CHAPTER II

REVIEW OF RELATED LITERATURE

2.0. INTRODUCTION

The survey of related literature is an integral part of any research study and time spent in such an endeavour results in careful planning and meticulous execution of the research.

The intensive study and critical analysis of related papers in research journals, unpublished theses and dissertations pertaining to a particular problem make the investigator familiar with the summary of the previous research conducted and written by recognized experts and demarcate how much work has been done in the field and how much remains to be done. Thus, it could work as a parameter to indicate the quantum of work done in the field and provide a background for the development of the present study. The researcher could highlight how the present investigation arises from the contradictions and inadequacies of earlier investigations.

In a nutshell, review of literature enables the researcher to perceive the gap, avoid the duplication of work, scrutinize the methodology already used, co-ordinate the study with others, get the right direction, view the problem from as many angles as possible and prepare the framework.

The available literature of research presented in this chapter are classified and reviewed under the following heads. They are:

1. Studies related to Total Quality Management (TQM) and
2. Studies related to Educational Technology (ET).
Studies done related to Total Quality Management and Educational Technology both in India and abroad are included in the part of the thesis.

2.1. REVIEWS RELATED TO TOTAL QUALITY MANAGEMENT

Gilmer (1966) specified organisational climate as "those characteristics that distinguish the organization from other organisations and that influence the behaviour of people in the organisations." The notion of climate has become a component of the school effectiveness and reform movement in education.

Rogers, et al., (1971) pointed out the Total Quality Management (TQM) is a new philosophy and innovative strategy for quality improvement will go through the five stages: (i) installation, (ii) trial, (iii) adoption, (iv) evaluation and (v) internalization.

Elmore (1978) derived four models of organizational change processes from a review of policy research and other literature on educational programs. Change strategies based on a systems management perspective reflect the following assumptions: (i) Organizations operate rationally and are goal directed, (ii) they are hierarchically structured; (iii) submits can co-operate to maximize overall performance, and (iv) some form of management by objectives enhances goal attainment. This change processes are enhanced by goal setting, monitoring and accountability.

Beeby (1979) suggests that 'quality' may be viewed as 'qualitative change' which can be defined as a simple linear expansion or diminution of current practice, more or less, of what already exists; more buildings, more students and teachers, fewer examinations of the present type and standards.

Brookover, et al., (1979) reported that principals of successful schools actively participate in setting instructional goals and determining the performance standard for the students.
Rutter, et al., (1979) propound effective principals recognize the unique quality of teachers and help them to achieve their goals. They instill the sense of pride among the teachers, students and parents.

Blumber, et al., (1980) pointed out that effective principals are seen as leaders and as they have more power than their colleagues, they are also effective in maintaining support of parents and of the local community.

Clark (1980) contended effective principals possess efficient skills in the field of instructional matters and develop evaluation procedures to assess the teachers and students performance.

The empirical studies of Mukhopadhyay (1981) indicate that resistance to innovation occurs due to attributes of the individuals in the organization itself. Conservation attitude, sense of insecurity and fear of failure, low self-esteem, closed mindedness, inability to sense needs, unwillingness to work, lack of motivation, inadequate exposure to mass media, inadequate contact with change agents and resource agencies are some of the personality characteristics are non-conductive to adoption of innovation.

Sharma (1982) found that the leadership behaviour of the headmaster has direct impact on the school and on its functioning which makes for a good climate.

Bagga (1983) has been conducted a study of the implementation of innovations in Delhi and Haryana schools. Some of the findings of the study were: (i) the extend of implementation of innovations in schools of both Delhi and Haryana varied from 'some' to 'considerable' showing thereby that it was satisfactory and yet it was not 'complete' and 'full' and (ii) academic effectiveness, adaptability, communicability, independence, simplicity, divisibility, relative advantage, and prestige had been perceived as the most important characteristic of an innovation for its successful implementation.
Purkey, et al., (1983) distinguished between 'organization/structure variables' and 'process variables' In the former they included eight variables: (i) emphasis on autonomous management at the school level, (ii) assertive instructional at the school level, (iii) assertive instructional leadership, (iv) low turnover of staff, (v) shared goals, (vi) emphasis on staff development across the school, (vii) concern for academic success, (viii) effective use of time, and central office support. Despite a back of empirical evidence, they appended ninth variable-supportive parents. The process variables identified are: (i) collegial relationships and collaborative planning, (ii) a feeling of community, (iii) clearly defined goals and high expectations, and (iv) 'order and discipline' with little noise, distraction and risk.

Silver, et al., (1984) reported an evaluation study of an intensive one-month-residential experience for principals. The major conclusion reached by the researches was that in-service programs can have an effect on participants and their schools, although they expressed doubt that programs typically have such an effect.

According to Bass (1985) "transformational leaders influence followers by arousing strong emotions and identification with the leader, but they may also transform followers by serving as a coach, teacher and mentor".


Panda (1985) found that the work load of private school teachers was more than that of government school teachers due to large size classes and job insecurity. Poor working conditions and heavy work load lead to stress, anxiety, and frustration in teachers.

Deming (1986) has recommended 14 principles for the successful and effective management of quality in an organization. They are:(i) design constancy of purpose for
improvement of the product and service, (ii) select new philosophy, (iii) cease
dependence on mass inspection to achieve quality, (iv) end the awarding of business on
the basis of price, (v) revise constantly and forever the system of production and service
to improve quality, (vi) institute leadership, (vii) initiate training on the job, (viii) drive
out fear so that every one may work effectively for the company, (ix) remove the barriers
between departments, (x) eliminate slogans, exhortations and target, asking for new levels
of productivity without providing the workforce with the methods to do the job better;
(xi) eliminate work standards that prescribe numerical quotas, (xii) remove the barriers
that rob people of their rights to pride of workmanship, (xiii) institute a vigorous program
of education and self-improvement and (xiv) put every one in the company to work to
accomplish the transformation.

Hanushek (1986) propounded criteria to determine the internal effectiveness of
the school. It is ratio between non-monetary inputs and non-monetary outputs in school.
In other words, effectiveness of a school can be determined by measuring output in
relation to the amount of input.

Juran (1986) offered three basic processes of quality management. They are: (i)
quality planning, (ii) quality improvement and (iii) quality control.

Deal (1987) suggests that schools resemble tribes insofar as they evolve values,
heroes and heroines rituals, ceremonies, stories, and an informal network of cultural
players (priests and priestesses, story tellers, gossips, and spice) that create meaning and
commitment. Schools that encourage shared symbols and symbolic activity are able to
build organic bridges across well-known, and often competing, subcultures of teachers,
students, parents and administrators.

Chaffe, et al., (1988) identified nine areas to provide a broad context within
which to consider application of TQM. These are: (i) find internal contradictions, (ii)
develop a comparative awareness, (iii) clarify the identification of the institution, (iv) communicate, (v) act on multiple, changing forms, (vi) treat every problem as if it has multiple solutions, (vii) treat every solution as a fleeting solution, (viii) look for consequences in unlikely places and (ix) be aware of any solution that hurts people or undermines strong values.

Jehan (1988) reported that (i) there were marked differences the infrastructure facilities in the schools under different managements in Andhra Pradesh and (ii) private schools were in a much better condition followed by Zilla Parishad (ZP) schools and government schools took the third position.

Kluge (1988) reported that organizational commitment is associated with organizational adaptability.

Mohanty (1988) studied the pattern and problems of administration and supervision of primary schools in Orissa. He found that supervision is to be separated from administration, particularly at the grass-roots level, so as to enable inspectors to freely look to the academic growth of leaders.

Singh (1988) found organizational climate is significantly related to teachers' attitude. An open climate leads to more positive attitude and a closed climate to less positive attitude.

Windham (1988) measured effectiveness of a school in terms of input process and output.

Gonsalves (1989) attempted to critically analyse the job satisfaction of the primary teachers. He found that the percentage of teachers who were satisfied with their job was less than 50% with respect to all types of teachers.

Romzek (1989) suggested that commitment affords the employee a chance to develop a sense of belongingness and to fulfill the human need for meaningful work.
Organizational commitment has been used to predict employee's absenteeism, performance, turnover and other work related behavior.

Saraph, et al., (1989) listed the critical factors of total quality control. The list of factors includes the role of top management, the role of the quality department, training, product/service design, supplier quality management, process management, quality data reporting and employee relations.

Vasantha's (1989) study focuses on modern management techniques in school administration among the schools of Tamilnadu. Her study revealed that there was no awareness of and encouragement for the application of modern management techniques in school administration in all the schools studied.

Weindling (1989) identifies eight factors that seem to be related to effective schools. The effective or high attaining schools tend to be characterized by the following: (i) academic emphasis which refers to such aspects as high expectations by teachers, a belief that all students can learn and a belief that teachers teach; regular setting and marking of home work; and visible rewards for academic excellence and growth, (ii) classroom management in terms of high proportion of lesson time spent on the subject matter of the lesson (as distinct from setting up equipment, dealing with disciplinary matters, etc.), (iii) keeping good order, (iv) school management, (v) clear goals and continual monitoring of students' progress, (vi) staff development programme, (vii) support from district authorities and (viii) parental involvement and support.

Yukl (1989) advocates that transformational leadership can be viewed both as 'micro level influence process between individuals, and as a macro level process of mobilizing power to change social systems and reform institutions'.

Chakraborti (1990) reported that the teachers in open and congenial climate schools enjoyed more job satisfaction and had higher morale that those in closed climate schools.

Dhyani (1990) studied working conditions of teachers in terms of school buildings and physical facilities. He found that a large number of schools did not have basis facilities like drinking water, sanitary, electricity and play ground. Negligible percent of schools had adequate facilities of almirah, boxes, libraries and map-stands.

Fernandez (1990) studied the psychological aspects of human relations in educational administration of heads of schools. The study revealed that the pattern of distribution of grades of human relations in terms of the relative degree and sharing of responsibilities was not normal; it was much skewed, i.e. there was a heavier concentration in the high – and the moderate – sharing groups as compared to the low-sharing one.

Mandliya, et al., (1990) studied the organised academic programmes and school supervision by the educational administrative officers and found that much needs to be done to improve the educational condition.

Overbaugh (1990) showed relationship between frustration and service conditions and significantly higher job stress among private and semi-government school teachers as compared to those in government schools.

Sahoo (1990) suggests that the authoritarian and bureaucratic styles of the headmasters were negatively correlated with school effectiveness. On the other hand nurturant and participative styles positively correlated with this variable, though the correlations were not significant. He observes that the participative styles of leadership is favored by the assistant teachers.
Subudhi (1990) found that management training to principals enhances their capacity and changes their attitude to bring about desirable changes in their respective institutions. It increases the productivity of the institution.

Choudhary, et al., (1991) studied the school supervision performed by the Range and Education Officers. The study revealed that regarding the aspects like the teacher-headmaster relationship, the role of teachers in the development of the school, the teachers-parents association, discipline, etc. The Education Officers expected minute supervision whereas the range officers did not find time to supervise these activities.

Decosmo, et al., (1991) explained that the intensifying adaptation of TQM philosophy in education was due to resource constraints and increasing pressure.

Govinda, et al., (1991) analyzed the quality of primary education in with specific reference to the varying socio-economic developmental contexts in which the primary education institutions are functioning. They revealed that the level of infrastructure facilities provided in the schools played an important role in improving the teaching-learning environment and consequently, learner achievement levels and overall school quality.

Pradhan (1991) attempted to investigate the effect of the school organisational climate on the creativity, adjustment and academic achievement of secondary school students in Orissa. He found that the school organisational climate was found to significantly affect the students' scores of creativity and their academic achievement.

Sherr, et al., (1991) contended TQM as an alternative to many of the management practices in education. TQM is a style of management that has worked for several decades overseas and is receiving growing attention in the United States. It professes a systematic approach to operation, not random approach.
Bonser (1992) states that the move towards TQM in higher education is due to the escalating number of students, the lack of consistent leadership style, the increasing accountability to the public and changing attitude towards universities. These pressures demand peak quality performance from universities in all areas of endeavour.

Gomathinayagam (1992) found that the perception by teachers of the panel inspection is only related to the encouragement of professional efficiency of the teachers.

Jayajothi (1992) found that the principal is responsible for the organisational climate and the teacher morale in Central schools.

Singh (1992) found that a variety of factors including the leadership style of the head determine the job satisfaction of staff.

Solanki (1992) attempted to study the relationship between the educational management and the organizational climate of the secondary schools of Saurashtra region. He found that the educational management of a school depends upon the resources of the school system. It was independent of sex and organizational management but mostly depended upon the human, educational and physical dimensions of the resources.

Taj (1992) found that the attitude towards the profession, job satisfaction and personal-interpersonal social adequacy were found to be significant predictors of the administrative behaviour of secondary school heads.

Cole (1995) experimented with application of Total Quality Management in faculty selection. He concluded that application of TQM resulted in improved processes in optimizing job definition and improvement of recruitment methodologies creating better alignment between faculty needs and expectations.
Davies, et al., (1995) reported that Total Quality Management project seems to offer of valuable model for school improvement and the development of a learning institution.

According to Stensaasen (1995) the Deming theory is promising in its applications to education at all levels. It can be applied to most spheres of society.

According to Divoky, et al., (1996) the basics of process management include processing customer requirements, applying measurements to the process and product characteristics, and pursuing on-going design improvements.

Dowlatshahi (1996) pointed out that once a common-cause variation is established in the teaching and learning process, an attempt should be made to correct it by the use of the principles and practices of Total Quality Management.

According Idrus (1996), Fox valley Technical College, which has eight years of experience in implementation of TQM, is probably the best example to take in terms of the benefits accrued.

Saxena, et al., (1996) studied the school effectiveness and learner's achievement at primary stage covering eight states, viz. Assam, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharastra, Orissa and TamilNadu under DPEP. The State interventions in the form of OB scheme, Mid-day meals programme, free textbooks, and scholarship for regular attendance are found to be having positive impact in one or more states.

Hansen, et al., (1996) in an experiment, applied Total Quality Management (they called it Total Quality Improvement) in class room. They applied the principles of customer focus (students), team process and continuous improvement. The researchers concluded that the TQI approach changed the role of the teacher.

Singh (1996) reported that physical facilities, teacher stay period, academic support to teachers and the role of head teacher, private management, independent
primary schools and the academic pressure helped in reducing the gender achievement gap in turn improving the level of achievement.

Askling (1997) discusses the impact of external quality monitoring on interval strategic management and quality enhancement. She concludes that external evaluation is only one of several factors influencing institutional quality and internal monitoring.

Frazier (1997) suggested identification of internal and external customers and survey the customers for valid requirements and satisfaction. In the context of Total Quality Management, the focus is essentially on the customer or the beneficiary and hence it is important to list down external customers as well as internal customers of an educational institution.

Navarathnam (1997) offered a six-stage quality journey plan: (i) awareness and self assessment, (ii) training and team building, (iii) quality planning, (iv) implementation process, (v) comprehensive evaluation and (vi) continuous improvement.

Owlia, et al., (1997) through their studies at various institutions reported the following benefits due to implementation of TQM philosophy in educational institutions: (i) enhancement in the moral of the students and staff, (ii) improvement in staff performance, (iii) improvement in quality of teaching, (iv) increased customer satisfaction, (v) saving in time and reduction in costs, (vi) enhancement in team working culture and (vii) empowerment of people at all levels.

Kulsun (1998) analyses the effect of organisational climate of schools on job satisfaction of secondary school teachers. Results reveal significant differences in the level of job satisfaction of teachers working in the open climate type and familiar climate type schools. Teachers working in paternal climate and closed type schools did not differ in their level of job satisfaction.
Paul (1998) conducted a study on the relationship between the principles of TQM and school climate, school culture and teacher empowerment. The result established a very high correlation among TQM principles and school climate.

Pradhan (1998) discusses various strategies to reduce work stress and burnout among employees in organizations. The source of burnout is role characteristics, job characteristics, inter-personal relationships, organizational structure and climate and human resource management system. He delineates strategies in each of these areas to deal with work stress and burnout. These include role analysis, job redesign, job enrichment, taking time off, limiting job spillover, supportive behaviour, decentralization, participative decision-making and climate surveys.

Rodgers (1998) conducted a study on teacher perceptions of TQM practices in elementary schools. The study aimed at studying the extent of TQM practices in Maricopa Country Public Schools. The study found that one of the 56 public school districts was implementing TQM practices. There was a significant difference between teachers' perceptions in a total quality school verses teachers in a non-total quality school in all nine surveyed areas. TQM teachers exhibited high morale and job satisfaction.

Horsburgh (1999) suggests that there are more important factors impacting on innovation in learning than external quality monitoring. She concludes that, overall, the greatest impact on student learning was the curriculum, factors that influence the curriculum and the teachers. The most direct impact on student learning was from teacher practices how they help students learn and the assessment practices they employed.

Dahiya (2000) found that the following issues can be identified as far as provision of primary education in Delhi is concerned: (i) inadequate / absence of access to a comparable quality of primary education and (ii) over crowding in the existing
government schools due to lack of buildings, furniture, equipment, teaching learning materials and teachers.

Fourie, et al., (2000) recommended the creation of learning opportunities for academics in relation to teaching. Specifically, they suggest the use of dialogue techniques in order to encourage academics to improve their practices by talking to their colleagues about teaching. They also point to the importance of self-evaluation initiatives, which can serve as the basis of quality assurance programmes.

As noted by Newton (2000) the values and expectations of academics should be taken into account in any quality improvement initiative in that the success of quality monitoring systems rests upon the effort and commitment of academic staff.

Srivastava (2000) conducted a study on teachers' perception to their involvement in the decision – making process of the headmasters and found that nearly half of the teachers opined that the headmasters discuss the problems prevailing in the school; more or less same proportions of teachers perceived that their advices were considered in decision – making process and more than two-thirds of the teachers were satisfied with the decisions only on same occasions and the similar proportions feel that the headmaster is successful only on occasions in solving the problems.

Khera, et al., (2001) did a study of self perceived and subordinate perceived leadership behaviour of heads of secondary schools. Their major findings were (i) the leadership behaviour of heads of schools as perceived by them is normally distributed; (ii) the leadership behaviour of heads of schools as perceived by their teachers is normally distributed and (iii) the leadership behaviour of heads as perceived by their teachers does not differ significantly from that perceived by themselves.

Mizikaci (2001) researched the effectiveness of TQM implementations at Baskent University. Conducted as a programme evaluation case study, she examined the
effectiveness of TQM implementations in programmes in terms of a systems approach in three levels; inputs, transforming process and outputs. Data were gathered in a multi-source manner including all defined customers of the university, namely shareholders, students, teachers, managers, coordinators, parents, graduates and employers. Findings showed that TQM is implemented in a desired level only in documentation systems and procedures but not in a desired level in educational impact, academic improvement and customer satisfaction.

Wolf (2001) found, for the Netherlands, that there is strong correlation between the attitude of a school's management about the inspector's work during their assessments and investigations on the one side and the final evaluation outcome by the inspectorate of the quality of schools on the other side.

Joy, et al., (2002) conducted a study on computer assisted instruction: Attitudes of teachers and correlates. The study revealed that there was significant difference between the experimental and control group in their attitude towards computer education. As a result of training in computer assisted instruction, the attitude of the experimental group became more favourable towards computer education.

Karunakaran (2002) conducted a study on total quality culture in higher secondary schools in Dharmapuri district. The study found that the total quality culture in higher secondary schools in Dharmapuri district, is 79.9% of the maximum possible score.

Natarajan (2002) formulated a study on school organisational climate and job satisfaction of teachers. He concluded that organisational climate differs from school to school. Open climate is helpful for very high level of job satisfaction among the post graduate teachers of higher secondary schools. Except the sex of teachers, the other variables viz. marital status, location of school, type of school, type of management in
which they work and the subject they teach do not cause difference in their job satisfaction.

Vadivambal, et al., (2002) studied relationship between the adequacy of teachers and performance of the students in the primary schools. Their study revealed that simply the number of teachers would not help in producing good results.

Sharma, et al., (2003) stated that quality circles are feasible in education along with stressing the need of appropriate implementation, management support and sustained, deliberate efforts for extensive influences of quality circles in education.

Selvam, et al., (2003) conducted a study on impact of parental literacy on academic achievement of students. The objective of their study was to find out the academic achievement of First Generation Learners (FGL) and Non First Generation Learners (NFGL). The sample of the study comprised of 214 student of primary schools (78 FGLs and 136 NFGLs) from four different primary schools in Thiruvidaimaruthur block in Thanjavur district of Tamil Nadu. To know about the parents education an inquiry form was used. To know the academic achievement the enrolment and stagnation details of the students, the schools records for the period between 1997 – 1998 and 2001-2002 (i.e standards one to fourth) were referred. This study concludes that parental literacy has positive impact on the academic achievement of children.

Gnanadevan (2004) conducted a study on resolution of conflicts by heads of schools and found that heads of schools use different methods such as avoiding, competing, silencing, compromising, transferring, collaborating, confrontation, smoothing, arbitration and negotiation for resolving conflicts though the frequency of using them varies. The negotiation is the most frequently used method and silencing is the least frequently used method for resolving conflicts by heads of schools.
Rao (2004) concluded a study on the relation between physical facilities, teachers' facility and the academic attainment in municipal secondary schools and found that the academic achievement of students depends largely on the availability of physical, human and other infrastructure facilities in the schools.

Selvam, et al., (2004) conducted a study on attitude of elementary school headmasters towards inclination operations to Total Quality Management for securing excellence. The objectives of their study were to find the significant between a) male and female, b) rural and urban, c) graduate and non-graduate and d) below 10 years of experience and above 10 years of experience of headmasters with regard to Total Quality Management (TQM) at elementary school level. The sample of the study comprised of 76 elementary school headmasters from Kumbakonam and Thiruvidaimaruthur blocks of Thanjavur district in Tamil Nadu, randomly selected. The data was collected through a questionnaire developed by the investigator and analysed using ‘t’ test. This study confirms that the male, rural, non-graduate and below ten years of experienced headmasters are having lower mean score than the female, urban, graduate and above ten years of experienced headmaster with regard to attitude towards TQM.

Selvam, et al., (2004) conducted a study on Total Quality Management in elementary education programme. The objectives of their study were to find out the difference between the variables such as structure of institutions (middle schools, higher secondary schools) and system of governance (government managed schools, government aided private management schools) of elementary education programme in terms of Total Quality Management. The sample of the study comprised of 195 elementary school students in Thiruvidaimaruthur block of Thanjavur district, Tamil Nadu. The purposive sampling technique has been followed the study. The data was collected through a checklist developed by the investigator and analysed using Mean. This study clears that
TQM differs, according to the structure and governance of schools. The TQM practice in higher secondary schools is higher than that of middle schools. It may be due to highly qualified teachers and their awareness of TQM in higher secondary schools. The TQM in elementary education programme of aided schools is higher than that of government schools. This may be due to adequate financial status, good infrastructure, and positive attitude towards TQM and resource mobilization in aided schools.

Selvam, et al., (2004) conducted a study on possibilities of quality teaching in elementary schools. The objective of their study was to know the Block Resource Teachers (BRTs) view on possibilities of quality teaching in elementary schools. The sample of the study comprised of 67 BRTs were randomly selected form 15 locks of Thanjavur district of Tamil Nadu. The data was collected through a questionnaire developed by the investigator. The responses of BRTs were grouped under tow major headings: ‘Yes’ (if the BRTs think that there are possibilities for quality teaching) and ‘no’ (if the BRTs have no hope on qualitly teaching). The data was analysed using percentage. The study revealed that the mean score of possibilities of quality teaching in elementary schools was 54%.

Srikanthan, et al., (2004) summarised the core elements of the generic model addressing quality management in education as follows: (i) a clear focus on transformation of the learners, (ii) enhancing them through adding value to their capability and ultimately empowering them, (iii) a synergistic collaboration at the learning interface which transcends not only the traditional power relationships but breaks the barrier among institutions and reaches out into developing new external partnerships with the community and, (iv) a strategic focus on assessment of the student as a means of embedding and improving learning.
Selvam, et al., (2005) studied the infrastructural background for facilitating quality primary schools. The objective of their study was to find out the infrastructural background for facilitating a quality environment to promote teaching learning process. The sample of the study consisted of 105 primary school teachers from 4 blocks of Thanjavur district in Tamil Nadu, randomly selected. The data was collected through a questionnaire developed by the investigator. All item of the questionnaire were of ‘yes’ or ‘no’ type. The data was analysed using percentage. It is clear from the findings and discussions of the study that infrastructure has been taken into serious consideration for quality in education.

Selvam, et al., (2005) established the fact that adoption level of quality assurance in the instructional practice of primary schools is low to moderate. The objective of their study was to know whether the teachers practice quality assurance to raise the standard of instruction in primary education. The sample of the study comprised of 33 Block Resource Teachers (BRTs) were randomly selected from 15 blocks of Thanjavur district in Tamil Nadu. The data was collected through a questionnaire developed by the investigator and analysed using percentage. It has been observed that majority of the primary teachers did not practice quality assurance in the teaching process.
Swatantradevi, et al., (2005) studied quality planning for total quality in primary education system. The objective of their study was to know whether the teachers practice quality planning for achieving the total quality in primary education system. The sample of the study comprised of 85 Block Resource Teachers (BRTs) of Thanjavur district of Tamil Nadu, randomly selected. The data was collected through a questionnaire developed by the investigator and analysed using percentage. The study clearly reveals the fact that the preparation of quality planning in the primary education system is low. It is a fact that no change in quality can come in without proper planning, experiments, taking efforts, undergoing hardships, having a positive attitude, dedication and professionalism in true term.

Szanto (2005) reported that the self-evaluation guidebooks or manuals written by the agencies are usually very demanding as to the amount of data and information required from institutions to be evaluated. This means that higher education institutions complain that the self evaluation process imposes a significant burden on them, with much extra work and resources being needed to prepare the self-evaluation documents.

Gnanadevan (2006) studied the attitude of teachers towards educational innovations. His research study revealed that the attitude of teachers towards educational innovations is highly favourable.

In a study by Selvam (2006) it was observed that TQM conditions are occurred and put efforts a collectively to enhance the excellence of the elementary education system in Erode district.

Selvam, et al., (2006) conducted a study on incumbency of quality control for quality classroom process in primary education. The objective of their study was to know whether the primary schools adopt quality control mechanism as classroom process. The sample of the study comprised of 85 Block Resource Teachers (BRTs) were randomly
selected form 15 blocks of Thanjavur district of Tamil Nadu. The data was collected through a questionnaire developed by the investigator. All items of the questionnaire were of ‘yes’ or ‘no’ type. The data was analysed using percentage. The study revealed that primary teachers apply quality control at optimum level for some of the aspects of classroom practice.

Selvam, et al., 2006, studied permanence of Total Quality Management in Primary Education Programme. The objective of their study was to puzzle out the perpetuity of Total Quality Management (TQM) in primary education programme in Erode district of Tamil Nadu. The sample of the study comprised of 86 channel partners (18 supervisors of Block Resource Centres, 33 coordinators of cluster Resource centres and 17 teachers) of primary education programme from Erode district, randomly selected. The data was collected through a questionnaire developed by the investigator and analysed using Mean opinion score. The findings of the study were – 1) The permanence of TQM in primary education programme has been highly impressive scoring the overall mean value of 3.80 at five point scale. 2) The study revealed that TQM has been practiced by the primary schools.

2.2. REVIEWS RELATED TO EDUCATIONAL TECHNOLOGY

Singh (1980) conducted a study on technology in education-growth and development in the secondary schools of Bihar with special reference to Monghyr district and its impact on the teaching-learning process. The study revealed that a majority of teachers had opined that Educational Technology had changed the classroom teaching-learning process to a great extent and had also made an attitudinal change among the pupils.

Singh, et al., (1984) revealed that 75 percent of the teachers favoured the ETV programmes being syllabus based and most of the teachers felt that environmental studies
for classes I and II and general science for classes III, IV and V should be given top priority.

Wad (1984) conducted a study on the scope of communication media such as radio, television in education at high school level in Maharashtra State. The study revealed that the need of communication media in the teaching learning process had been felt by the teachers and parents also, but yet the radio and TV programmes had not attained a ‘must value’ in the learning process.

Good, et al., (1988) argue that small-group instruction is not a panacea but an attractive instructional format that, when properly implemented (e.g., careful organization and appropriate curriculum tasks) could enable teachers to achieve certain goals: meaningful practice on subject matter of appropriate difficulty and interest, learning pro social skills, taking different approaches to problem solving, verbalizing thoughts about mathematics, and growing in social intelligence.

Guskey (1988) concluded that mastery learning approach has allowed many teachers to dramatically increase the number of students in their classrooms who learn, and learn very well what they as teachers have set out to teach.

Morgan (1988) investigated if student's perceptions of classroom life and their social integration differed between classrooms where co-operative learning was structured at least 30% of time versus classrooms where it was structured less than 30% of the time. The study revealed that students in classrooms where co-operative learning strategies were used at least 30% of the time had a more positive view of classroom life. And their achievement scores reflected more growth than students in low use class rooms.

Nagan (1988) found that Mathematics could be taught more effectively through the use of computers and computer assisted programmes, and that the contribution of
electronic devices such as computers and calculators in increasing understanding in Mathematics is indisputable.

Forman (1989) investigated how two girl students of grade VII with different initial instances toward a complex task in geometry can help each other incorporate new experimentation and reasoning strategy into their repertoire. He found that peers could serve as teachers and pupils for each other. He concluded that children could take an active role in discovering and applying mathematical concepts.

Singh’s (1989) makes an effort to find out the effectiveness of two training strategies in developing teaching competence. One group of student teachers was exposed to Observe-Demonstrate Practice (ODP) teaching strategy, i.e., observe good teaching in the real classroom situation, then see a demonstration on video film on a particular teaching skill, followed by practice. In another teaching strategy the sequence was Demonstration followed by Practice followed by Observation (DPO). The results of the study indicated that both the teaching strategies were significantly effective in gaining understanding of microteaching and in developing a positive attitude towards teaching.

Slavin (1989) contends that research shows that co-operative learning programmes enhance various affective outcomes, including inter group relations, acceptance of main steamed academically handicapped students by their classmates, self-esteem, liking of class or subject, and acceptance of others.

Stodolsky (1989) found that only at the lower levels of skills-driven subjects (e.g., reading and Mathematics) are teachers likely to follow explicit directions in manuals. In many curricular areas, teachers use the text book as a guide and select from it. Thus current practice in selected subjects does allow for decision making on the part of the classroom teacher. For many teachers, therefore, the textbook can provide and excellent and useful resource, without usurping the position of the teacher.
Bonapare (1990) measured the effects of two forms of classroom organisation, co-operative mastery learning and competitive mastery learning on the mathematical achievement and self-esteem of 240 urban second-grade pupils. It was found that co-operative mastery learning form of classroom organisation was superior to the competitive-mastery learning form of classroom organisation. A significant correlation between mathematical achievement and self-esteem was found.

Chaudhary (1990) conducted a study on teacher's attitude towards School Television (STV) and its relation with job satisfaction. He found that job satisfaction was associated with the authority responsible. For work allocation, intensive case studies revealed that the majority of teachers did not operate STV regularly and the majority of TV sets were out of order. Teachers perceived STV as a good tool for teaching and were fairly satisfied with their job. Teachers teaching classes IV and V showed a more positive attitude towards STV than teachers teaching classes I-IV.

Dutta (1990) conducted an experiment to study the effect of microteaching on general teaching competence and to see how microteaching influences teachers' attitudes. He found that both microteaching and the additive pattern were superior to conventional teaching and both proved more effective in developing positive attitudes towards teaching.

Narayanan (1990) reviewed studies on Social inquiry model in Indian situations and concluded that (i) it gives clear and distinct ideas of concepts and principles; (ii) it enhances understanding of the subject matter through interactions with others, and (iii) it encourages how to work productively with learners of different personalities.

Abrol, et al, (1991) conducted a study on TV viewing among children of Delhi schools. The study was based on a sample of 750 students drawn from 44 primary and secondary government schools. The findings reveal that the majority of the mothers were
restive to their children’s TV viewing, and no significant difference was found in the amount of TV viewing by male and female children. Viewing was independent of IQ of viewers and it was heavy on Saturdays and Sundays.

A Study by Latham (1991) showed that retained effect of students using the colour version of the lesson was higher that those using the achromatic version.

Solachi (1991) conducted a study on availability and utilization of Educational Technology in the higher secondary schools of a district in Tamilnadu. The study revealed that the utilization rate was higher in urban schools as compared to rural schools. Government and aided schools also differed in their utilization rate. The aided schools did a better job. Between boys and girls schools, the boys’ schools utilized Educational Technology more. Science teachers as compared to Humanities teachers utilized more of non-projected and projected visual aids. They also utilized more of community resource technology.

Gor (1992) in a study on developing teaching competency of primary school-teachers found that microteaching strategies produce significant effect on attitude towards teaching profession, and also found microteaching a very effective technique.

A Study by Lai (1992) indicated that hypermedia environment is effective in vocabulary learning.

The study of Ibrahim (1995) examined whether field dependence / field independence and experience in using computers had any relation with attitudes of teachers towards computers. He found significant differences in attitudes towards computers between filed dependent and field independent teachers, less experienced and experienced teachers less experienced and more experienced teachers and experienced and more experienced teachers.
Persico (1995) examined academic and social progress of 13 tutees that participated in a pilot sixth-grade peer-tutoring programme. The research question was: "can a peer tutoring programme meet the academic and social needs of middle school level children?" It was found that students benefited from the peer-tutoring programme. The social interaction with a peer tutor helped to improve the academic performance of the tutees.

Stevens (1995) concluded that students who were taught in class using computers experienced significantly more confidence towards computers, less anxiety towards computers and a more positive attitude towards learning process that did not use computers.

Fuchs, et al., (1997) explored the effectiveness of peer-assisted learning strategies by comparing the reading progress of three learner types-low-achieving students with and without disabilities and average achieving pupils to corresponding controls. The sample of 120 students from 40 classrooms of 12 schools was taken and schools were randomly assigned to Peer Assisted Learning Strategies (PALS) and no-PALS group. Students in PALS classrooms made significantly greater progress than their counterparts in no-PALS classrooms across three reading measures.

A study by Nocente (1997) indicated that students with below grade level reading ability made greater gain, if audio was available.

A study by Radwan (1997) supported that the intelligent CAI makes significant improvement in the learning skills of the students.

Rangarajan, et al., (1998) found that CAI as a modern instructional technology can be exploited for achieving different instructional objectives in Physics as a curricular subject at higher secondary level. CAI packages in Physics are helpful to the practicing
teachers in such a way that even the most difficult content areas can be taught to the pupils more effectively.

Toppin (1998) conducted a study on attitudes of college students toward computers. Descriptive results indicated that the majority of students surveyed have low anxiety, high confidence, high liking and high usefulness attitudes towards computers.

Tsuei (1998) states that Multimedia CAI is source for effective communication and providing new dynamic environment for learners. Also multimedia software has a great potential in facilitating student's creativity.

Singh, et al., (2001) formulated a study on English language proficiency of students in different English language teaching systems. The study was designed to compare two equated samples of students one studying in the traditional system of school education and the other in the innovative system. The innovative system of education refers to the semester system with new techniques of teaching and evaluation like seminars, group discussions, periodical assessments (objective type of tests) and emphasis on co-curricular activities for all round development of students. Students of both the systems were found to exhibit the same level of proficiency only in one skill viz. listening. In all the other skills i.e. speaking, reading and writing the performance of the students in the innovative system was found to be significantly higher.

Katherine (2001) conducted a study on application of Educational Technology in teaching of Mathematics at secondary school level in Bharathidasan University jurisdiction. The study reveals that all the teachers of Bharathidasan University jurisdiction are having positive attitude towards the application of Educational Technological Aids at secondary level.

Natesan (2001) concluded that learning mathematical concepts through video film can increase the rate of learning. A follow-up discussion followed after video instruction
programme can make the learning more concrete and effective and more over it makes the learning more interesting and realistic.

Ponnusamy, et al., (2001) undertook students’ achievement and cooperative learning method in Mathematics at upper primary level. The major findings of this study were: (i) cooperative learning contributes a lot to improve the academic performance of the students in VII and VIII standards in learning Mathematics, (ii) the standard has no effect on the performance of experimental group students and so the effectiveness of cooperative learning can be generalized and (iii) the gender has no effect on the performance of experimental group students and so the effectiveness of cooperative learning can be generalized.

Selvam (2001) did an action research entitled a study on the competence of V standard students in knowing the principle and classification of lever. With regard to source of action research, it could be noted that using TLMs for science teaching becomes highly effective than text books.

Tholappan (2001) identified that there is a significant difference between the experimental group and the control group in their performance in Economics when taught through conventional method and OHP.

The multimedia package was tried out with a set of IV standard students by Vaidyanathan, et al., (2001) and they found out that it was a better method than the conventional method.

Dubey, et al., (2002) conducted a study on effectiveness of instructional material on thinking skill of classification in terms of achievement of students at primary level. This study inferred that the instructional material on thinking skill of classification could positively influence the achievement of students on the criterion test.
Maniar, et al., (2002) studies usage of internet for educational purpose. The study revealed that internet services for educational purposes were utilized sometimes. The respondents used it more for class assignment in comparison to research work and other educational purposes. Significant difference was found in the internet usage for class assignment in relation to the years of exposure.

Chinnappan (2002) did a study on play-way method in remedial teaching of English alphabet. The main aim of the study was to find out the difficult letters (the English alphabet) which posed problem of recognition for children, the reasons and the remedial measures. It was also an attempt to find out the effectiveness of play-way method in the remedial teaching of the English alphabet in standard III. The result indicated that the play-way method is more effective than the conventional method.

Gnanasundararatharasu, et al., (2002) proved that the pupils who learnt Social science through Video Assisted Instruction (VAI) are better than the pupils who learnt through the conventional method and they concluded that VAI is relatively more effective in teaching Social science at primary level.

Ruth, et al., (2002) conducted an experimental study among the students of standard III makes a clear point, i.e. children like to learn by involving and indulging in activities that enrich their learning experiences. The major findings of the study were: (i) the school atmosphere can be made lively and attractive through play-way and activity based teaching and increase in daily attendance and enrolment, (ii) the parents were impressed with such purposeful activities and got interested in sending children to school and (iii) the zeal and interest of the children was well felt through activity-based teaching.

David (2002) studied effectiveness of using photographs along with real specimens on the attainment of the competency in Environmental science. He concluded
that this technique is proved to be more effective than the traditional method in understanding the concept by the pupils in the classroom.

Huneke (2002) conducted a study on student integration and attitudes towards technology use as predictors of institutional commitment. The findings of the study included a number of significant relationships, such as that the variables of academic and social integration had a much greater impact on students institutional commitment than the variables related to students attitudes toward technology use.

Lukow (2002) conducted a study on learning styles as predictors of student attitudes toward the use of technology in recreation courses. The results indicating the frequent use of computers for "one to one" communication (e-mail) and web surfing supported the literature regarding the steady increase in the use of electronic mail and the internet by students in higher education.

Manimekalai, et al., (2002) conducted a study on effectiveness of activity approach to teach geographical concepts from globe model at primary level. This study confirmed that activity approach to teach geographical concept has achieved the required academic outcome of the students of standard V.

Natrajan (2002) has done an investigation into the impact of tape recorder in inculcating value education among the teacher trainees. The result indicated that tape recorder is found to be more effective in inculcating value education among the teacher trainees.

Pandey (2002) reported that CAI was found to be more effective than the traditional method.

Radhamani, et al., (2002) conducted an experimental study on audio tutorial in enhancing the academic achievement of the sixth standard students. The audio tutorial
method was found to be more effective in improving the performance of students in learning Social science than the conventional method.

Shahapur (2002) made an attempt to study the attitude of secondary school students towards Computer Assisted Learning (CAL). The results showed that (i) boys of aided schools have a more favourable attitude towards CAL than boys of government schools, (ii) girls of aided schools differ in attitude towards CAL from girls of government schools, (iii) there is a significant difference between boys and girls of aided schools in respect of their attitude towards CAL and (iv) no significant difference is found between the boys and girls of government schools in respect of their attitude towards CAL.

Varank (2002) found that teachers who received the training scored higher on attitude scales, with more positive attitude towards computer use in the classroom, than those teachers who had received no training. Similarly, instruction scored higher on motivation scales than students who had received similar lessons without computer support.

Akila, et al., (2003) conducted a study on effectiveness of video software in teaching and learning social science among the V standard pupils. Their study reveals that the video softwares in social science for V standards for the four selected units produced by the ET Cell of the DTERT, Chennai is very effective.

Anbuchelvan, et al., (2003) concluded that Activity Based Teaching (ABT) was effective in teaching Science among the students of standard III.

Das (2003) conducted a study on computer-assisted instruction: Attitudes of teachers and correlates. The study revealed that there was significant difference between the experimental and control group in their attitude towards computer education. As a
result of training in Computer Assisted Instruction (CAI), the attitude of the experimental group became more favourable towards computer education.

Easwari (2003) has studied effect of pupil location on the mastery of EVS competencies in standard I. She concluded that there is a significant gain in the mastery of competency in EVS due to the reformed pupil’s location. Thus the location of the pupils gives an impact on mastery of competency.

Jayanthi (2003) found that the use of OHP gave scope to the students to be very active and involved unlike the conventional system.

Kukreti, et al., (2003) concluded that in terms of student’s achievement CAI is more effective than the traditional lecture method.

Paul, et al., (2003) concluded that the secondary grade teachers have low attitude towards CAI.

Ponnusamy, et al., (2003) has investigated the use of instructional media in primary schools. They concluded that most of the primary school teachers were not utilizing bulletin board, transparencies, slides, audiotapes and TV in their schools. But, most of them were utilizing models and newspapers in their class room activities.

Rama (2003) studied effectiveness of play-way technique in teaching of Science at upper primary stage. The findings of the study showed that the difference in the means of both experimental and controlled groups is 12.17 which is significant. This study discovered that play-way technique of teaching Science is superior to formal method.

Santhi, et al., (2003) found that Video Assisted Instruction (VAI) is more effective and creates interests of the children on learning lessons.

The study of Satapathy, et al., (2003) aimed at finding out the effectiveness of activity-based classroom transaction in terms of quality of achievement of the pupils and retention of the competencies learnt. The result of the study showed that activity-based
classroom transaction is very effective in promoting learning and improving achievement and retention of the competencies. It makes learning very durable for pupils, both in small and large-sized classes.

Selvi (2003) conducted a study on effectiveness of Computer Assisted Instruction. This study revealed that the mean score of CAI group is greater than the mean score of TTM (Traditional Teaching Method) group.

Vasanthis, et al., (2003) have developed CAI multimedia software on Electro Chemistry and Banding. They tested its effectiveness for teaching Chemistry for I year B.E students. From the findings, it could be concluded that teaching Chemistry through CAI was found to be more effective than teaching through the traditional method.

Robinson, et al., (2004) pointed out that achievement in science is affected by learning style and study habits. It is seen that kinesthetic / tactile learning as well as group learning facilitate high performance in Science. Thus science teachers in middle schools should plan more group activities to facilitate higher performance in Science.

Doss, et al., (2004) studied learning approaches and academic performance of college students. The major findings in the study were: (i) achievement approach is the predominant one among the college students, (ii) the place of residence and the institutional background of the college had significant influence on learning approaches and (iii) the academic performances of the college students was related to their approaches to learning.

Gupta's (2004) research study revealed that group study method improved the academic performance of not only weak students but also bright ones.

Geetha (2004) did an experiment with scaffolding, reciprocal teaching and shared learning for learning Mathematics for zone of proximal development through the application of Vygotskian principle. The findings of the study showed that the pupils
expressed eagerness to learn through activity-oriented method and they could understand the concepts better with reference to social context.

Begum (2004) has investigated the effect of mediated learning experience on communicative competence of primary teacher trainees. Her major findings were: (i) there is a significant difference in the mean scores of the pre and post-tests of the study as the calculated ‘t’ value is greater than that of the theoretical value, (ii) the mediated learning experiences provided by the mediator is very effective in forming a ‘good start’ among the teacher trainees to enhancing the communicative competences and (iii) the mediated learning experiences created a real interest and enthusiasm among the learners.

Prabahakaran, et al., (2004) conducted a study on effectiveness of assignment strategy in teaching Tamil to slow learners of the V standard students. This study reveals that there is a significant difference between the pre-test and post-test mean scores of the experimental group of slow learners while using the assignment strategy.

Sadananthan, et al., (2004) conducted a study on effectiveness of lecture cum field trip in teaching History. From the study, it is inferred that if History is taught through lecture supplemented with field trips, learning becomes meaningful. Students will get direct experience and make genuine interest in learning.

Sethumadhavan (2004) prepared an instructional package for art of healthy and productive living. His study concludes that instructional package for art of healthy and productive living is effective for the students of standard V.

Annaraja, et al., (2005) found that the power point presentation is effective in teaching Zoology. Further, the use of power point presentation has improved the knowledge, understanding and skill levels of the students. This may be due to the fact that the animation effect of the slides motivated the students in learning. Further the effects of the colour of the slides draw the attention of the learners in learning.
Cox (2005) conducted a study on learning styles and students attitudes toward the use of technology in higher and adult education courses. The results of the ANOVA showed no significant findings, which demonstrates that in the population for this study, no relationship exists between attitude towards the use of technology and learning style.

Kailasavani (2005) used cubes for developing the skills of writing the chemical symbols of elements among the VII standard students through play-way method. She found that the play-way method is more effective than traditional method of teaching.

Paul (2005) developed a power point package for improving the achievement level of III standard children in Environmental Science. He concluded that the attainment of competency on population could be achieved by providing direct experience to the learners through power point.

Sharma et al., (2005) conducted a study on the status of computer education in schools of Bhiwani. The study revealed that all teachers working in schools of Bhiwani have positive attitude towards computer education. They have recognized that with passage of time, everyone will have to acquire computer literacy if they want to cope with the technological complexities of everyday life.

Selvam (2005) developed and tested supporting cards for teaching Environmental science. He observed that these cards played very important role in teaching and learning processes and knowledge of the students and these cards can be used for effective teaching and productive learning.

Selvam, et al., (2005) tried to improve the performance of scholastic achievement of science concept on "Life cycle of Riccia" among VII standard students through "Sema-stubbic Tutoring System". The difference between the pre-test and post-test scores of scholastic achievement of students was statistically significant. It implies that the "Sema-stubbic Tutoring System" was significantly different from that of the traditional teaching
in terms of improving the performance of scholastic achievement among VII standard students.

Muthukrishnan, et al., (2006) reported that learner friendly task-based approach in transformation of reported speech in English is more effective than customised approach.

Parvathi, et al., (2006) studied the impact of activity based teaching in primary mathematics. The study indicates that the activity based teaching techniques improves the interest of students in learning and ensures retention of the knowledge gained.

2.3. CONCLUSION

An extensive review of literature made it possible for presentation of some salient observations under classified headings. All these observations were used in the conceptualization of the problem, selection of variables and formation of the problem, selection of variables and formation of hypotheses for experimental verification. The next chapter deals the research design of the present study.