REVIEW OF RELATED LITERATURE

The review of the related literature is an important part of the scientific approach and is carried out in all areas of scientific research, whether in the physical, natural or social sciences. Such reviews are also the basis of most research in the field of Education.

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

The related literature forms the foundation upon which all future work will be built. It enables the investigator to know the means of getting to the frontier in the field of his research. It also provides ideas, theories, explanations, hypothesis and method of research valuable in formulating and studying the problems. It furnishes the researcher with indispensable suggestions about comparative data, good procedure, likely methods and tried techniques. The information about the activities of previous investigations stimulate the researcher to use each bit of knowledge as a starting point for new and further progress.
Although the general purpose of the review is to help the researcher develop a thorough understanding and insight into previous work and the trends that have emerged, the review can also help in reaching a number of important specific goals. It enables the researcher to define the limits of his field. It helps the researcher to delimit and define the problem. The knowledge of the related literature brings the researcher up-to-date on the work which others have done and thus to state the objectives clearly and concisely. By reviewing the related literature, the researcher can avoid unfruitful and useless problem areas and his endeavours would be likely to add to the knowledge in a meaningful way. Through the review of related literature, the researcher can avoid unintentional duplication of well established findings. It gives the researcher an understanding of the research methodology which refers to the way the study is to be conducted. It helps the researcher to know about the tools and instruments which proved to be useful and promising in the previous studies. It also provides insight into the statistical methods through which the validity of results is to be established. Another important reason for reviewing the related literature is to know about the recommendations of previous researchers listed in their studies for further research.

In the review of related literature, the findings of the research studies are quoted as under:

1. Research Studies on Teaching Effectiveness.
2. Research Studies on Teaching Aptitude.

**TEACHING EFFECTIVENESS**

**Teaching Effectiveness and Teachers**

Anderson and Hunka (1963) concluded that the attempts to build a theory of teaching from a statistical description of what was happening failed to prescribe what should be happening. Even examples of the best of teaching might not provide the theoretical basis for the most effective teaching.

Crawford and Bradshaw (1968) found that the knowledge of subject matter, planned and organised lectures, interest in teaching and willingness to help students were the most frequently mentioned attributes of effective teachers.

Gadzella (1968) revealed that the knowledge of subject matter, flexibility, interest in the subject and preparation were the most important characteristics of an ‘ideal professor’.

Gangappa (1969) found two factors, viz. external and internal, that makes teachers mutually ill and maladjusted and thereby, had a negative effect on their teaching efficiency. The external factors include poor salary, heavy work load and lack of professional freedom. The internal factors include inferiority complex, self-centredness and over-ambitiousness.

Debnath (1971) reported that age, teaching experience and academic achievement and professional training were significant determinants of teaching effectiveness.
Maragatham and Sundararaja Rao (1971) observed that knowledge, teaching ability, professional interest, class administration and pupil’s attainment were the most important factors in determining teaching efficiency.

Samantaroy (1971) reported that superior teaching efficiency went with a favourable attitude and good adjustment of teachers.

Beet (1973) found that the usage of practical projects and teaching aids usable which depend on the teacher’s interest is the decisive factor influencing the effective teaching.

Gurbaksh (1974) found that high vocational anxiety was inversely related to teaching success, but high general anxiety was not associated with teaching success.

Thakur (1976) identified the outstanding positive traits of the teacher as viewed by the pupils like good teaching, kind and pleasing manners, good advice and guidance to pupils, regular and punctual attendance and equal treatment to all and the negative traits of the teacher were partiality, favouritism, wasting time, unmindful of duty, rudeness, lack of affection, ridiculing students, bad teaching, excessive talk unrelated to subject matter and conceit. The significant educational implication is that having known the qualities of a good teacher, it would be helpful to the authority concerned to recruit good teachers and also improve the effectiveness of the in-service teachers.

Singh (1976) reported that most prominent needs of superior teachers were nurturance, achievement, counteraction and aggression.
Further, superior teachers were less entangled in family problems or were able to solve them quickly and used more literary language.

Jain (1977) found that intelligence promoted proficiency in teaching and it tended to demote proficiency in teaching only when it was low. Creativity components were positively effective correlates of proficiency in teaching. Potential teachers must possess a high level of creativity related to creative production, originality, flexibility and ingenious solution to problems and intelligence, creativity and interest were characteristically interrelated in the promotion of proficiency in teaching.

Sofat, S.L. (1977) was constructed a self evaluation scale for teaching effectiveness of teachers. The scale had 43 items on a five-point scale having weightage of 4 to zero. The items were concerned with teacher’s organisation and personality and the relationship established with the class.

Chandrasekhar Reddy (1980) found that there was no significant difference in the teaching effectiveness of teachers of different ages.

Mann (1980) found that the successful teachers were significantly more expressive, ready to cooperate, attentive to people, generous in personal relations, bright and alert, fast in learning, efficient in abstract thinking, emotionally mature, realistic about life, effective in adjustment, dependable conscientious, persevering, responsible and dominated by sense of duty, socially aware, spontaneous and abundant in emotional response, practically independent, polished, experienced and analytical and less tense than unsuccessful teachers.
Mathew (1980) conducted a study on ‘factorial structure of teaching competencies among secondary school teachers.’ The factors identified were interpreted as general teaching competency, competency of the teacher’s concern for students, competency of using audio-visual aids, competency of professional perception, competency of giving assignment, competency of illustrating with examples, competency of pacing while introducing logical exposition, class room management, use of questions, initiating pupil participation, use of black board, recognising attending behaviour and competency of achieving closure.

Mishra (1980) found that the most important factors according to the student’s conception of teaching effectiveness were: motivating students for maximum learning, interesting way of presentation of the course content, explaining clearly and achieving the course objectives.

Mutha (1980) found that effective teachers had significantly higher teaching aptitude scores than ineffective teachers, confirming aptitude as a significant predictor of effective teaching.

Balachandran (1981) found that factors like subject mastery and intellectual kindling, responsiveness, integrity and communicating ability have an impact on teaching effectiveness.

Bhagoliwal (1982) found that more effective teachers were characterised by a fairly higher level of differentiation and integration in their cognitive and perceptual functioning. They had a superior capacity for imaginative and original thinking.

Vyas (1982) found that aptitude and achievement are the predictors of teaching effectiveness.
Pachauri (1983) found that the teachers possessing high anxiety were more proficient in teaching. He also revealed that reserved, relaxed, adjusted and controlled teachers were more proficient in teaching than those who were outgoing and tense.

Ken and kleine (1984) found that teaching efficiency is related to the achievement variables.

Singh, Prabhakar (1985) found that teaching behaviour of secondary school teachers consisted of eight skills, viz. skill of questioning, skill of explanation, skill of black board writing, skill of reinforcement, skill of introducing a lesson, skill of summarising the lesson, skill of using teaching aids, and skill of illustrating with examples.

Padmanabhaiah, S. (1986) found that region, designation, age, experience and size of the family of teachers influence the level of teaching effectiveness.

Rao (1987) found that there was no concurrence in interactive patterns observed with the teachers. Some of the teachers were moderately interactive, whereas a few were not at all interactive. Teacher-initiated interactive patterns were often observed with all the effective science teachers. Explaining skills like providing information and clarification were seen consistently in all effective teachers without any particular sequence or pattern. The coordination between verbal and nonverbal skills was not prominent, although using the black board, gestures, movement, focusing, silence and nonverbal cues were observed with all skills.
Yoshoda (1990) found that there was no significant difference between different age groups of teachers with regard to their teaching effectiveness.

Jayalatha (1991) found that there was a relationship between teacher’s perception of effective classroom teaching and their self concept which was negative.

Gorrell (1991) found that the teacher’s dedication and an orientation not to give up on students was the predictive of success.

Kukreti (1992) found that successful teachers scored significantly higher scores on intelligence as compared to their unsuccessful counterparts.

Murugaiah (1995) found that the level of teaching effectiveness among the science teachers working in secondary schools was more than the average.

Darling-Hammond and Ball (1998) found that the teachers who had spent more time in studying and teaching were more effective in developing higher order thinking skills in students.

Mohan (1998) found that the three important factors like behavioural dimension, attitudinal dimension and entry level competence of teacher were the factors of teaching effectiveness.

Marsh (2000) found that there was agreement between teachers self concept and students evaluation of teaching effectiveness.

Thompson (2004) found that effectiveness of mathematics teaching is focused on teacher’s knowledge of mathematics.
Swarz (2005) found that mathematics instructional strategies as well as past experiences with mathematics and their perception of teaching effectiveness were associated with mathematics teacher efficiency.

Wali (2005) found that the levels of teaching effectiveness measure the school effectiveness.

Ding (2006) found that there could be direct causality among teacher preparation, teacher quality and student achievement.

Gates (2006) found that the belief about mathematics and its learning and teaching was not the only teacher’s belief that needs to be considered when we were looking for influences on the effectiveness of teaching.

Wang (2007) found how to improve teacher effectiveness virtually and how to increase the transmission of effective teaching.

Sarah Babu (2010) concluded that the teaching effectiveness of school teachers was influenced by gender, but not by the medium of instruction.

Teaching Effectiveness and Prospective Teachers

Dosajh (1956) reported that imagination and maturity were indicative of success in the teaching of a teacher trainee.

Deva (1966) reported that personality was the most important and intelligence the least important in predicting success in student teaching.

Haslett (1976) found that a student teacher rapport was characterised by the qualities of trustworthiness, fairness, cooperativeness and openness which accounted for 54 percent of the variance explained by three factors.
Mani and Gonsolves (1977) found that the student teachers with better self-concept scored more in practice teaching than the student teachers with poor self concept.

Deo (1980) found that personality and adjustment of a student teacher correlates with teaching effectiveness.

George and Anand (1980) found that micro teaching proved effective in improving the teaching effectiveness of student teachers.

Mutha (1980) found that professional training, nature of schooling and income level was significantly associated with the teaching effectiveness.

Srivastava (1980) found that the frustration of the prospective teachers affect the teaching effectiveness.

Balachandran (1981) identified the factors of teaching effectiveness of student teachers as: subject mastery, intellectual kindling, responsiveness, integrity, communicating ability, commitment to teaching, impartiality, motivating ability, concern for the student’s progress and informal academic help.

Al-Babtain (1982) found that there is no significant relationship between the student teacher interaction and teaching effectiveness.

Mahapatra (1987) found that intelligence was the most influential predictor of teaching success of student teachers.

Singh (1987) found a positive and significant correlation between the prospective teachers teaching effectiveness with self concept and personal values.
Hill (1988) found that caring and understanding relationship, positive interaction, ability to break things down, flexibility and willingness to try new things are the student teachers perceptions of effective teaching.

Donga (1989) found that attitude towards children; general ability and professional knowledge are predictors of the student teachers effective teaching.

Sinha and Saroj Bala (1990) found that the students taught through instructional objectives perform better as compared to the students taught through the traditional method.

Rajameenakshi (1998) found that the training in the skill of demonstration and microteaching significantly increased the teaching competence.

Cornelius (2000) found the factors like intelligence, attitude towards teaching and academic achievement of the teacher trainees are effective discriminating factors of different groups of subjects.

Yeung and Watkins (2000) viewed teaching effectiveness in terms of the dimensions of concern for instructional participation and learning needs of pupils, communication and relationship with the pupil’s academic knowledge and teaching skills, lesson participation, management of lesson preparation, management of class discipline, teaching success commitment and sense of self confidence.

Vibha Laxmi and Chandel (2008) found that student teachers had moderate level of teaching effectiveness.
Teaching Effectiveness and Gender

Herda (1935) found no significant difference between men and women teachers in their teaching effectiveness.

Ryans (1951) noticed no significant sex differences in teaching efficiency.

Anderson (1954) reported no significant difference in the teaching effectiveness of male and female teachers.

Johnson (1955) found that there was no significant difference between the teaching effectiveness of men and women teachers.

Jayamma (1962) found no significant difference in the teaching efficiency of men and women teachers.

Roy (1965) found no significant influence of gender on teaching efficiency.

Nair (1974) revealed that sex was found to be not affecting the teaching ability of teachers.

Chandrasekhar Reddy (1980) observed that male teachers were more effective in teaching than their women counterparts.

Srivastava (1980) found no significant influence of gender on effective teaching.

Mutha (1980) found that sex was significantly associated with the teaching effectiveness.

Passi and Sharma (1982) found that male and female language teachers did not differ in their teaching competence.
Pachauri (1983) found that female teachers were more proficient in teaching than male teachers and male teachers demanded greater need of change in imparting education in comparison with female teachers.

Patel and Das (1984) observed that male teachers were more effective in teaching than their female counterparts.

Gupta (1985) observed that in the case of effective teachers, women showed better teaching efficiency than men. But in the case of ineffective teachers, men showed better teaching efficiency than the women.

Subbarayan (1985) observed no significant difference in male and female teachers with regard to their teaching efficiency.

Padmanabhaiah (1986) found that there was no significant difference between men and women teachers in their teaching effectiveness.

Prakasham (1986) found no significant difference between male and female teachers in their teaching effectiveness.

Mahapatra (1987) found that gender had a significant effect on the teaching effectiveness of student teachers.

Bhasin (1988) found no significant difference between male and female teachers with regard to their teaching effectiveness.

Singh (1988) found that male and female student teachers differ significantly in their teaching efficiency.

Rajameenakshi (1988) found that the female teacher trainees who got first class in degree examination scored significantly higher in teaching competency.
Virgil (1989) noticed that the primary teachers and women were more efficacious, both personally and professionally than the intermediate grade teachers and men.

Yosoda (1990) found no significant sex differences in the teaching efficiency of teachers.

Singh (1991) found that in the case of both male and female teachers, teaching effectiveness was positively related to fluency, flexibility, originality, composite creativity and intelligence.

Ram Mohan Babu (1992) reported that male and female teachers do not differ significantly in their teacher efficiency.

Kurian (1994) found that male and female teachers differ significantly in their perception of effective classroom instruction.

Johnson (1995) found that there was no significant difference between the effectiveness of men and women teachers.

Murugaiah (1995) found that male and female teachers were not significantly different in the level of their teaching effectiveness.

Tower and Davis (2002) found that females did better than males in achieving pedagogical content knowledge scores in their teaching practice.

Augustine (2010) found no significant difference between men and women student teachers in teaching competency.

Sarah Babu (2010) found that male and female secondary school teachers differ significantly in their teacher effectiveness.
Teaching Effectiveness and Locality

Jayamma (1962) found that the teachers’ teaching success at primary level was in no way influenced by their locality.

Fassum (1974) found that there was no significant difference between the urban and the rural groups of teachers in their teaching performance.

Rajagopalan (1976) found no significant differences between rural and urban groups of English medium teachers in their teaching performance.

Patel and Dass (1984) found that the teachers from urban and rural areas are more or less equal with respect to teaching effectiveness.

Padmanabhaiah (1986) found that there was no significant difference between rural and urban teachers in their teaching effectiveness.

Prakasham (1986) found that the teachers working in urban areas were better than the teachers of all other areas in teaching effectiveness.

Bhasin (1988) found no significant difference between rural and urban teachers with regard to teaching effectiveness.

Prakasham (1988) found that the teachers of urban schools significantly excelled over the teachers employed either in semi-urban and rural schools or schools located in industrial areas regarding both teaching competency and teacher effectiveness.

Singh (1988) found that there was no significant difference in the teaching efficiency of rural and urban prospective teachers.
Krishnan and Raja Singh (1994) noticed that the teacher’s locality does not have any individual impact on teaching effectiveness.

Murugaiah (1995) found that the place of work (either rural or urban) could not influence the level of teaching effectiveness of teachers.

Paul Kumarvel (2003) found that the rural teachers were more effective in teaching than the urban teachers.

**Teaching Effectiveness and Academic Qualification**

Jurgensen (1947) found that the job performance was affected more by extent of education than by most other variables.

Gupta (1958) reported that efficiency in teaching increased with greater academic qualifications and training among the secondary school teachers.

Fattu (1962) found that the professional knowledge has proceeded to more successful predictor, particularly of teaching performance.

Berry (1962) and Collins (1964) found that the qualified teachers were more effective than the unqualified teachers.

Jayamma (1962) reported that training did not influence professional success of teachers at primary school level, though ‘qualifications’ could add to professional success.

Hall (1964) found that the fully certified teachers were more effective when pupil achievement scores were used as effectiveness criterion.

Hawkins and Stoops (1966) reported that training did not influence the success of teachers in teaching.
Debnath (1971) found that professional training was significantly related to teacher effectiveness.

Bandari and Mehta (1974) obtained a significant relationship between educational qualifications and performance of instructors.

Potter (1978) found that there was no significant effect of professional training on teaching effectiveness of instructors working in junior colleges.

Mann (1980) found that professional training had a positive relationship with teaching success.

Wali (1985) found the academic background of teachers had influence on teaching effectiveness.

Padmanabhaiah (1986) reported that there was no significant difference between suitably qualified and over qualified teachers with regard to their teaching effectiveness.

Rao, et al. (1990) found that the post-graduate teachers were outstanding in most of the aspects of teaching effectiveness over the graduate teachers.

Ram Mohan Babu (1992) reported that there was a significant difference between the teaching effectiveness of graduate and post graduate teachers.

Askewtal (1997) found that the teachers with lower mathematical qualifications were more effective than the student teachers with higher levels of mathematical training.

Kagalatha (2002) found that higher qualifications affect teachers to teach effectively.
Teaching Effectiveness and Community

Murugaiah (1995) found that the community of the teachers is not associated with their teaching effectiveness.

Teaching Effectiveness and Academic Achievement

Debnath (1971) reported academic achievement as the significant determinant of teaching effectiveness.

Kleine (1984) found that achievement variables had the positive impact on teaching effectiveness.

Vyas (1987) found that there was a positive relationship between academic achievement and teaching success.

Cornelius (2000) found factors like academic achievement of teacher trainees are effective discriminating factors of different groups of subjects.

Teaching Effectiveness and Age

Debnath (1971) found that age was significantly related to teaching efficiency.

Oden Weller (1936), Chaya (1974), Nair (1974), Mangione and Quinn (1975) and Padmanabhaiah (1986) also obtained the similar results that age was significantly related to teaching efficiency.

Richard and Dewhirst (1979) found that there was no significant relationship between age and performance among scientists and engineers.

Chandrasekhar Reddy (1980) found no significant difference in the teaching effectiveness of teachers of different ages.
Rajameenakshi (1988) revealed that there was a negative correlation between age and teaching competence.

Yoshoda (1990) also found that there was no significant difference among different age groups of teachers with regard to their effectiveness.

**Teaching Effectiveness and Experience**

Jhonson (1955) reported that there was a significant negative relationship between length of experience and teaching effectiveness.

Jayamma (1962) reported that experience could be added to teacher’s professional success at primary level.

Debnath (1971) found that experience was related to teaching effectiveness. Similar findings were given by Potter (1978), Chandrasekhar Reddy (1980), Padmanabhaiah (1984), Frederick Wing-Kai (1988), and Rao, et al. (1990).

Fiedler and Gillo (1974) found that there was no significant relationship between experience and performance in teaching.

**Teaching Effectiveness and Marital Status**

Waits (1932) observed that there was no significant difference between married and unmarried teachers with regard to their teaching effectiveness.

Pater (1934) found that the married teachers were slightly more effective in their teaching than the single teachers.

Padmanabhaiah (1986) reported that the marital status of teachers has no bearing on their teaching effectiveness.
TEACHING APTITUDE

Human efficiency is not as easily defined as that of a machine and it is not as easily measured. One of the important factors which influences human working efficiency is aptitude for task involved. Generally different persons in the society possess different types of aptitudes, for example, some possess markedly mechanical aptitude, some musical, some clerical and some artistic and some aptitude for teaching or some other professions. When we say a person possesses an aptitude for teaching, it is assumed that he has a good proportion of traits required to become successful in teaching.

The findings of the previous research on teaching aptitude in relation to selected variables are presented here.

Teaching Aptitude and Teachers

Bhoom Reddy (1991) found that the experienced teachers exhibited a significant superior performance in teaching aptitude test and the teacher awardees exhibited significant superior performance in teaching aptitude test.

Mallikarjuna Reddy (2010) found that the secondary school science teachers have very high teaching aptitude.

Satyanarayana (2012) found that the secondary school teachers had very high teaching aptitude.

Teaching Aptitude and Prospective Teachers

Adval (1952) in a study found that the female teacher trainees have greater aptitude in teaching than the male teacher trainees.
Srivastava (1966) found that more than one fourth of the student teachers of the sample was below the average in their teaching aptitude.

Sharma (1971) found that teaching aptitude was a sound predictor of teaching effectiveness.

Vashishta (1973) found that academic grades, teaching aptitude and attitude towards teaching to be the best predictors of teaching effectiveness.

Mutha (1980) found that effective teachers have significantly higher scores on teaching aptitude than ineffective teachers, confirming aptitude as a significant predictor of effective teaching.

Vyas (1982) studied the relationship of select factors of teaching aptitude with teaching success of prospective teachers.

Sharma, R.C. (1984) found that about 75% of student teachers were below average in aptitude.

Kukreti (1990) found a positive relationship between aptitude and success in teaching.

Meera and Jayalakshmi (1990) found that teaching aptitude and teacher behaviour were related. Aptitude for teaching was important criterion that determines the teacher’s class room behaviour, teaching aptitude significantly influence the amount of teacher talk and mental ability was an important component of teaching aptitude.

Beena (1995) found that teaching aptitude was a significant predictor of teaching effectiveness.
Ranganathan (2008) found that there was a significant positive relationship between high self-esteem and teaching aptitude of D.Ed students.

Divyanshi Chung (2012) found average teaching aptitude among the prospective teachers.

**Teaching Aptitude and Gender**

Adval (1952) found that female teacher trainees have greater aptitude in teaching than male teacher trainees.

Upadhyaya (1976) found that gender was not related to aptitude for teaching.

Thakkur (1977) found that female teachers have greater aptitude in teaching than male teachers.

Sharma (1984) revealed that an insignificant difference was found in teaching aptitude ability in sex-wise comparison.

Bhasin, Chanchal (1988) found no significant difference between male and female teachers with regard to their teaching aptitude.

Bhoom Reddy (1991) found that the female respondents performed relatively better in the teaching aptitude test.

Sajan (1999) found that there exists a significant difference in teaching aptitude between the male and female student teachers.

Reddy (2001) found that both men and women prospective mathematics teachers possessed high teaching aptitude without having any significant difference in their teaching aptitude.
Arun and Geeta (2006) found that the prospective teachers of both groups (male & female) have high aptitude for teaching than the other three aptitudes; guidance, management and research. Male prospective teachers were better in guidance and management aptitude while female prospective teachers have high aptitude for teaching and research.

Ranganathan (2008) found no significant difference between males and females with regard to the level of teaching aptitude.

Augustine (2010) found no significant difference between men and women student teachers in their teaching aptitude.

Kuraishy and Ahmad (2010) found a significant difference between male and female prospective teachers on the measure of total teaching aptitude. Male prospective teachers were found to be better than their female counterparts in respect to total teaching aptitude.

Mallikarjuna Reddy (2010) found that both men and women secondary school science teachers possessed very high teaching aptitude. He also found that there was a significant difference in their teaching aptitude. Men teachers had a higher teaching aptitude than women teachers.

Prem Sunder (2010) found that there was a significant difference between the teaching aptitude of men and women prospective teachers.

Usha (2010) revealed that there was a significant difference between teaching aptitude of effective and ineffective male and female teachers.

Ravi kant (2011) found that male secondary school teachers had more teaching aptitude than female teachers working in secondary schools.
Khargone (2012) found that male middle class teachers possessed more teaching aptitude in comparison to female teachers without a significant difference.

Satyanarayana (2012) revealed that men teachers had higher teaching aptitude than women teachers.

Parveen Sharma (2012) found that gender of pupil teachers do not contribute towards teaching aptitude significantly.

**Teaching Aptitude and Locality**

Bhasin, Chanchal (1988) found that there was no significant difference between rural and urban teachers with regard to their teaching aptitude.

Periasamy (2001) found no significant difference between urban and rural students of DIETs in their aptitude for teaching.

Ravana Reddy (2001) found that both rural and urban prospective mathematics teachers possessed high teaching aptitude without having any significant difference in their teaching aptitude.

Mallikarjuna Reddy (2010) found that the rural and urban secondary school science teachers had very high teaching aptitude with a significant difference. The rural teachers have better teaching aptitude than their urban counterparts.

Surender Kumar and Priyanka Sethi (2010) found that there is no significant difference in the teaching aptitude of urban and rural secondary school teachers.
Ravikant (2011) found that location has no significant role in the teaching aptitude of secondary school teachers.

Khargone (2012) revealed that urban and rural middle class teachers feel more or less same teaching aptitude without a significant difference.

Satyanarayana (2012) found that rural teachers had a better teaching aptitude than urban teachers.

Shri Krishna Mishra and Badri Yadav (2012) reported that there is no significant difference between urban and rural secondary school teachers of Khargone city.

Surinder (2012) found that there is no significant difference between rural and urban secondary school teachers in relation to their teaching aptitude.

**Teaching Aptitude and Academic Achievement**

Diwan and Dinesh Kumar (1991) found that the academic achievement of student teachers was related to teaching aptitude.

Kuraishy and Ahmad (2010) observed that the high academic background group was significantly different from low academic group regarding total teaching aptitude.

Parveen Sharma (2012) found that teaching aptitude of pupil teachers was significantly correlated with their academic achievement.

**Teaching Aptitude and Community**

Khargone (2012) found no significant caste difference in the teaching aptitude of middle class teachers and he declared that caste has no important role in teaching aptitude.
Teaching Aptitude and Medium of the Study

Mallikarjuna Reddy, V. (2010) found that the English medium and Telugu medium secondary school science teachers possessed very high teaching aptitude with a significant difference between them. The English medium secondary school science teachers were better in teaching aptitude than the Telugu medium secondary school science teachers.

Satyanarayana (2012) revealed that English medium and Telugu medium secondary school teachers possessed a very high teaching aptitude with a significant difference. English medium secondary school teachers had a better teaching aptitude than Telugu medium secondary school teachers.

Teaching Aptitude and Residential Status of Students

Mallikarjuna Reddy (2010) found that the residential school science teachers had a better teaching aptitude than the non-residential secondary school science teachers.

Satyanarayana (2012) found that both the residential and non-residential secondary school teachers possessed very high teaching aptitude without a significant difference.

Teaching Aptitude and Age

Mallikarjuna Reddy (2010) found that the more aged secondary school science teachers possessed higher teaching aptitude than less aged counterparts.

Satyanarayana (2012) revealed that more aged secondary school teachers possessed higher teaching aptitude than their less aged counterparts.
Teaching Aptitude and Type of School

Mallikarjuna Reddy (2010) found that the Government and Private secondary school science teachers had a very high teaching aptitude without any significant difference between them.

Satyanarayana (2012) revealed that both Government and Private secondary school teachers possessed very high teaching aptitude without any significant difference. The teaching aptitude was dispersed widely in Government and Private school teachers.

ATTITUDE TOWARDS TEACHING MATHEMATICS

A teacher who has a favourable attitude towards teaching will enjoy teaching. The following are some of the studies which were in line with the above theme.

The findings of the previous research on Attitude towards Teaching in relation to the selected variables were presented here under:

Attitude towards Teaching and Prospective Teachers

Kenneth and Vaughla (1965) found that the attitude of those prospective teachers who had completed the two years of teacher training programme was significantly improved as a result of their training.

Austin (1979) found that the 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 of mathematics education on the attitude of pre-service mathematics teachers towards teaching mathematics.
Ramakrishnaiah (1980) found that the attitude towards teaching profession was related to success in teaching.

Chako (1981) found that the teacher and student characteristics are correlates of learning outcomes in mathematics and the teacher’s attitude towards teaching significantly predict student’s attitude as well as achievement in mathematics.

Mahapatra (1987) found that intelligence and attitude towards teaching of the B.Ed. students’ success was 20%. Intelligence, attitude and vocational interest were considered to be the most influential predictors.

Eaton and Kidd (1988) found that the pre-service secondary school mathematics teachers have negative attitude towards the teaching of mathematics.

Balakrishna Reddy (1990) found that there was no significant difference between different age groups of teachers with regard to their attitude towards teaching.

Ava (1991) found that the subject matter, audio visuals, classroom management and communication found more positive attitude towards theory and practical application in the teacher’s preparation.

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

Saxter and Anthony (1993) found that the prospective teachers who were exposed to a theory oriented normative model and reinforcement within a practice oriented context manifest more positive attitudes towards teaching.
Stephens (1993) found that the pre-service elementary teachers possessed significantly more negative attitude towards teaching mathematics.

Martin (1994) found that the positive teachers attitude contribute to the formation of positive student teachers’ attitude.

Oosthelizen (1994) stressed the need for prospective teachers to have an understanding of their student’s knowledge and feelings about the subject they teach.

Skariah (1994) found that the high teaching success group and high attitude towards teaching group are more creative than other groups.

Roos and Marie (1995) found that the pre-service elementary teachers have positive attitude towards teaching prior to early field experience and even have more positive attitude towards teaching after their early field experience.

Reddy (1995) reported that the attitude of teachers do not significantly influence the success of the student teacher.

Marso and Pigge (1996) investigated that the teacher preparation itself had an impact upon the teacher candidate’s affective characteristics.

Chidolue, Mercy (1996) found a significant positive relationship among teacher experience, teacher locality and teacher attitude towards teaching.

Janet (1997) found that the pre-service elementary teacher’s competency in mathematics develops process skills and attitude towards mathematics.
Mapoleio (1998) suggested that knowing appropriate facts, algorithms and procedures was not sufficient to guarantee the attitude towards teaching mathematics.

Arp (1999) found that the pre-service teachers had negative attitude when they themselves are students which can result in negative cycles in their own classroom teaching.

Cornelious (2000) revealed that intelligence, attitude towards teaching and academic achievement of teacher trainees are the discriminating factors of the different groups of subjects.

Davies and Savell (2000) found that the pre-service childhood students entering their teacher education programme felt negative about mathematics.

Grootenboer (2002) found that the pre-service mathematics teachers had negative attitude towards teaching mathematics.

Bowen-James and Freislich (2003) found a substantial relationship among the attitude factors of mathematics, anxiety and confidence in teaching mathematics.

Amarto and Watson (2003) reported that the pre-service teachers did not always have the conceptual understanding of the mathematics content that is expected to teach.

Viswanathappa (2005) found that the attitude of student teachers towards teaching profession as a predictor variable which predicts their teaching competence in lesson planning, presentation, closure of lesson and evaluate with various degrees of contribution and is significant at 0.01 level.
Darling-Hammond (2006) suggested that the teacher educators should be cognizant that pre-service teachers should bring knowledge, beliefs and attitude towards teaching for shaping classroom practices.

Vander Sandt (2007) found that the teacher’s attitude regarding mathematics and students in relation to attitude towards the teaching mathematics had powerful impact on the atmosphere within the mathematics classroom.

**Attitude towards Teaching and Teachers**

Beamer and Ledbetter (1957) revealed that the inexperienced education majors had higher mean scores in attitude towards teaching when compared to the mean score of experienced teachers.

Ryans (1960) analysed that at the elementary level married teachers obtained more favourable scores in class room behaviour and child centred educational view points, while at the secondary school level unmarried teachers obtained more favourable scores on the same variable.

Reed (1968) found that there was an increase in the teacher’s attitude towards teaching who utilised student’s intrinsic motivation.

Mahapatra (1987) found that intelligence, attitude towards teaching and vocational interests were predictor variables of teaching success.

Ramakrishnaiah (1989) found that the college teachers had favourable attitude towards teaching.

Karp and Karen (1991) found that the teachers with positive attitude towards teaching mathematics employ different methods of mathematics instruction than those with negative attitude.
Ruscoe Gordon (1991) analysed the qualitative and quantitative perspectives on teacher attitudes and suggested that simultaneous involvement in more than one type of restructuring had a positive effect on the teacher’s attitude towards teaching.

Anderson (1991) suggested that the teachers should be enthusiastic to use more indirect teaching behaviour for pupil’s interest in teaching mathematics.

Breakwell and Beardsell (1992) incorporated perceptions of student teachers, anxiety towards mathematics and attitude of peers which were important factors for developing attitude towards teaching mathematics.

Fennema and Sherman (1995) found that the student teachers who were well organised, achievement oriented and enthusiastic tended to positive attitude towards teaching.

Belagali (2011) found that the higher the attitude towards teaching profession, the higher is the satisfaction among the secondary school teachers.

**Attitude towards Teaching and Gender**

Beamer and Ledbetter (1957) found that women teachers obtained a higher mean score than men teachers on the Teacher Attitude Inventory.

Lindgreen and Pattan (1958) found that men teachers were less favourably disposed to children and current educational theory and practice than women teachers.

Ryans (1960) observed that the women teachers obtained significantly higher scores in the scales measuring attitude towards pupils and
class room practices. At elementary level men were less responsible in class room behavior and more favourable towards democratic class room practices.

NCERT (1971) in its study revealed that there is a significant difference in the attitude of male and female teachers towards teaching profession.

Sukhwal (1976) found that the attitudes of married lady teachers to be favourable towards teaching.

Ramakrishnaiah (1980) revealed that the women teachers have a significant and more favourable attitude towards teaching than their men counterparts.

Gupta (1984) found that male and female teachers differ significantly in their attitude towards teaching.

Rawat and Sreevastava (1984) found a significant difference between male and female teacher trainees in their attitude towards teaching.

Boswell (1985) revealed that boys performed better than girls while teaching mathematics.

Anand (1986) found that a greater percentage of women teachers cherished a favourable attitude towards students as compared to men teachers.

Goddar Spear (1989) suggested that male subjects had better teaching attitude than female subjects which is believed to be from the family influences and socioeconomic status of parents and cultural and traditional influences.
Poozhikuth (1989) found that the female teachers have high attitude towards teaching than the male teachers.

Gorrell (1991) observed that many families in Sri Lanka see teaching as a good profession for women but not well for men.

Ramachandran (1991) found that female teachers had a more favourable attitude towards teaching than the male teacher trainees.

Ganapathi (1992) found male and female student teachers had a favourable attitude towards the teaching of mathematics.

Kumar (1995) found a significant difference in the attitude towards teaching of male and female teacher trainees.

Balan (1996) found no significant gender difference in attitude towards teaching of student teachers of Kerala.

Pushpam (2003) found a significant and positive relationship between attitude of women teachers towards teaching profession and job satisfaction.

Devi (2005) found that the role conflict and attitude towards teaching are capable of significantly and efficiently discrimination between successful and less successful groups of women teachers of Kerala.

Belagali (2011) found that the female teachers had higher attitude towards teaching profession as compared to the male teachers of secondary schools.
**Attitude towards Teaching and Academic Qualification**

NCERT (1971) in its study found that teachers with lower educational qualifications had more positive attitude than those with higher qualifications.

Bhandarkar (1980) found that the attitude towards teaching profession is not significantly related to the qualification of the teachers.

Nirmala Devi (2005) found that there is no significant difference in the attitude of the student teachers with undergraduate and post-graduate qualifications towards teaching.

**Attitude towards Teaching and Academic Achievement**

Gopalacharyulu (1984) found that the attitude towards teaching and the attitude towards training influence achievement.

Brown and Campione (1994) revealed evidence that curricula in which student teaches, knowledge and skills grow is significantly connected to their learning, and therefore achievement.

**Attitude towards Teaching and Locality**

Belagali (2011) found that the urban secondary school teachers had higher attitude towards teaching profession as compared to the rural secondary school teachers.

**Attitude towards Teaching and Age**

Beamer and Ledbetter (1957) in their study revealed that the inexperienced education majors had higher mean scores in attitude towards teaching when compared to the mean score of experienced teachers.
Poozhikuth (1989) found that age is not significantly associated with attitude towards teaching.

Ramakrishnaiah (1989) found that the teachers below 35 years of age have a more favourable attitude towards teaching than the middle age group and the high age group.

Balakrishna Reddy (1990) found that there was no significant difference between different age groups of teachers with regard to their attitude towards teaching.

**Attitude towards Teaching and Marital Status**

Ryans (1960) analysed the differences between married and unmarried teachers with regard to various class room behaviours and attitudes. The results indicated that at the elementary level married teachers obtained more favourable scores in class room behaviour and child-centred educational view points, while at the secondary school level unmarried teachers obtained more favourable scores on the same variable.

Ramakrishnaiah (1980) conducted a study on college teachers and found that the unmarried teachers had a significantly more favourable attitude towards teaching than the married teachers.
ASSOCIATION AMONG TEACHING EFFECTIVENESS, TEACHING APTITUDE AND ATTITUDE TOWARDS TEACHING MATHEMATICS

Teaching Aptitude and Teaching Effectiveness

Sharma (1971) found that teaching aptitude is a predictor of teacher effectiveness.

Vashishta (1973) found that teaching aptitude and attitude towards teaching to be the best predictors of teacher effectiveness of B.Ed. students.

Mutha (1980) found that effective teachers have significantly higher scores on teaching aptitude than ineffective teachers, confirming aptitude as a significant predictor of effective teaching.

Vyas (1982) found relationship between teaching effectiveness and teaching aptitude but no relationship between teaching success and teaching aptitude.

Thilakan and Visveswaran (1986) found that the attitude and aptitude of the trainees were highly related with each other and the positive correlation coefficient indicated that those who had high aptitude in teaching also had positive attitude towards teaching profession.

Singh (1987) found a positive and significant correlation between teaching aptitude and teaching effectiveness.

Bhasin and Chenchal (1988) found a significant positive correlation between teaching aptitude and teaching effectiveness.

Meera and Jayalakshmi (1990) found that the teaching aptitude significantly influence teaching effectiveness.
Bhoom Reddy (1991) found that there was a significant relationship between teaching aptitude and attitude of secondary school teachers.

Kukreti (1992) found a significant positive correlation between teaching aptitude and teaching efficiency.

Beena (1995) found that the teaching aptitude is a significant predictor of teaching effectiveness.

Parveen Sharma (2012) found that general teaching competence of pupil teachers significantly affect their teaching aptitude.

**Attitude towards Teaching and Teaching Effectiveness**

Elliassen and Martin (1940) found that the attitude towards teaching is associated with teaching success.

Hellfritzsch (1945), Rolfe (1945), Rostker (1945) reported that the attitude of teachers towards teaching was significantly correlated with success in teaching as judged by pupil growth.

Evana (1946) found that the attitude towards schools seemed to have high correlation with attitude to teaching as career.

Ringness (1951), Swanson (1961), Gallaghar (1967) reported that the attitude of teachers towards teaching is related to teaching efficiency.

Barr (1958) found that there is a significant correlation between the attitude towards teaching and the success in teaching of teachers.

Cook, Leeds and Callis (1956) pointed out that the attitude of teachers towards school work would give us an indirect indication of how successful the individual will be in teaching.
Roy (1971) found a positive relationship between teacher attitude and teaching efficiency.

Samantharoy (1971) found that the teaching attitude influence teaching efficiency.

Mann (1980) found that the relationship between attitude of teachers towards the teaching profession and success in teaching was significant. The successful teachers had healthier attitude towards the teaching profession than unsuccessful teachers.

Patil (1984) found that the B.Ed. student teachers attitude towards teaching was positively correlated with effective teaching.

Khatoon (1985) found that the teachers attitude towards teaching has nothing to do with the teachers' influence in the classroom.

Vijayalakshmi (1985) supported the view that the attitude of teachers towards teaching is related to their teaching efficiency.

Mahapatra (1987) found that the attitude towards teaching is positively correlated with teaching success.

Mathai (1992) found that the attitude towards teaching is significantly related to success in teaching.

Bose (1993) found a positive significant relationship that exists between teaching attitude and teacher effectiveness.

Cornelius (2000) found that the attitude towards teaching had positive impact on teaching effectiveness.

Sumangala and Usha Devi (2009) found that the attitude towards teaching profession is a significant predictor of success in teaching.
Some observations on Review of Related Literature

An analysis of the past research presented in this chapter reveals the following important observations.

- There are different meanings and definitions to effective teaching and teaching effectiveness. There is no general or accurate definition for teaching effectiveness. Therefore, it is not possible for drawing any generalisations in defining teaching effectiveness.
- There are many controversies with regard to the methods that are to apply for the measurement of teaching effectiveness.
- From the beginning i.e., before 1990, the influence of aptitude in teaching and attitude towards teaching is to some extent. But the trend has been changed after 1990 onwards. Most of the persons are favourably inclined towards teaching to enter as teachers.
- The influence of variables on teaching effectiveness, teaching aptitude and attitude towards teaching vary from situation to situation.
- There are very few studies on teaching effectiveness of mathematics prospective teachers.

It may be seen from the review of literature presented in the foregoing pages that a number of studies have been carried out on the teaching effectiveness, teaching aptitude and attitude towards teaching and other related variables. The results of the studies present a confusing picture with contradictory results.

Although the teaching effectiveness, teaching aptitude and attitude towards teaching are very essential for good teaching, these areas are not covered adequately in the case of prospective mathematics teachers. The
researcher being a mathematics teacher educator is interested in exploring these variables on the population of prospective mathematics teachers of Acharya Nagarjuna University.

Thus, the review of the related literature helped to develop a clear insight into the problem and in selecting the present problem, namely “A Study of Teaching Effectiveness, Teaching Aptitude and Attitude towards Teaching Mathematics of Prospective Mathematics Teachers.”