) in a study on the influence of organisational climate perception on teaching competencies of primary school teachers found a significant relationship between the variables under the study for the total sample as well as sub-samples. Except for the correlations obtained between subsamples based on teacher educational qualifications as PGB and TTC all other variables selected for the study have no influence on the degree of relationship between organisational climate perception and teaching competency.

Aggarwal (2009) found a statistically significant difference between the successful and unsuccessful teacher trainees in respect of their teaching competency. It is evident from the study that there is no conclusive evidence regarding the effect of gender on their level of teaching competency. The educational qualification and employment level of the parents showed a significant influence on their level of teaching competency. It is also examined that the rural and urban area teacher trainees also significantly differed in their level of teaching competency.

Mahapatra (2009) conducted a correlation study of intelligence and teaching competency of teacher trainees on a sample of 500 men and women teacher trainees. The study reports that – (i) men and women teacher trainees differed significantly in their level of teaching competency. Women teacher trainees are better in their level of teaching competency compared to their counterparts men teacher trainees. (ii) graduate and post graduate teacher trainees also differed in their level of competency. The graduate teacher trainees obtained significantly higher mean score than the post graduate teacher trainees. (iii) Intelligence of the teacher trainees had a significant
influence on the level of their teaching competency. The more the level of intelligence, the higher the level of teaching competency in the teacher trainees.

(b) Foreign Studies:

Hirst and Bailey (1983) focused on a study to identify effective classroom teaching competencies for community college faculty and found that – (i) 16 competencies were rated as ‘highly important’ including 7 related to instructor behaviour, 6 to course content and 3 to student behaviour, (ii) the top ranked competencies were communicating respect for each student, conveying interest in the subject and its importance and informing of expectations at the start of the semester.

Weber et al., (1983) found that (i) pre-service teachers viewed 16 competencies as important and in-service teachers viewed 25 as important, (ii) nearly all of the competencies were viewed as being of at least moderate importance.

Cochran and Mills (1983) focused on teacher competency as determined by student achievement and found that there was no significant correlation between the nine areas of teacher competency and high or low average student performance on standardized tests.

Frame (1990) found from a study on the effect of employment location on perceptions of teaching competencies among first year teachers that – (i) teachers were generally quite positive about their training, (ii) competence in planning were rated highest, followed by communication empathy, instrumental effectiveness and behaviour/record management, (iii) the region of employment had a statistically significant effect on perceptions of competencies in behaviour/record management and communication/empathy.
The major findings from a study on teaching competencies in pre-service teacher education, by Stolworthy (1990) were: (i) the mean values were not significantly different for the three groups of evaluators, (ii) the greatest differences were found between the evaluation derived from the student teachers and those obtained from co-operating teachers and university supervisors on maintaining a professional appearance (iii) another significant difference between the student teacher's evaluations and those of the co-operating teachers had to do with using appropriate resources for the development of lessons.

Onukaogu (1991) focused on the role of teaching competence in effective reading comprehension within the use of English programme with Nigerian university. The major findings were: (i) teaching competence was an important factor in the inculcation of communication competence and is a product of an adequate education programme, (ii) experimental group teachers were rated 84.50% while control group teachers were rated 34% on five performance categories, (iii) experimental group students scored much better on the past test than the control group students.

Huguenard and Terri Layne (1992) studied the relationship between teacher competency, certification and student achievement and found that (i) there was no significant difference between elementary and secondary certified teachers on teaching competency scores, (ii) there was no statistical significant difference between the test scores of students whose teachers possess high and low teaching competency scores, (iii) approximately half of the teachers plans for improving instruction were based on student outcomes.

Dwyer (1997) found from a study on using outcome of instruction to improve teaching competency that approximately half of the teacher's plans for improving instruction were based on students' outcome.
Pun Thongchunum (2000) focused on the relationship between teaching competency and the academic achievement of science programme students of the faculty of education, Prince of Songkla University. The major findings were: (i) there was a significant difference in the subjects' academic achievement in each area of the three-group course at the 0.05 level, (ii) there was a significant difference in each of the six specific skills in the subjects' teaching competency at 0.05 level, (iii) the relationship between the students' academic achievement in the three-group courses and six specific skills of teaching competency was not of a linear one.

Riechi (2005) in a study identified that the level of teaching competencies among secondary level teachers that the level of attitude, home and institutional climate and communication skills.

Kumber and Shirur (2007) found a positive and significant relationship between interest in teaching and teaching competencies of the elementary school teachers.

2.4 Studies related to Intelligence in general and in teachers

Mc Candles (1956) conducted a study on 4\textsuperscript{th}, 5\textsuperscript{th} and 6\textsuperscript{th} class students and found that correlation between anxiety and intelligence was negative. In sixth grade girls, the anxiety scores were found related to intelligence. The intelligence scores made a small additional contribution to the successful prediction of their teachers teaching efficiency.

Sarason (1959) found that the relationship of scores on several personality tests and subjects performance on a word association test was studied. It was found that high intelligence groups given the experimental instructions showed lower commonality scores and greater discrepancies in response between the two word association test administrations than the other subjects in the experiment.
Ruebush (1960) provided that anxiety scale and intelligence test were administrated to 280 sixth-grade boys. 48 subjects divided into 12 groups in a design were individually administrated an embedded figures task. The task items ranged from extremely easy to extremely difficult. These scores were derived from the criterion task for each subject. Three predictors were made (a) highly cautious subjects do better than low cautious subjects on the criterion task, (b) HA subjects obtain higher cautiousness scores than LA subjects, (c) the performance of HA subjects on the criterion task is superior to that of LA subjects. The first two predictions were confirmed. The third prediction was confirmed for subjects at the low and medium I.Q. levels.

Philips (1962) tested utilizing a sample of 759 adolescents classified into 8 sub samples involving two levels of anxiety and social class on both sexes. The results support two major findings of previous research i.e., female had higher intelligence scores than males and highly intelligence subjects had lower achievement and anxiety scores.

Sarason and Zimbardo (1965) states that reports of a longitudinal study of test anxiety and its effects show that generally extreme changes in anxiety status were related to reciprocal changes in intelligence and achievement test status and changes in intelligence level were also related to changes in defensiveness and the tendency to lie. The intelligence test scale for children was a reliable and valid indicator of changes in anxiety status.

Singal (1975) reported that intelligence contributes towards the adjustment of an adolescent in the home, society and emotional areas but its contribution in areas of health and school was found to be insignificant. It may also be pointed out that in all the areas of adjustment, the mean adjustment is almost the same i.e., adjustment increases with the decrease in intelligence. He also shows that with the increase in intelligence, the social adjustment also increases.
Chandra and Kundu (1981) conducted a study on first and second year home science students and concluded that anxiety had no effect on the level of intelligence.

Grewal and Kripal Kaur (1982) show that a group of students with the high level of intelligence shows good academic performance in mathematics with a group of low level of anxiety tended to achieved higher performance. On the other hand a group with the high achievement performance much better than a group with low achievement and vice-versa. It was finally concluded that subjects with higher intelligence and high motivation have better academic achievement in mathematics than any other combination of anxiety and motivation.

Sunitha Sharma (1985) showed that the high achievers of scientific stream possess a higher level of intelligence and they are significantly different from the achievers of scientific stream when their verbal intelligence was held constant.

Dwivedi (1988) conducted a study on 150 secondary school students and concluded that the high test anxiety performed better on the criterion test than the students belonging to the low test anxiety group. There exists a positive relationship between intelligence and performance on a linear programme. There is little interaction between intelligence and test anxiety in relation to performance on a linear programme.

Anita Gupta (1989) conducted a study on 150 secondary school girls and found that regardless of intelligence and stressor conditions; high and low anxiety school girls do not differ significantly in their performance. Irrespective of trait anxiety and stressed conditions, high intelligent school girls perform significantly better than their low intelligent counterparts. Under reassuring instructions, school girls perform better than those under ego-stress instructions. However, this is irrespective of their anxiety levels and stress conditions under which they learn.
Singh and Broota (1995) conducted a study on 60 students of X class of a school in North Delhi and found that the high intelligence students have better study habits which lead to their good performance in the examination. Intervention like study skill counselling reduces the test anxiety of high test anxious students and improves their academic performance as compared to control group.

Sarala Devi and Devaraj (2001) found that girls were having more intelligence levels than boys in case of class XII, M.Sc and Vocational students, where as in the case of X class girls, they were having less intelligence than boys and this might to be true for the interaction of other psychological variables in class X girls. In case of girls intelligence-anxiety relationship was more than boys.

Rajpal and Sinha (2002) conducted a study on 156 women teachers and tested the three dimensions of physical, interrelation and psychological as well as total intelligence. They found that non-working women experienced significantly higher intelligence, especially with regard to the physical dimension, relation to other worries about health. The age dependence status and marital status do not have a significant influence on the level of intelligence.

Nagaraju (2002) conducted a study on 224 X class students and reported that (i) the correlation between intelligence and achievement is positive and significant, (ii) the correlation between anxiety and intelligence is negative and significant and (iii) the correlation between achievement and intelligence is positive and significant.

Mishra (2007) surveyed the correlated academic achievement of high school students. In order to assess the academic achievement, no test was used by the investigator. The average of total marks of the annual marks of
each subject was taken to represent the academic achievement. The main findings of the study are: (i) intelligence was significantly correlated with the academic achievement for both boys and girls, (ii) the correlation between intelligence and academic achievement was higher in case of girls than those of boys, (iii) the socio-economic status was not significantly related with the academic achievement of boys and girls, (iv) the personality factors except self-sufficiency were not significantly related with the academic achievement of both boys and girls, (v) the personality factor self-sufficiency was significantly related to achievement only in the case of boys.

2.5 Studies related to the relationship among Creativity, Teaching Competency and Intelligence.

Harnek Kaile (1989) studied the relationship of intelligence, creativity and language usage with achievements in Languages at three levels of Socio-economic status. The objective of the study is - to study the relationship between the measures of intelligence, creativity and language usage on one side and the measures of achievement in first language/ second language and English on the other at high, average and low socio-economic levels. The conclusions of the study were: (i) a significant positive relationship exist between the measures of intelligence, creativity and language usage on one side and the measures of achievement in first language, second language and English on the other side at high, average and low socio-economic levels. (ii) the relationship of the measures of intelligence, creativity and language usage with achievement in second language and achievement in English does not vary significantly with variation in the socio-economic levels.

Mishra (1989) studied teachers teaching competencies and their creativity. The main objectives of the study were: (i) to study the impact of creativity on the teaching competencies of student teachers and (ii) to study the relationship between teaching competencies and creativity. The results of
the study were — existence of significant differences in mean teaching competency scores for highly creative trainees. Mean teaching competencies scores for highly creative trainees are greater than the mean scores of low creative trainees and the student teachers teaching competencies is related to their level of creativity.

Singh (1991) analysed inter-relationships among academic motivation, intelligence and creativity. It was found that academic motivation showed a higher positive relationship with creativity than with anxiety. The relationship between intelligence and creativity was found to be a significant one when the effect of school attendance was partialled out. School attendance was not influenced by creativity among the school children.

Jariwal (1991) conducted a study on creativity, intelligence and scholastic achievement; their relationship and differences with reference to sex and academic subjects and found that : (i) Non-verbal creativity and academic achievement of 9th class female students were positively and significantly related, (ii) Verbal creativity and scholastic achievement were positively and significantly correlated in the case of male and female science students, (iii) The level of intelligence is also significant and positive correlation with the level of creativity in both the male and female students.

Kakkar (1992) found that in case of boys intelligence and attitude towards education were found to have significant positive correlation with the scientific creativity, where as in case girls, attitude towards education had insignificant correlation with scientific creativity.

Mishra (1993) studied the association of locus of control, creativity and educational achievement of urban, rural and tribal children and found that : (i) creativity was higher for the advantaged compared to those of disadvantaged children both in urban and rural set up, (ii) the advantaged children secured higher educational achievement than the disadvantaged
children both in urban and rural cultures. It was also concluded that educational achievement was significantly related to creative thinking.

Kumari (1995) compared intelligence and academic achievement of adolescent boys and girls studying in class 9th and 11th. The sample of study consisted of 800 students, half of them are boys and half of them were girls. Jalota’s Group General Mental Ability Test was administered to the subjects to get an idea about their mental ability and marks obtained by them in the annual examinations were taken as the criterion of academic achievement. The findings of the study were: (i) among 9th class students there was no difference in the academic achievement of intellectually superior and intellectually very superior boys and girls, (ii) at all other intellectual levels academic achievement of the girls was superior to that of girls, (iii) among 9th class students there was no difference in the academic achievement of intellectually very superior and intellectually superior boys and girls, (iv) at all the intellectual levels the academic achievement of girls was superior to that of boys, (v) in general the intelligence test scores of the boys were higher than those for the girls, (vi) in case of the boys, there was very high correlation between intelligence test scores and academic achievement scores, (vii) in case of girls, there was an average correlation between intelligence test score and academic achievement.

Jagannadhan (1995) performed a study on ‘The effects of certain Socio-Psychological Factors on the Academic Achievement of children studying in classes V and VII’. The study concluded that school environment and intelligence were not found to have a significant relationship and their inter-correlations among the independent socio-psychological factors. He further revealed that the home environment and parental education and occupation levels had a positive and significant correlation with their level of intelligence.
Sinha and Sharma (1995) assessed the relationship of self-concept, academic motivation and creativity to scholastic achievement. They found that the mean self-concept score of the high achievers to be higher than that of the low achievers. Likewise the mean creativity score of the high achievers was higher than that of the lower achievers. It was also concluded that self-concept and creativity play an important role in scholastic achievement.

Raja Mohan (1998) examined the relationship between academic motivation, locus of control and creativity, and found that subjects belonging to the high internal locus of control group were significantly higher in academic motivation scores. A positive and high significant relationship was also found between academic motivation and creativity.

Rajput (1999) studied 'Educational Aspiration and Intelligence influences on the Academic Achievement of Secondary School Students'. The sample of study consisted of students of classes 10th and 12th of higher secondary schools of Garhwal region, covering male as well as female students belonging to both rural and urban areas. Out of 20 selected schools of the five districts of the Garhwal region, 50 students were selected from each school for the study by applying the stratified random sampling technique. The major findings of the study were: (i) the educational aspiration of the students in general was influence positively by their level of intelligence and parental encouragement, (ii) the academic achievement of the students was influenced by the level of their intelligence, (iii) the total students were influenced in their academic achievement by their family environment proportionately, (iv) there was no effect of socio-economic status on the intelligence of the total students in all the three groups.
Fry and Koe (2000) explored the relationship among multi-dimensional characteristics of pupils' academic motivation and classroom climate with the creativity and intelligence. They found classroom climate perceived to high in teacher support and involvement were associated with student creativity and intelligence and enjoyment of learning.

Singh (2001) conducted a study on achievement of tribal students in relation to their intelligence, personality and creativity. He took a sample of 900 tribal boys and examined that the achievement of the tribal students of class IX and class X were positively related with their creativity and intelligence.

Patel (2002) investigated the relationship between intelligence and some other selected personality variables of tribal adolescents. The study revealed that there was a significant relationship between students' intelligence and some personality variables, viz., self-concept, locus of control and level of aspiration. The male and female tribal students did not differ significant on their level of intelligence.

Riaz (2003) studied on creativity, intelligence and psychological differentiation in high and low achieving science students, and found that the correlation between scores on creativity and intelligence and science achievement were significant for the academically superior group, but not for the below average group.

Lekhi and Kaur (2005) conducted a study on 'Intelligence, Achievement Motivation and Study habits as correlates of Academic Achievement'. The sample of the study consisted of 100 students selected randomly from four English medium school of Abohar and Malout (Punjab). The students of class X were taken for the purpose of the study. Findings of
the study were: (i) intelligence, achievement motivation and study habits correlated positively with the academic achievement of the students, (ii) Academic Achievement of high intelligence students was significantly better than low intelligence group students, (iii) both the students of Abohar and Malout did not differ significantly in their level of intelligence.

Mishra (2007) surveyed the correlated intelligence of high school students in relation to certain psycho-sociological variables. The main findings of the study were: (i) intelligence was significantly correlated with the academic achievement for both the boys and girls, (ii) the correlation between intelligence and study habits was higher in case of girls than those of boys, (iii) the socio-economic status was not significantly related with the intelligence and self-motivation of boys and girls, (iv) the personality factors except self-sufficiency were not significantly related to intelligence of the boys and girls, (v) the personality factor, self-sufficiency was significantly related to intelligence only in case of boys.

Suneetha and Mayuri (2008) conducted a study on age and gender difference on factors affecting high academic achievement. The major findings were – (i) all the three dimensions of IQ (verbal, performance and total) were not found different among the boys and girls, (ii) more girls were found among the top ranking students, (iii) girls were found more intelligence and better interaction and concentration while boys were found better than girls only in language and drilling dimensions, (iv) intelligence was increased, tension decreased with the increase of age.

2.6 Appraisal

The foregoing brief review of available literature shows evidence of several studies made to identify the areas of creativity, teaching competencies
and intelligence among different sectors of teachers / teacher trainees. Especially in educational context several personal and organizational sources were identified. Among personal factors, age, gender, job satisfaction, job involvement, motivational level, anxiety and other personality factors and among organizational sources were role over-load or under-load, role ambiguity, role conflict, strenuous working conditions, poor peer relations etc. despite the cultural lag between the developed western countries and the developing Indian setting more or less similar sources of uplifting the teaching competencies were identified.

Most of the Indian studies were showing creativity is one of the most significant factor in the present world. The level of Creativity is positive and improper teaching competencies and relatively poor performance among the government sector teachers compared to their counterparts in private sector.

Differences in age, gender, level of experience, locality etc., were also included in some of the studies, where most of them showing positive relationship. However, their results could not be taken as conclusive in view of the contradictions to the above, which perhaps might be result of differences in samples, selected and instruments used to assess the certain variables.

Review of literature shows a large number of studies made in the last decade emphasizing the importance of job satisfaction and job involvement in the teaching profession. Therefore, differences in job satisfaction and job involvement may be expected among the individuals in different areas of competencies. However, there is a dearth cross-cultured studied made in this regard.
Examination of Indian studies showed teaching competencies similar to that reported in Western studies, perhaps owing to the similarities in the samples in certain characteristics like age, education level, job experience etc. Not many studies in the literature attempted to study the impact of job satisfaction and job involvement of the teachers of different sectors and age groups on their teaching competencies. Thus a need had been identified to make a study in these lines.
CHAPTER - III
THE PRESENT STUDY