CHAPTER - II

REVIEW OF RELATED LITERATURE

2.1 Introduction

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

In the field of education as in other field too, 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 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 as a result of 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 researcher. A careful review of the research journals, books, dissertation 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 begins in vacuum. The related literature is worthwhile for an effective research.

2.2 Personality

*Ryans (1964)* in his work "The Teachers Characteristics Study" which was a massive research work involving approximately one hundred separate studies and over 6000 teachers in 1700 schools and 450 school systems participated in various phases of investigation. One of the major objectives of the study was to compare findings are related to the present study of the investigator. Hence she highlights some major findings of Ryans on the comparative aspect of the study – ‘High’ teachers compared with ‘Low’ teachers.

There was a general tendency for ‘High’ teachers (teachers related high with respect to overall classroom behaviour) to be extremely generous in appraisals of the behaviour and motives of other persons; to possess strong interest in reading and literacy affairs, to be interested in music, painting and the arts in general; to participate in social groups; to enjoy pupils relationships, to prefer non-directive class room procedures; to manifest superior verbal intelligence; and to be superior with respect
to emotional adjustment. On the other hand ‘Low’ teachers (teachers rated low with respect to overall classroom behaviour) tended to be restrictive and critical in their appraisals of other persons; to prefer activities which did not involve close personal contacts; to express less favourable opinion of pupils, to manifest less high verbal intelligence; to show less satisfactory emotional adjustment and to represent older age groups.

Quraishi (1972) studied the personality, attitudes and classroom behaviour of teacher.

The sample of the study consisted of 200 teachers drawn from twenty one secondary schools. Flanders interaction analysis category system was used for observing and recording teachers’ classroom verbal behaviour. Thurstone temperament schedule was employed to assess the personality traits, and Attitudes scale constructed by Wandt, Glassey and Patel were adopted to measure attitudes Pearson’s product moment correlation technique, stepwise regression analysis and ‘t’ test technique were used for analysing the data. Findings: (1) Teacher’s verbal behaviour in the classroom was related in a small measure to their personality and attitude. (2) Teachers’ attitude towards democratic classroom procedures correlated significantly.

Kaul (1972) studied the differentiating personality traits and values of 124 “popular” teachers and 100 “not popular” teachers.
The main findings of the study were:

(i) The popular teachers distinguished themselves as more outgoing, intelligent, emotionally more stable, sober, conscientious, venturesome, tough minded, shrewd, placid, controlled and relaxed.

(ii) They were significantly high on theoretical, social, political and religious values and were significantly low on economic and aesthetic values.

(iii) They had favourable attitude towards teaching and they were effective in their work as teachers.

McCaulley (1976) evaluated 3,867 college students to determine psychological type preference using the MBTI. A subset of this student sample was comprised of 194 engineering majors. McCaulley sought to determine whether certain psychological types were significantly interested or uninterested in specific engineering specialties. Overall analysis revealed that 62% of engineering majors were classified as introverts (I), 52% preferred a sensing (S) approach to perceiving and learning. 59% preferred an analytical or thinking (T) approach to decision-making, and 60% preferred a judging (J) classification pertaining to applying decisions to specific environments. This type profile differed from the total student sample who displayed the following psychological type preferences: 52% extroversion (E), 53% intuition (N), 63% feeling (F), 50% judging (J) and 50% perceptive (P) preferences.
Singh (1976) examined the relationship between some personality variable and teaching effectiveness. The major findings of the study were as follows:

(i) The needs of superior, average and inferior teachers were clearly distinct from one another and superior teachers were distinct from the other two in cognition, dominance, autonomy and construction.

(ii) The inferior teachers were distinct from the other two by their need of acquisition.

(iii) The inferior teachers did not seem to possess the need of exhibition, which was most prominent in the average teachers. The other most prominent needs of the average teachers were exposition and play.

(iv) Prominent needs of inferior teachers were succourance, deference and play.

(v) The most prominent needs of superior teachers were nurturance, achievement and counteraction.

(vi) The organisation pattern of superior teachers was generally logical and that of inferior teachers was emotional.

(vii) The interpersonal relations as regards social behaviour were high in superior teachers but very low in inferior teachers.
(viii) The inferior teachers lacked self-confidence in teaching and in solving problems; the average teachers had self-confidence but had adjustment problems.

(ix) The superior teachers had more of imagination, while the inferior ones were weak in it.

(x) The average teachers were more entangled in family problems and were more sensitive to them but the inferior teachers were less sensitive to such problems. The superior teachers were less entangled in family problems and were able to solve problems quickly.

(xi) The superior teachers used literary language more than the average and inferior teachers.

Gupta (1977) investigated into the personality characteristics, adjustment level, academic achievement and professional attitude of successful teachers. The data were collected with the following tools; Cattell 16 PFQ, Bell’s Adjustment Inventory, Minnesota Teacher Attitude Scale and a tool to measure teaching success. It was found success in teaching was significantly related to personality factors. A, B, C, F, G, H, I, L, N, O, Q3 and Q4; adjustment in various fields of life, like home, health, social, emotional and total adjustment and professional attitude. The personality characteristics, adjustment-home, health, social, emotional, professional and total adjustment, attitude towards teaching and sex were found to be the determinants of success in teaching. Also
it was concluded that the factors as a group were better indicators of teaching success than individual factors.

Geol (1978) studied the behaviour pattern of extravert and introvert teachers.

Stratified purposive sampling technique was employed to select 100 extravert and 100 introvert teachers from a distribution of 400 teachers. The Mandsley Personality Inventory (Hindi version) adapted by Jalota and Kapoor was used to identify extravert and introvert teachers. The Flanders Interaction Analysis Category System (FIACS) was used to observe the classroom behaviour of the teachers. The intra-raters reliability was estimated by Scott's formula and was recorded to be 0.899.

The study revealed the following:

Extrovert teachers seemed to have greater interchange of classroom events than introvert teachers. The extrovert teachers had larger transition from-pupil response to the categories of teacher praise, encourage, 'acceptance' and 'questions' as compared to introvert teachers. Introvert teachers seemed to have greater content emphasis whereas extrovert teacher seemed to provide more opportunity for 'pupil response' to 'pupil direction'. The extrovert teachers' tendency was to break the silence or confusion by asking question more frequently
whereas introvert teachers' tendency was to give direction in the same state of situation. It appeared that extrovert teacher had all the seven interaction models of teaching behaviour (FIACS).

**Singh (1978)** studied the relationship between teacher's personality, teaching success and behavioural changes in students.

The major objective of the investigation was to find out the relationship of teacher's personality, success in teaching and impact on student's behaviour. The basic sample comprised 135 permanent male teachers with a minimum of three years' experience in teaching and 2839 boys of Class IX of the secondary and higher secondary schools of Udaipur. For the final study, ninety teachers, equally divided into high, average and low groups, were selected on the basis of students' rating headmasters' rating and performance of students in public examinations. Factors, such as geographical location, sex age, educational qualifications, experience, subjects taught and income, were controlled. The case study method along with the causal comparative method and the correlational technique were used. The tools used were teaching success rating scale, information schedule, interview schedule, critical incidents blank, behaviour change questionnaire, all of which were constructed by the investigator. Allport Vermon-Lindzey Study of Values, 16 PF, Incomplete Sentences Blank and Roschach Inkblot Test were also used. Data were analysed with the help of mean standard
deviation, t-test, median test, chi-square test and other necessary techniques.

The major findings of the investigation were: (i) The theoretical and social values were positively related to teaching success but the economic and aesthetic values were negatively related. (ii) The highly successful teachers were assertive, venturesome, controlled, emotionally stable and trusting. (iii) The highly successful teachers were better adjusted than the average and low teachers while the average successful teachers were better adjusted than the low successful teachers. (iv) Positive attitude towards family, a sense of identification with the people, place and profession and a growing concern for the school, students and studies were helpful in making a teacher successful. (v) The highly successful teachers possessed better intellectual capacity and efficiency, had higher creative potential and level of aspiration, showed the more introversion and better adjustment than the average and low successful teachers, (vi) The highly successful teachers were able to induce learning development interests and foster desirable attitudes in their students. (vii) The unsuccessful (low successful) teachers contributed significantly to developing aversion to the subject, creating misunderstandings and fostering undesirable attitudes and producing little subject learning.

**Dileep Kumar (1979)** studied the personality characteristics of innovative and non-innovative teachers and concluded that innovate
teachers were young, active and outgoing individuals and less depressive in mood.

**Sansawal and Gurpal Jariah (1979)** examined the personality differences among high and low creative teacher-trainees. The four factors of Cattell 16 PF where the high creative teacher-trainees significantly differed from low creative group were: B+, F+, L-, Q4-.

**Lawrence, et.al., (1982)** conducted the two attitude types, extraversion and introversion, describe how an individual prefers to engage the environment and use the four basic mental functions. Extraversion and introversion are seen as complementary orientations toward life.

Extraversion defines the actions of individuals who prefer an orientation to the outer world of people, places, and things. Introversion describes a preferred orientation toward the inner world of thoughts, concepts and ideas.

**Malik (1984)** made a comparative study of personality factors and teaching environments of successful and unsuccessful teachers in selected schools of Rajasthan.

The major objectives of the study were: (i) to identify successful and unsuccessful science teachers on the basis of criteria evolved by the investigator, (ii) to compare the learning environments of successful and
unsuccessful science teachers as perceived by them and their students, (iii) to compare the personality factors of successful and unsuccessful science teachers. (iv) to find out the interrelationship between personality factors of science teachers, their success in teaching and the learning environment as perceived by the science teachers themselves and their students, and (v) to find out the factor pattern associated with science teaching.

The study was confined to 72 higher secondary schools located in seven major cities of Rajasthan. Initially 205 science teachers with a minimum experience of three years were selected. The student sample consisted of 3450 science students. In order to measure teaching success of science teachers, a Science Teaching Success Rating Scale was constructed by the investigator. Besides this tool, a bio-data form and a Hindi version of Learning Environment Inventory were adopted.

The findings were: (1) Some personality factors were significantly related with teaching success which was positively correlated with intelligence, emotional stability, tender mindedness, suspiciousness, self-sufficiency, placidity and relaxedness. (2) Successful science teachers had clarity of goals and their students. (3) Teaching success was positively correlated with dimensions of formality, goal direction, satisfaction, democracy, diversity and cliqueness. (4) Teaching success was negatively correlated with dimensions of friction, difficulty, apathy
and disorganization. (5) The classroom atmosphere of unsuccessful science teachers was full of tension, quarreling among students, confusion in class activities, lack of affinity with class work, and there was favouritism. (6) Some significant correlation, either positive or negative, was found between the classroom learning environment and personality factors. (7) Personality, learning environment, concomitants of teaching success (physical environment, democracy, goal direction, satisfaction, formality), age and experience were some of the factor patterns associated with science teaching.

Myers and McCaulley (1985) personality types are expressed by a four-letter composite that represents an individual's preference on each of the four indices. The four personality dimensions, based on Jung's attitude (extraversion and introversion) and functions (perception and judgement) are: Extraversion (E) Active involvement with people as a source of energy. Perception and judgement are focussed on people and things. Introversion (I) A preference for solitude to recover energy. Perceptions and judgement are focussed on concepts and ideas. Seventy-five percent of the general population prefers an extraverted orientation, while 25% prefer an introverted one.

Beckman (1993) studied the personality characteristics of effective teachers.
The purpose of this study was to compare personality characteristics, as measured by the Gregore Mind Style Delineator and the Myers-Briggs Type Indicator, of those teachers identified as exhibiting effective teaching performance as measured by the Pre-Teacher Assessment Model of Indiana University of Pennsylvania, a Principal's Rating Form, a Participant's Rating Form, and a Student's Rating Form.

The data were collected on fifteen adult volunteers. Each received a total teacher effectiveness score. For the purposes of this study, effective teaching was defined in terms of planning and organizing, sensitivity, initiative, and innovativeness. Analysis of variance with post hoc procedures demonstrated that teacher performance was affected by the participant's years of experience, their level of education, and the participant's school district's socio-economic status.

In addition to these demographic factors, analysis of variance and regression analysis revealed that the randomness variables within the ordering dimension of the Gregore Mind Style Delineator made a significant impact on the teaching dimensions of sensitivity, initiative, innovativeness and total teacher effectiveness. Portfolio documentation enhanced the qualitative analysis to interpret and explain the quantitative results. It was concluded that the Gregore Mind Style Delineator ordering variables of randomness significantly impacted effective teaching.
Carroll Bryan Shannon (1994) conducted a study on 'How E and I Preferences Affect Learning'.

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<td>• Quiet reflection</td>
<td>• Learning by talking and physically engaging the environment,</td>
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<td>• Keeping one’s thoughts inside until they are polished</td>
<td>• Letting attention flow outward toward objective events,</td>
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<td>• Letting attention flow inward</td>
<td>• Talking to help thoughts to form and become clear</td>
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<td>• Being engrossed in inner events: ideas, impressions, concepts</td>
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<td>• Reflecting first, acting after</td>
<td>• Acting first, reflecting after,</td>
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<td>• Looking for new data to fit into the internal dialogue that is always going on</td>
<td>• Plunging into new material</td>
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<td>• Working privately—perhaps checking one’s work with someone who is trusted</td>
<td>• Starting interactions needed to stimulate reflection and concentration</td>
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<td>• Reading as the main way of studying</td>
<td>• Having a strong interesting, external reason for studying, beyond learning for its own sake</td>
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<td>• Listening to others talk about topics being studied, and privately processing what they take in</td>
<td>• Avoiding distractions that will cut into their concentration</td>
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<td>• Extroverting just when they choose</td>
<td>• Studying with a friend</td>
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Instruction that fits I’s: These types like situations that let them:

- Work internally with their own thoughts: listening, observing, lab work, reading, writing
- Process experiences at own pace. Present the results of their work in forms that let them keep privacy
- Have ample time to polish their work inside before needing to present it
- Have time to reflect before answering the teacher’s questions
- Tie their studies to their own personal interests, their internal agenda

Instruction that fits E’s: The extravert types do their best work with:

- Opportunities to think out loud; e.g. one-to-one with the teacher, classroom discussions, working with another student, action projects involving people
- Learning activities that have an effect outside the learner, such as visible results from a project
- Teachers who manage classroom dialogue so that extraverts have before they add them to class discussion
- Assignments that let them see what other people are doing and is regarded important

Carroll Bryan Shannon (2001) The purpose of this study was to explore, in student teacher/cooperating teacher pairs, the effects of differential personality traits on student teacher performance and satisfaction. Student teacher performance, satisfaction with the practicum experience, and satisfaction with the cooperating teacher were assessed. Two hundred thirty senior education majors and their cooperating teachers were invited to participate.

This was a predictive study using multiple regression. At the beginning of the student teaching practicum, student teachers and cooperating teachers completed the Comrey Personality Scales. At the
conclusion of the practicum, student teachers completed the Student Teacher Opinionaire and the cooperating teachers completed the Final Student Teacher Evaluation. Ninety-six pairs completed all the required forms. Using multiple regression, the effect of the predictor variables (the eight CPS Scales) were correlated with achievement and satisfaction scores.

The results of this study indicated that based upon the criterion measures employed, differences in personality traits between student teachers and cooperating teachers were not effective predictors of student teacher performance or satisfaction. Upon further analysis of the data, it appeared that student teacher personality traits themselves were more predictive of their performance and satisfaction than were cooperating teacher personality traits or differences between personalities.

2.3 Attitude

Smith (1965) conducted two studies. In the first study, he divided the sample into two groups viz., the non-teacher group and the teacher group. The non-teacher group comprises of 160 High School teachers and the non-teachers with 173. They were asked to rate the behaviour in the list of terms describing the behaviours; both with reference to 'ideal teacher' and typical teacher.
In the second study, a list of phrases from literature, describing good teacher, was used to test high school teachers and University students in a non-teaching curriculum. Both groups were asked to rank the statements in the order that best described the ideal or superior High School teacher.

In the third study, he used rating scale of the first study and asked teachers to rate themselves both as they think really were and as they would like to be.

The major results of the three studies can be given a rather consistent interpretation. The non-teacher group wishes the teacher to be more active, aggressive and socially forceful while the teacher groups seems to think of their role as a more passive confirming seen and not heard pattern—observes Smith...it is the older, more experienced teacher who views the teacher role as that of one who is seen and not heard. Singh (1974) conducted a study with an objective to known teachers attitudes towards teaching profession. The sample consist 521 secondary school teachers working in union territory of Delhi. He found that male and female teachers differed on their attitude.

Raina and Raina (1968) conducted a study on “Attitude changes of graduate student teachers”. A Hindi version of the Minnesota Teacher Attitude Inventory was administered on 140 student teachers. They found that an exposure of the 140 graduate student teachers to teacher's
college programme did lead to any significant shift of attitudes in a favourable direction.

To test one of the hypothesis, Katti (1970) administered a self constructed Attitude Scale on Secondary School Teachers. He found that age of the teacher does not affect their attitude towards teaching profession. He administered a self constructed Likert's type summated rating scale on 406 teachers working in the secondary schools of Dharwad district area. Another findings of the study reveals that no difference was found between graduate and Post graduate teachers in their attitude towards the teaching profession.

Samantaroy (1971) made a study of teacher attitude and its relationship with teaching efficiency. A sample of 320 graduate teachers - 268 men and 52 women of the secondary schools of Orissa state was selected by stratified random sampling technique - location-wise break up of the sample showed 149 urban and 171 rural teachers.

The tools used in the investigation for measuring the variables were: (1) The teacher attitude scale, (2) The score card and (3) The Bell’s adjustment inventory. The teacher attitude scale developed by the investigator was a battery of five 21 item scale, each measuring a particular attitude continuum and the total scale measuring an over all attitude of the teachers. The attitude objects chosen for the scale were
(i) the subject of teaching profession  (ii) educational administration  (iii) the pupils  (iv) the subject of teaching and  (v) the community.

The following were the findings of the study: There existed some degree of positive relationship between the variables - teacher attitude and teaching efficiency, thereby showing that superior efficiency goes with favourable attitude and vice versa.

**Mehrotra (1973)** studied “The effect of teacher education programmes on the attitude of teachers towards the teaching profession’. He found that:

1. The attitude of some age groups towards the profession at the end of the course was less positive than at the beginning.

2. The attitude was more favourable in higher age groups and it increased as the age increased except a decrease in the age group 32-36 years.

**Singh (1974)** conducted a study entitled “Measurement of Teachers’ values and their relationship with teacher attitude and job satisfaction”. Investigator collected required data by administering the Ahluwalia’s Teacher Attitudes Inventory. He found that:

1. The professional attitudes of teachers were favourable and their attitude towards child centered practices and educational process was more favourable than their
attitude towards teaching as a profession, class room teaching, pupils and teachers.

2. There was no difference in the attitude of teachers due to difference in age.

Attitude towards teaching profession was not positively related to experience in the teaching profession. This result was drawn by Saran (1975) in his study "On teacher's attitude towards teaching profession and certain personality variables as related to their level of education amount of experience", gathered data from 1000 teachers (among these 510 were male and 490 were female) working in four western districts of Uttar Pradesh. He found that:

1. The attitude of teachers towards teaching profession was positive.

2. Level of Education (Qualification) was positively related to degree of attitude towards the teaching profession.

To find out the difference in the attitude of graduate and post graduate teacher trainees, Maheshwar Panda (1996) in his study formulated a null hypothesis as “there is no difference between graduate and post graduate teacher trainees in their attitude towards teaching profession”. To test this hypothesis he administered the Ahluwalia’s Teacher's Attitude Inventory (only 15 items concerned with teaching profession factor) on 70 teacher trainees studying in B.Ed. class of
College of Teacher Education, Balangir (Orissa). He found that there was no significant difference between graduate and post graduate teacher trainees in respect of their attitude towards teaching profession.

The review of related literature helped the investigator in many ways. It threw light on gaps in the researches conducted already in the field of teachers attitude study. Some studies gave an idea about substantial agreement and some presented conflicting conclusions which in turn helped the investigator to base his arguments in relation to the findings of the present study other than female teachers.

Mishra (1977) studied the attitudes of teachers working in Government, Aided conventional Sanskrit Vidyalaya of Varanasi towards teaching profession. The main objective of the study was to study the attitudes of the teachers working in conventional Sanskrit Vidyalayas towards the teaching, child centered practices, teaching process, attitude towards students and teachers. The study was conducted on all the male 9234 and female 16 teachers working in fifty three Sanskrit Vidyalayas from primary to post graduate level situated in Varanasi. The study employed descriptive statistics and chi-square for analysing data. The teacher attitude inventory constructed by Ahluwalia was used as a tool to collect the data. Findings of the study shows that there was sex differences in the attitude towards teaching profession. Male teachers scored significantly higher Singh (1974) conducted a study with an
objective to known teachers attitudes towards teaching profession. The sample consist 521 secondary school teachers working in union territory of Delhi. He found that male and female teachers differed on their attitude.

With an objective to analyse the attitude of college teachers towards teaching profession Jaleel (1979) conducted a study on 27 college teachers from 21 different colleges. The Ahluwalia’s Teachers’ Attitude Inventory was used as a tool to collect the required data. The major findings of the study were the age of college teachers appeared to have definite positive relationship with their attitude towards the teaching profession. As teachers grew in age their attitude towards the teaching profession grew more favourable.

Mann (1980) made a study on some correlates of success in teaching of secondary school teachers.

The major objectives of the study were: (i) to find out the concept of administrators, teachers, teacher-educators and students of success teaching, (ii) to construct a scale to assess the success in teaching of secondary schools teachers teaching science, mathematics and social sciences to Classes IX, X, and XI, (iii) to identify successful and unsuccessful teachers, (iv) to differentiate the personality traits of successful teachers from those of unsuccessful teacher, (v) to compare the academic achievement and achievement in professional courses of
successful and unsuccessful teachers and (vi) to compare the attitude of successful and unsuccessful teachers towards the teaching profession, classroom teaching, child-centered practices, educational process, pupils and teachers.

The study was conducted on 1,800 male and female teachers working in high/higher secondary schools of Punjab. To collect data two sets of tools were used. The first set of tools consisted of the 16PF Test, Teacher Attitude Inventory (TAI) along with academic achievement scores of teachers the achievement scores of teachers in professional courses and teaching experience of teachers in number of years of service. The second set of tools consisted of a scale to measure teaching success. The scale had different items on different aspects like professional skills, personal qualities and social skills. Heads of schools, colleagues and students rated the scale.

The results revealed: (I) The personality factors A, B, C, G, H, N, and Q3 had significant positive relationship to teaching success and factors F, I, O and Q4 had negative relationship. (ii) The personality factor of successful and unsuccessful teachers difference with respect to eleven factors. 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. (iii) The relationship between attitude of teachers towards the teaching profession, classroom teaching, child-centered practices, educational process and success in teaching significant. The successful teachers had more healthy attitude towards the teaching profession and allied aspects than the unsuccessful teachers. (iv) Both academic achievement had positive relationship with teaching success. (v) Teaching experience was not related to success in teaching. (vi) There was significant difference in personality characteristics, attitude towards the teaching profession and allied aspects, academic achievement teachers. (vii) Personality characteristics, attitude towards the teaching profession and allied aspects academic achievement and achievement in professional courses were determinants of success in teaching.

The major findings of the study were: (i) Sex, professional training, nature of schooling and income level were significantly associated with the teacher's effectiveness. (ii) The effective teachers had significantly higher scores on intelligence than the ineffective. (iii) The effective teachers had higher scores on anxiety than the ineffectiveness. (iv) The effective teachers had significantly higher scores on teaching aptitude than the ineffective. (v) The effective teachers had significantly higher
scores on neuroticism than the ineffective. (vi) The effective teachers had significantly higher scores on theoretical value than the ineffective. (vii) The ineffective teachers had significantly higher scores on political value than the effective. (viii) The effective teachers had significantly higher scores on job satisfaction than the ineffective. (ix) The set of personality variables—ascendance—submission, anxiety, marital adjustment, extroversion, neuroticism, job satisfaction and teaching attitude—significantly predicted the teacher’s effectiveness. (x) Personality variables—ascendance—submission, anxiety, marital adjustment, extroversion, neuroticism, job satisfaction, teaching aptitude, real self—ideal self-discrepancy, religious value, social value, theoretical value, aesthetic value, economic value, political value and intelligence—significantly predicted the teacher’s effectiveness.

Goyal (1980) conducted a study on the relationship among attitude, job satisfaction, adjustment and professional interests of teachers educators in India based on sex, age, qualification and experience. Investigator found that large majority of the teacher educators were favourably inclined towards their profession.

A research was conducted on sample of 250 B.Ed. trainees by Som (1984). Joshi’s MTAI was used as a tool to collect data. The statistical techniques used were correlation, factor analysis and multivariate regression (Linear) analysis. It revealed from the research findings that:
1. Teachers were normal in respect of teacher attitudes towards pupils.

2. Female teachers tends to be higher than males in their attitudes towards teaching, the teaching profession and pupils.

A study was undertaken by Som (1984) with an objective to find the descriptive attitude pattern of teachers with reference to the teaching profession and pupil. He found that experienced female teachers exhibited significantly higher favourableness than experienced male teachers on their attitude towards teaching profession, classroom teaching, and moderately high on pupils.

Mouli, R.C. (1990) studied “The attitude of teachers towards teaching profession”. The study was conducted with the following objectives in view to determine the degree of relationship between a teacher’s age, sex, years of teaching experience and attitude towards teaching profession. To test one of the hypothesis; aged and experienced teachers have more positive attitude towards their profession than young inexperienced teachers he administered a tool on 100 teachers drawn from Hyderabad and Secunderabad. Findings revealed that there is no difference among aged, experienced teachers and young inexperienced teachers on their attitude towards teaching profession. In his study formulated one of the hypothesis as female teachers have a more positive
attitude towards their profession than male teachers. To test this hypothesis researcher used Mean and S.D. and he found that there is no significant difference between male and female teachers on their attitude towards teaching profession.

Venkata Rami Reddy and Rama Mohan Babu (1994) studied about the “Attitude of the residential and non-residential school teachers teaching”. They have selected 200 teachers each as a sample from some schools in Andhra Pradesh. They found that teachers of residential schools had a more favourable attitude towards teaching than the teachers of non-residential schools. Likewise women teachers had a more favourable attitude towards teaching in a single dimension out of five. But in other four dimensions they found no difference.

Maheshwar Panda (1996) in his study “Attitude of teachers-trainees towards teaching profession – A differential study”, was conducted with an objective to find out the difference between attitude of male and female teacher trainees. He formulated a null hypothesis as; there is no significant difference between male and female teacher trainees in their attitude towards teaching profession. To test the hypothesis he has collected data by using Ahluwalia’s Teachers’ Attitude Inventory. Mean, standard deviation and Chi-square test were used to analyse the data. It was concluded that there is no significant difference
between male and female teacher trainees regarding their attitude towards teaching profession.

**Rangarajan (1999)** studied "Attitude of Primary Teachers towards Competency based Lessons Plan". The aim of the study was to find out the attitude of primary schools teachers and primary schools headmasters towards Competency based lesson plan. This study was conducted on a sample of 149 teachers consisting of male and female teachers, primary teachers and headmaster. An attitude scale has been constructed based on the nine elements advocated by Dr. C. Palanivelu, Director, DTERT, Chennai. The study clearly revealed that the teachers have a positive/favourable attitude towards Competency based lesson plan.

**Annamalai (2000)** studied "Attitude of Teachers towards teaching". In his investigation an attempt has been made to find out the attitude of teachers towards teaching. ATAI Scale was used to measure the attitude of teachers towards teaching. The results show that men and women teachers did not differ in their attitude towards teaching. Location of the school, age, and level of teaching did not have any influence upon the teachers' attitude towards teaching.
2.4 Teaching Effectiveness

Jensen, Alfred C. (1951) employed the technique of critical incidents to determine the behaviour patterns of good and poor teachers. He collected reports from qualified persons – supervisors, teacher educators, student teachers, public school teachers and principals, and formulated a set of critical behaviour that appeared to be associated with effective and ineffective teachers. It was indicated, for instance, that effective teachers were alert, cheerful, fair and impartial. They tended to exhibit their own mistakes. They were able to stimulate pupils by their teaching techniques. They were helpful and had no disciplinary problems. They were usually sympathetic, democratic and courteous. They were also generous in praise and blame.

Ryans, David G. (1960) based his findings on the responses of teachers to a teacher’s characteristics schedule. High teachers were found to be intelligent and social with interest in music, painting, creative literacy affairs. They were generous, emotionally stable and cheerful. On the other hand low teachers were restricted and critical in their appraisals of other persons. They were less intelligent, emotionally less-stable and represented older age-group.

Barr, A.S. (1961) in his work gives a summary of 83 studies related to ‘Teacher Effectiveness and its correlates’. This work summarizes studies and investigations undertaken and completed
between 1940 and 1960 - a golden age for studies on teacher effectiveness. Naturally this work has been a mine of information and source of inspiration to investigators interested in this theme of educational research.

Barr found that good teachers as compared with poor teachers were more vigorous, more enthusiastic and happier, less attractive, more emotionally stable, more pleasant, sympathetic and democratic, possessed a better speaking voice and displayed a keener sense of humour.

Kulanthavelu, K. and Rao, T.R.S. (1968) analysed the qualities of a good teacher. A checklist was developed for data collection. The sample comprised 1227 boys and 1435 girls from 6th to 11th standards of 11 schools of different types.

The main findings revealed that a good teacher as viewed by the students was one who:

(i) teaches well
(ii) inspires good qualities
(iii) re-teaches a lesson when not understood
(iv) treats the students alike
(v) reprimands students for their follies and
(vi) tries to reform students of problematic type.
**H.N. Debnath (1971)** studies the determinants of teaching efficiency. A questionnaire and an evaluation sheet for observations of the lesson were developed in order to study the effectiveness of the lesson. Two hundred and twenty-six headmasters selected by stratified random sampling and staff members of twenty-two training colleges of West Bengal served as the sample of the survey. Following were the findings: The important correlates of teaching efficiency, as found in the study, were knowledge of the subject matter, sincerity in teaching, mastery of the method of teaching, academic qualifications, mode of exposition, sympathetic attitude towards students, discipline, student’s participation, proper use of instructional aids in teaching and the art of questioning.

**Chhaya (1974)** investigated certain psychological characteristics of effective teachers and compared them with those of ineffective teachers. The teachers were categorized effective or ineffective based on the High School (U.P. Board, Allahabad) examination results for three years, 1968-70, Principals’ ratings and students’ ratings. The two groups- 80 effective and 100 ineffective teachers were compared in personality adjustment, attitude towards teaching, interest in teaching, emotion stability, extraversion-introversions and authoritarian. The major findings were: effective teachers had significantly better personality
adjustment and more favourable attitude towards teaching than ineffective teachers', effective teachers were significantly more emotionally stable than ineffective teachers were more authoritarian than effective teachers.

**M.L. Sharma's (1975) study** is one of the pioneer works in the field of organizational climate conducted in India. He translated Halpin's test (OCDQ) into Hindi and standardized it over a large sample in the state of Rajasthan. In addition, some new dimensions, namely Psychological Hindrance, Alienation, Controls and Humanized Thrust manifested by the leader was composed of ‘Thrust” and, Consideration’ of the OCDQ. The results of this study were in consonance with the findings of Halpin and Croft. The only note-worthy difference at the climate level was that according to Halpin and Croft the controlled climate was more open as compared to the familiar climate, whereas the findings of the study conducted by Sharma revealed that the ‘familiar’ climate in comparatively open than the controlled climate.

**Kamala Arora (1976)** studied characteristic differences between effective and ineffective teachers. The major findings were: Effective teachers were mostly satisfied with their job, whereas ineffective teachers are dissatisfied or indifferent; effective teachers derive satisfaction in job, in company of students and teaching in general whereas ineffective teachers do so mainly from the financial angle; effective teachers have

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significantly more favourable attitude than ineffective teachers towards teaching profession, teaching personnel, friendly relations between teachers and pupils, democratic discipline and mild reformatory punishment, modern teaching techniques, judicious homework and adequate teaching aids; effective teachers feel that enhancement of teacher's prestige depends on teacher's own competence and behaviour and feel teacher education necessary and beneficial.

**Maheshwari (1976)** explored the classroom verbal interaction pattern of effective and ineffective teachers.

A sample of 200 teachers consisting of 100 effective (50 males and 50 females) and 100 ineffective (50 males and 50 females) were selected. The effective and ineffective teachers were identified on the basis of pooled criterion of the Minnesota Teacher Attitude Inventory Scores, academic qualifications, ratings of the Principals, students ratings and students results, Flanders Interaction Analysis Technique was employed for encoding and decoding the classroom verbal behaviour. All subjects taught their lesson by question answer method. The classroom observation were encoded by the two raters. The interrater reliability was obtained to be 0.84. The data were analysed by using t-test.

The main finding of the study were as follows:
(i) Effective teachers used the categories of “accept feeling, praise, uses student ideas, questions student response and initiation” whereas ineffective teachers employed “Lecture, direction and authority” categories in the classroom behaviour.

(ii) The effective teachers involved more indirect influence, student initiation, teacher response ratio and pupil steady state ratio, whereas ineffective teachers involved more direct teacher talk, silence or confusion, steady state ratio and non-stimulating situation in class-room behaviour.

(iii) In the effective teacher’s teaching, student response and initiations were followed by teachers’ praise and accepting feelings whereas ineffective teachers’ teaching student response and initiation were followed by direction and authority.

(iv) The effective teachers involved more creative teaching models.

Grewal (1976) studied the intellectual and personality correlates of teacher effectiveness and found that the measure of intelligence and personality traits clustered in specific constellations with some measures of teacher effectiveness; the predictors correlate significantly with the criterion measures of teacher effectiveness and the main predictors of teacher effectiveness were home, health, social, emotional and total adjustment, dominance, verbal and non-verbal intelligence.
Gupta (1976) attempted to predict teacher effectiveness. Teacher effectiveness was measured by a teachers’ rating scale, a pupils’ rating scale, a teacher attitude inventory and a teaching aptitude test. The teacher's personality was measured by Cattell 16 PFQ (Hindi Version). The major findings were (i) the High effective teachers differed significantly from the general population with respect to A+, B+, C+, F+, Q3+, L-, C-, Q1-, (ii) the low effective teachers differed significantly from the general population with respect to B-, Q3-, (iii) in comparison to average effective teachers ‘High’ effective teachers were more intelligent (B+), emotionally stable (C+), assertive (E+), conscientious (G+), adventurous (H+), tender minded (I+), and had high self concept control (Q3+) and they were also less suspicious (L-), less experimenting and radical (Q1-) and less self-sufficient(Q2-) and less tense and frustrated (Q4-).

Some of the major findings of T.R.S. Rao's (1977) study were that the classroom climate in classes handled by women teachers was significantly better than the climate in classes handled by men teachers. There were no differences in the climate of classes in urban and rural areas. The classroom climate indices correlated positively and significantly with school achievement of pupils. The sample consisted of 200 educationists including head teachers and faculty teachers from training colleges and other interested.
Sharma (1979) made a study into the development of teacher competencies of the B.Ed., student teachers in the training colleges of Rajasthan.

Practicals should include thirty lessons, well supervised, and cover model and evaluation lessons, craft work for an hour a day, study of a problem child, five assignments, participation in sports and N.S.A. programme, participation in the hostel administration and administration of the basic training institution and attendance at a camp related to community service for a period of ten days. In order to equip the institution with reading materials on basic education, the States should invite reputed authors to produce reference books for this purpose. Making admissions selective, giving scholarships to only those who deserve them and are honest and capable of profiting from them and the trainee should be retained in the teaching profession for a period of five years from the time of training should check wastage and stagnation. The evaluation of the teacher-trainees of basic training institutions should be done in such a way that it evaluates the various aspects of their training such as theoretical knowledge, behaviour within the institution and in the society and all other matters of importance. External and internal evaluation should be done keeping in view the requirement of the particular aspect of the curriculum. Teacher trainees should be given training in improving their administrative efficiency.
Workshops, seminars, symposiums, etc, should be organised in order to reorient teacher-trainees to the emerging trends.

Chandra and Singh (1980) studied the emotive aspects of work perceived by effective and ineffective teachers and found the values of social service, intellectual challenge and independence appeared to effective teachers and the emotive factors for ineffective teachers was economic return.

Mutha (1980) studied, "An Attitudinal and Personality study of Effective Teachers".

The study attempted to identify the factors attitudinal, motivational and personality-which differentiated effective teachers from ineffective ones. The sample comprised 300 secondary school teachers-180 male and 120 female randomly drawn from the secondary schools of Jodhapur. Teacher effectiveness scale was developed and standardized to form criterion groups. The criterion groups consisted of seventy-five effective ones. Job satisfaction questionnaire for secondary level teachers was also developed and standardized to study the attitude of teachers towards job and job-related conditions. Besides this, personal factors like sex, age, professional training, income level, nature of residence, marital status, size of family and nature of schooling, were studied. Personalities variables like intelligence, anxiety teaching aptitude, marital adjustment, extroversion neuroticism, job satisfaction,
values, ascendance-submission and self-concept, were also studied. The tools employed were Raven's Progressive Matrices, Sinha's Self-Analysis Form, Eysenck-Maudsley Personality Inventory, Srivastava's Teaching Aptitude Test, Bharnagar's Value Scale, Singh's Marital Adjustment Inventory, Sharma's Self-Concept Inventory, and Allport's Ascendance-Submission Scale. Percentage, chi-square, t-test, factor analysis and multiple correlation were employed to analyse the data.

Y.K. Gupta and M. Swaroop (1981) in their study concluded that—

(1) The school educational climate differed from open to closed from one type of school to another.

(2) The personality factors of effective teachers differed significantly from one type of school—organizational climate to another.

(3) Only five factors—B, E, Q1, F, Q4 were highly positive and were related to teaching effectiveness while six factors J, Q3, O, M, N and Q2 had high negative correlation.

(4) Factors B, H, O, Q4 were very important factors for teaching effectiveness.

A review of the studies cited above lead us to the following conclusion.

All research work has generally been concentrated on discovering rather than creating climate as the Organizational Climate, being multi-dimensional in nature, was a characteristic of an organization built upon
factors beyond any investigator's control. Thus some investigators had preferred to envision the eventual possibility of selecting the organizational climates, for the maximum benefit. Hence, the present study aimed at identifying climate, classifying them systematically, and evaluating their impact on the teachers.

**Hary Dhand (1990)** in his book “Techniques of Teaching” has given the idea to help both experienced and new teachers in developing and expanding the range of teaching techniques. The book is designed to set forth the most useful techniques for to-days instructional needs. Most of the techniques given in the book have been applied, used, presented in the author's won classroom during the past 20 years.

**Rao and Reddy (1992)** in their book “Learning and Teaching” observe the systematic elimination of certain factors to the product of a particular theoretical stance. Learning and teaching is designed to provide teachers and teacher trainees with a comprehensive and, up to date the group of the theoretical foundations of teaching and learning. This book provides methods and techniques and procedures for the particular teaching and learning.

**Wesley, Donald, C. (1998)** in the study of high school teacher outlines 11 nontraditional expectations for new teachers. Teachers should empathize with students; create partnerships with school community members; account to others; embrace adversity; take the
Yeung, et al., (1998) conducted a study on Student Teachers’ Personal Construction of Teacher Efficacy. This study employed the repertory grid technique to investigate how a sample of 27 student teachers in Hong Kong developed a personal sense of teaching efficacy. The analysis indicated that third year students’ perceptions were more homogeneous than were those of first year students. The results also indicated that teaching efficacy was viewed in terms of the dimension of concern for instructional participation and learning needs of students, communication and relationships with students, academic knowledge and teaching skills, lesson preparation, management of class discipline, teaching success, teaching commitment and a sense of self confidence.

Kanstoroom, et al., (1999) edited a report on ‘Better Teachers, Better Schools’. The selections in this collection present common sense approaches to improving the quality of teachers. These approaches involve easing the regulations that control entry, devolving personal decisions to individual schools and then holding these schools accountable for producing results as gauged by their students’ academic achievements.
Padryron, et al., (1999) examined how well elementary with subject learners implemented five standards of effective teaching, classroom observations and student surveys indicated that in classrooms where the standards were moderately used, students perceived more cohesion, higher classrooms where the standards were rarely or never used.

Witcher, et al., (2000) studied the characteristics of effective teachers in view of pre-service teachers. This study determined pre-service teachers' perceptions about the characteristics of effective teachers and investigated factors (e.g. gender, ethnicity, age, year of study, area of specialization and parental status) that may have influenced their responses. This study identifies Behaviour Management – Teacher Knowledge.

King Bruce, M; New Mann; Fred, M. (2000) found that teachers have the most direct, sustained contact with students and considerable control over the teaching/learning climate, improving teachers’ knowledge, skills, and dispositions is critical to enhancing student achievement.

Partington, et al., (2000) conducted study on the classroom of an elementary school teacher of Aboriginal students in Western Australia demonstrates the way in which teacher intentions are hindered by the sociopolitical context of the school. Findings from observations of
classroom events and interviews with the teacher, students, and other key participants indicated that the teacher was unable to translate good intentions into satisfactory outcomes for Aboriginal principal constructed an environment that reflected the dominant culture and did not welcome Indigenous students and parents; the teacher was also deputy principal, and was identified with the administration by the parents, resulting in parent alienation; the school did not have the infrastructure to support teachers’ efforts to provide appropriate schooling for Indigenous students; and conflict among students that arose from outside factors inhibited the teacher's efforts to provide quality schooling for the Aboriginal students.

Cruickshank (2001) concluded that good teaching have included ideal, analytic, effective, dutiful, competent, expert, reflective, satisfying, diversity-responsive and respected. If good teaching could be observed and measured, the results would not indicate a one-size-fits-all model, but rather demonstrate that good teaching is linked to multiple, desirable outcomes.

2.5 Academic Achievement

Perks (1968) found that teacher’ coursework credits in science were not significantly related to student learning but coursework in science education was significantly related to students’ achievement on tasks requiring problem solving and applications of science knowledge.
Teachers with greater training in science teaching were more likely to use laboratory techniques and discussions and to emphasize conceptual applications of ideas, while those with less education training placed more emphasis on memorization.

Carroll (1975) stated that, it may also be that the measure of subject matter knowledge makes a difference in the findings. Measures of course taking in a subject area have more frequently been found to be related to teacher performance than have scores on tests of subject matter knowledge. This might be because tests necessarily capture a narrower slice of any domain. Furthermore, in the United States, most teacher tests have used multiple-choice measures that are not very useful for assessing teachers’ ability to analyze and apply knowledge. More authentic measures may capture more of the influence of subject matter knowledge on student learning. For example, a test of French language teachers’ speaking skill was found to have significant correlation to students’ achievement in speaking and listening.

Byrne (1983) summarized the results of thirty studies relating teachers’ subject matter knowledge to student achievement. The teacher knowledge measures were either a subject knowledge test (standardized or researcher-constructed) or number of college courses taken within the subject area. The results of these studies were mixed, with 17 showing a positive relationship and 14 showing no relationship. However, many of
the “no relationship” studies, Byrne noted, had so little variability in the teacher knowledge measure that insignificant findings were almost inevitable.

As Byrne (1983) suggested it is surely plausible to suggest that insofar as a teacher's knowledge provides the basis for his or her effectiveness, the most relevant knowledge will be that which concerns the particular topic being taught and the relevant pedagogical strategies for teaching it to the particular types of pupils to whom it will be taught. If the teacher is to teach fractions, then it is knowledge of fractions and perhaps of closely associated topics, which is of major importance. Similarly, knowledge of teaching strategies relevant to teaching fractions will be important.

Another program-based study by Denton and Lacina (1984) found positive relationships between the extent of teachers’ professional education coursework and their teaching performance, including their students’ achievement.

It may be that positive effects of subject matter knowledge are augmented or offset by knowledge of how to teach the subject to various kinds of students. That is, the degree of pedagogical skill may interact with subject matter knowledge to bolster or reduce teacher performance.
Denton and Peters (1988) And other studies of the effects of teacher experience on student learning have found a relationship between teachers' effectiveness and their years of experience, but not always a significant one or an entirely linear one. While many studies have established that inexperienced teachers (those with less than three years of experience) are typically less effective than more senior teachers, the benefits of experience appear to level off after about five years, especially in non-collegial work settings. A possible cause of this curvilinear trend in experience effects is that older teachers do not always continue to grow and learn and may grow tired in their jobs. Furthermore, the benefits of experience may interact with educational opportunities. Veteran teachers in settings that emphasize continual learning and collaboration continue to improve their performance. Similarly, very well prepared beginning teachers can be highly effective. For example, some recent studies of 5-year teacher education programs—programs that include a bachelor's degree in the discipline and master's in education as well as a yearlong student teaching placement—have found graduates to be more confident than graduates of 4-year programs and as effective as more senior teachers.

Armour Thomas et. al., (1989) found that when student characteristics are held constant the relationship of teachers' qualification to student achievement is even more pronounced. A study of high and low-achieving schools with demographically similar student
population in New York City found that differences in teacher qualification (educational degrees, certification status and experience) accounted for approximately 90% of the total variation in average school level student achievement in reading and mathematics at all grade levels tested.

**Cherian, V.I. (1990)** in his study aims at examining the relationship between the frequency of parental punishment experienced by children and their academic achievement.

The objective of this study is to find out the effect of parental punishment on students' academic achievement.

A random sample of 369 boys and 652 girls in the age-range of 13 to 17 years with a mean age of 15.6, selected from 14,765 boys and 26,109 girls who represented the total Standard VII population of urban and rural Trankei in 1984 was taken. Instruments used to collect data included a questionnaire, and the marks obtained by the pupils at the Standard VII examination. Analysis of variance was used to study the relationship between parental punishment and students' academic performance.

There was a significant relationship between the frequency of punishment experienced by pupils and their academic achievement.
Chhaganlal, N.M. (1992) in his study compares the teachers’ children and non-teachers’ children in four selected variables.

The objectives of this study are: (i) To study the value, adjustment, attitude towards the teaching profession and academic achievement of teachers’ children in comparison with non-teachers’ children, (ii) to compare primary teachers’ children, secondary teachers’ children and college teachers’ children on the basis of the dependent variables, (iii) to construct a value scale in Gujarati language for the students of Grades VIII to X, and (iv) to construct a Likert type attitude scale in Gujarati language for the students of Grades VIII to X to study the attitude towards the teaching profession.

Stratified, purposive sampling technique was followed in the study. In the sampling process first of all three districts of Saurashtra region were selected. Then four taluks were selected randomly from the three districts. It was decided to select high schools situated at districts and talukas. Only those schools were selected from which it was possible to get greater number of children of teachers teaching at different levels. Thus twenty-four schools were selected. From these schools 591 teachers’ children (266 boys and 325 girls) were selected. Correspondingly same number of non-teachers’ children were taken investigator. Cattell’s 16 Personality Factors Questionnaire, and
students’ achievement scores. Mean, SD, biserial correlation and ‘t’ tests were used for data analysis.

Major findings of the study revealed that: (1) Job security, pay, awareness and academic freedom were positively related to job satisfaction. (2) Teaching experience was not related to job satisfaction. (3) Attitudes towards interpersonal relationship were related to job satisfaction. (4) Outgoingness, intelligence, emotional stability and sobriety were related to job satisfaction. (5) Principal’s leadership influenced job satisfaction of teachers. (6) Job satisfaction did not have any significant impact on the achievement of pupils.

**NCES (1994)** the study on The National Assessment of Educational Progress documented how specific kinds of teacher learning opportunities correlate with their students’ reading achievement. On average, in the 1992 and 1994 assessments, 4th grade students of teachers who were fully certified, who had master's degrees, and who had professional coursework in literature-based instruction did better than other students on reading assessments (**NCES, 1994; NCES, n.d**). While these relationships were modest, the relationships between specific teaching practices and student achievement were often quiet pronounced, and these practices were in turn related to teacher learning opportunities. NAEP analyses found that teachers who had more professional training were more likely to use teaching practices that are
associated with higher reading achievement on the NAEP tests—use of trade books and literature, integration of reading and writing, and frequent visits to the library — and were less likely to engage in extensive of use of reading kits, basal readers, workbooks, and multiple choice tests for assessing reading, practices that the NAEP analyses found to be associated with lower levels of student achievement. Interestingly, students of teachers who had more training in phonics instruction did noticeably less well than other students in both years. Often, this kind of training, narrowly cast, is focussed heavily on the use of basal readers and workbooks rather than an integrated approach that teaches decoding skills in the context of other important reading skills and language development strategies.

Council for School Performance (1997) found that students achieve at higher levels and are less likely to drop out when they are taught by teachers with certification in their teaching field, by those with master's degrees, and by those enrolled in graduate studies (Council School Performance, 1997) like the NAEP analyses described above, these are simple correlational analyses that do not take into account other school resources or student characteristics like poverty or language background that may affect student performance.

Darling-Hammond (1997a) Suggests that better qualified teachers may make a difference for student learning at the classroom, school, and
district levels, there has been little inquiry into the effects on achievement that may be associated with large-scale policies and institutional practices that affect the overall level of teachers’ knowledge and skills in a state or region. This paper reports on one such study, which combines state level case studies and quantitative analyses of state level achievement data to examine whether and how state policies may influence teachers’ capabilities a student learning.

**Darling and Hammond (1997b)** analysis triangulates data from surveys of state policies, case study analyses of state policymaking, and quantitative examination of the distribution of state achievement scores and resources, taking student characteristics into account. Some findings are particularly noteworthy. First, while student demographic characteristics are strongly related to student outcomes at the state level, they are less influential in predicting achievement levels than variables assessing the quality of the teaching force. Second, when aggregated at the state level, teacher quality variables appear to be more strongly related to student achievement than class sizes, overall spending levels, teacher salaries (at least when unadjusted for cost of living differentials), or such factors as the statewide proportion of staff who are teachers.

Among variables assessing teacher “quality,” the percentage of teachers with full certification and a major in the field is a more powerful predictor of student achievement than teachers’ education levels (e.g.
master's degrees). This finding concurs with those of other studies cited earlier. It is not surprising that masters degrees would be relatively weaker measures of teacher knowledge, given the wide range of content they can include, ranging from specialist degrees in reading or special education that are directly related to teaching to fields like administration and others that have little to do with teaching. Other measures of certification status are also strong correlates of student achievement. Finally, certain policy strategies associated with standard setting at the state and local level—NCATE-accreditation of teacher education institutions, district hiring standards, and, to a lesser extent, state professional standards boards—appear to be related to teacher qualifications in the field.

While the triangulation of data from several sources lends some confidence to these findings, they should be viewed with caution. Like all studies that draw inferences from broad state trends and correlational data, there are many variables in play at any given time and many possible explanations for any phenomenon observed. While this article presents a range of competing explanations for student achievement trends (student background, curriculum and testing policies, school funding and equalization, school and class sizes), it could not fully test all of these explanations. This remains for other researchers to pursue. In addition, other data and other methodologies could shed further light on these questions. Adding information about parent education levels
might make a difference in the measurement of student background; adding data about school and district size (from the Common Core of Data) and curriculum and testing approaches (from the NAEP background surveys) might shed greater light on school factors that matter, and adjusting salary and spending data for cost of living differentials might allow a better evaluation of fiscal influences.

By including estimates of the proportions of staff who are under qualified (and who tend to cluster in less advantaged schools and districts), this study's estimates tapped some of the local variability in resources made available to children. However, because state data on average class sizes and other school resources ignore wide variations in teaching and learning conditions that may be very important at the district, school, and classroom levels, these estimates cannot fully capture the effect of such variables. Averages class sizes, for example, vary relatively little across states but vary substantially within states and districts. Thus, effects of this variable are much more likely to be perceived with more disaggregated data. By merging district, school, and teacher files, the SASS data can allow for the use of Hierarchical Linear Modeling techniques, which would be a useful tool for further exploring relationships between teaching and schooling variables at the Schoolm district, and state levels.
Nonetheless, the findings of this study in conjunction with a number of other studies in recent years, suggest that states interested in improving student achievement may be well-advised to attend, at least in part, to the preparation and qualifications of the teachers they hire and retain in the profession. It stands to reason that student learning should be enhanced by the efforts of teachers who are more knowledgeable in their field and are skillful at teaching it to others. Substantial evidence from prior reform efforts indicates that changes in course taking, curriculum content, testing or textbooks make little difference if teachers do not know how to use these tools well and how to diagnose their students' learning needs.

Linda Darling Hammond (1998) to examine further the relative contributions of teaching policies and student characteristics to student achievement, this analysis uses data on public school teacher qualifications and other school inputs available from the 1993-94 Schools and Staffing and data on student achievement and student characteristics from the 1990, 1992, 1994 and 1996 assessments in reading and mathematics administered by the National Assessment of Educational Progress. These data are the basis for regression analyses of school resource variables on student achievement scores to examine whether teacher quality indicators, as well as other school inputs, are related to student achievement at the state level, after controlling for such student characteristics as poverty and language background.
The Database The 1993-94 SASS database includes linked surveys of 65,000 teachers (52,000 public and 13,000 private); 13,000 school principals (9,500 public 3,500 private); and 5,600 school districts. SASS is designed to provide reliable estimates of the characteristics of schools and educators at the national and state levels. It also includes information from individual teachers, school principals, and districts about salaries and compensation policies, induction policies, school climate and context variables (e.g. time to work with other teachers, teacher involvement in decision-making), professional development support, teachers' views of teaching, and their plans to remain in the profession. These analyses use the following data derived from the public school teachers' questionnaire: data on teachers' qualifications (teachers' degrees, majors, certification status), teaching assignments, and average class size. Also included in the analysis are data from the public school district questionnaire on district hiring policies (whether districts require, as a condition of hiring full certification, graduation from an approved teacher education program, or a college major or minor in the field to be taught) and salary schedules (minimum and maximum salaries) as reported by district officials. Salary schedule data are more appropriate for gauging attractions to teaching than average salary data, which do not control for differential levels of experience and education across states. All of the SASS data were aggregated to the state level.
Teacher quality variable constructed from the SASS data include the proportion of “well-qualified teachers”, defined as the proportion holding state certification and the equivalent of a major (either an undergraduate major or masters degree) in the field taught. For elementary teacher, the equivalent of a major is an elementary education degree for generalists who teach multiple subjects to the same group of students or a degree in the field taught for specialists (e.g. reading, mathematics or mathematics education, special education). The proportion of teachers who are “fully certified” includes teachers with standard or regular certification and new teachers on probationary certificates who have completed all requirements for a license except for the completion of probationary period (usually 2 or 3 years of beginning teaching). The proportion of teachers who are “less than fully certified” includes teachers with no certificate and those with provisional, temporary, or emergency certification.

The Findings: All analyses include public schools and teachers only. Although the sample includes all states participating in state NAEP and thus is not a representative sample from which one would draw population inferences, I report p-values as an aid to readers who wish to use them to interpret the relative sizes of relationships and the probabilities of a Type I error. Before constructing the multivariate analyses, initial bivariate correlations of school resource variables and student demographic variables with state average student test scores
were conducted to examine the relationships among variables and to select variables for inclusion in the multivariate equations. These analyses confirmed several findings reported elsewhere:

- Student characteristics such as poverty, no-English language status, and minority status are negatively correlated with student outcomes, and usually significantly so. These student characteristics are also significantly and negatively correlated with the qualifications of teachers; that is the less socially advantaged the students, the less likely teachers are to hold full certification and a degree in their field and the more likely they are to have entered teaching without certification.

- Student characteristics are generally not significantly correlated with state per-pupil spending or with teachers' salary schedules, with the exception that salary schedules are higher in states with larger percentages of minority and LEP (limited English proficient) students. Salary levels show an insignificant, negative relationship with levels of student poverty.

- Teacher quality characteristics such as certification status and degree in the field to be taught are very significantly and positively correlated with student outcomes. Characteristics such as education level (percentage of teachers with master's degrees) show positive but less strong relationships with education outcomes.

- Per pupil spending (measured as current expenditures) shows a significant positive relationship with student
outcomes in 4th grade reading in both years, but no relationship with student outcomes in mathematics. This may be because the spending measure incorporates resources spent not only on teacher salaries and professional development but also on class sizes and other resources that may especially support students in the early grades as they are learning to read. Although salaries and spending are strongly related to one another (p<.01), teacher salary levels, unadjusted for cost of living differences, are not correlated with student outcomes when aggregated to the state level.

- Other school resources such as pupil-teacher ratios, class sizes, and the proportion of all school staff who are teachers, show very weak and rarely significant relationships to student achievement when they are aggregated to the state level.

Partial correlations confirm a strong significant relationship of teacher quality variables to student achievement even after controlling for student poverty and for student language background (LEP status) in (see Table 2 and Figure 4). The most consistent highly significant predictor of student achievement in reading and mathematics in each year tested is the proportion of well-qualified teachers in a state: those with full certification and a major in the field they teach (r between 61 and 80, p<001). The strongest, consistently negative predictors of student achievement, also significant in almost all cases, are the
proportions of new teachers who are uncertified (r between -40 and -63, p<05) and the proportions of teachers who hold less than a minor in the field they teach (r between -33 and -56, p<05). General spending and salary variables, along with class sizes, are not significantly related to achievement once student characteristics are taken into account. It should be noted, however, that this analysis did not take into account cost-of-living differentials that may affect both salaries and spending levels, controlling for such differentials could produce a different set of results with respect to these variables.

A more recent Texas study Fuller (2001) found that students in districts with greater proportions of licensed teachers were significantly more likely to pass the Texas state achievement tests, after controlling for student socioeconomic status, school wealth and teacher experience. Teacher licensing was especially influential on the test performance of elementary students. In a recent school level analysis of mathematics test performance in California high schools, Fetler (2000) found a strong negative relationship between average student scores and the percentage of teachers on emergency certificates, as well as smaller positive relationship between student scores and teacher experience levels, after controlling for student poverty rates.
These findings about the influences and relative contributions of teacher training and experience levels are reinforced by those of a recent review of 60 production function studies which found that teacher ratios, are associated with increases in student achievement across schools and districts. In their estimate of the achievement gains associated with expenditure increments on various resources, spending on teacher education was found to be the most productive investment for schools, outstripping the effect of teacher experience and reduced pupil/teacher ratios.