Chapter - II

REVIEW OF RELATED LITERATURE
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For planning and execution of any research work, review of related literature is an essential pre-requisite. The review of research studies have been presented in the following section.

2.1 Review of research studies related to Teacher Effectiveness.

2.2 Review of research studies related to work/job satisfaction.

2.3 Review of research studies related to media utilization

2.4 Review of research studies related to Information and Communication Technology (ICT)

2.1 REVIEW OF RESEARCH STUDIES RELATED TO TEACHER EFFECTIVENESS

Singh (1993) conducted a study on teachers' effectiveness in relation to their sex, area and adjustment. He found that there was a significant difference between male and female teachers in their adjustment in favour of female teachers. The rural and urban teachers did not differ significantly on their adjustment. The coefficient of correlation between teachers effectiveness scores and adjustment of the rural teachers was not significant. Among the urban teachers, effectiveness scores and adjustment was significant.

Rao (1995) conducted a study of teacher effectiveness in relation to creativity and interpersonal relationship. He found no significant relation between teacher effectiveness and the income of teachers and years of service of the teachers. Significant relations were found between teacher effectiveness, creativity and
interpersonal relationship. Significant differences were found between rural and urban teachers with reference to inter-personal relationship.

Babu and Gnanaguru (1997) conducted a study on teacher effectiveness and involvement in teaching of commerce at higher secondary level in Tamil Nadu. They found that sex and locality of the commerce teachers had no effect upon the teacher effectiveness. The commerce teachers with the research degree were found to be more effective in teaching commerce than their counterparts. The involvement of teachers in teaching commerce and their effectiveness of teaching were found to be correlated significantly.

Anand (1998) developed a motivational package to promote teacher effectiveness at primary level and studied job satisfaction of 880 teachers from 96 primary schools. The main findings of the study were: 40 teachers of convent schools were found higher in job satisfaction scores as compared to the teachers of all other schools. Teachers of Central schools were also found to be satisfied as compared to the teachers of the schools run by the State Government (2) State government school teachers teaching in rural areas scored significantly better in job satisfaction as compared to the teachers working in urban areas (3) Teachers working in privately managed schools were also been found to have better job satisfaction as compared to the teachers of Government High Schools.

Ma and MacMillan (1999) conducted a study on influences of work place conditions on teacher's job satisfaction. Teacher data (N=2,202) from the New Brunswick Elementary School study was used to examine how teacher professional satisfaction is related to background characteristics and work place conditions measured
through teaching competence, administrative control and organizational culture. Results showed that female teachers were more satisfied with their professional role as a teacher than were their male counterparts. Teachers who stayed in the professional layer were less satisfied with their professional role. Work place conditions positively affected teacher satisfaction; administration control was the most important, followed by teaching competence and organizational culture, significant interactional between teacher background characteristics and workplace conditions occurred. The gender gap in professional satisfaction grew with increased teaching competence.

Pandey and Maikhuri (1999) conducted a study on the attitude of effective and ineffective teachers towards teaching profession. They found that there was no significant difference between effective teachers having high or low experiences in terms of their attitudes towards their profession. High experienced effective teachers' attitude was positive towards teaching profession than low experienced ineffective teachers. Age of effective teacher was not a differentiating factor in their attitude towards teaching profession. Young ineffective teachers had more negative attitude towards teaching than ineffective old teachers.

Tilk (2002) conducted an empirical study of correlates of Teacher Effectiveness of Secondary School Teachers and found that (1) Teachers effectiveness is positively affected by the level of motivation to work. Those having higher level of motivation to work, do more effective teaching. (2) Job satisfaction does not affect teachers' effectiveness significantly. Thus, teachers with high job satisfaction are not significantly better than their counterparts with low levels of job satisfaction. (3) There is no significant interactional affect of work motivation on teacher's effectiveness.
Vijayalakshmi & Mythili (2004) conducted a study on impact of some personal and professional variables on Teacher Effectiveness. They reported that the results showed that there was significant difference between the teachers upto 35 years and above 35 years of age married and unmarried teachers with different designations and working in junior and degree colleges with regard to their teacher effectiveness. Regarding their work orientation, significant differences existed between married and unmarried teachers, male and female teachers of different cadres, between junior and degree college staff and government and private college teachers. Positive and moderate relationship was present between teacher effectiveness and their work orientation.

Amandeep and Gurpreet (2005) conducted a study of Teacher Effectiveness in relation to teaching competency. The study showed that female teachers are more effective in their teaching than male teachers. Male and female teachers do not differ significantly as far as their teaching competency is concerned and also stated that variable of teaching competency plays significant role in teacher effectiveness of teachers.

Bansibihari and Surwade (2006) studied “The Effect of Emotional Maturity on Teacher Effectiveness”. The sample consisted of 180 male and 175 female secondary teachers in Navapur and Dhule cities of Maharastra. They found that (1) Female teachers are emotionally more mature and stable than male teachers who are found to be emotionally immature/unstable. (2) The teaching of emotionally mature teachers is more effective than those of emotionally immature teachers, whose teaching is found to be of average grade and (3) There is no sex difference in emotionally mature group with respect to teacher effectiveness.
2.2 REVIEW OF RESEARCH STUDIES RELATED TO WORK/ JOB SATISFACTION

Smith (1955) studied Psychology of Industrial behaviour and found that personal characteristics and personality type and demographic variables were to significantly related to job satisfaction.

Guha (1965) studied the Personality factors and job satisfaction among shoe factory workers. In the study job satisfaction was found to have negative relation with neuroticism and positive relation with extroversion.

Anand (1972) conducted a study on the attitude of teachers towards pupils and their job satisfaction and found that attitude of teachers towards students bears a significant and positive correlation with their job satisfaction.

Dwivedi and Pestonjee (1975) found age to be curvilinear and significantly related with job satisfaction whereas Sinha (1958) did not find any significant relation between age and job satisfaction.

Anand (1977) studied 320 men and 271 women teachers of Delhi, using a job satisfaction scale (prepared by the author) and the Maudsley Personality Inventory. It was found that for 30 percent of the teachers, job satisfaction was determined by their extroversion. Neuraticism was found to be negatively related to it.

Kuhn (1982) examined the relationship between teachers’ personality type and job satisfaction. He found that extroverts seemed to be more satisfied than introverts.

Kaur (1985) in her study found that the newly appointed teachers are more satisfied with the job as compared to experienced teachers.
Khaleque and Rahman (1987) found that job satisfaction among older, married and more educated jute industries workers more satisfied was younger, unmarried and less educated workers.

Ansari and Ansari (1989) reported that job anxiety and job satisfaction are not always inversely related but moderate anxiety leads to high satisfaction.

Singh and Ojha (1989) found then there is a curvilinear relationship between job satisfaction and experience.

Sinha and Prabhat (1993) conducted a study on relationship between ego strength and job satisfaction. They found that ego strength and job satisfaction were significantly related. Male teachers had a high level of correlation than their female counterparts on their relationship of ego-strength and job satisfaction. Male and female teachers did not differ significantly on their ego-strength.

Reddy and Babu (1995) studied job satisfaction of teachers working in Residential and Non-Residential schools and found that teachers working in residential schools were more satisfied than their counterparts belonging to non-residential schools. On the other hand, teachers of non-residential schools were more satisfied with the job as measured by two factors 6 and 8. In three factors, both groups were dissatisfied but the dissatisfaction was more in the case of teachers belonging to non-residential schools. The two groups did not differ with regard to the remaining factors. (2) Considering the sex variables, women teachers exhibited significantly higher level of overall job satisfaction and job satisfaction as measured by two factors 8 and 10. In four factors women teachers were less dissatisfied than men teachers. On the remaining factors there were no significant differences between the two sexes.
Kaur (1996) reported that non-government schools mathematics teachers are more satisfied than government school mathematics teachers and there is positive correlation between the variables, that is teaching competency and job satisfaction.

Bala (1997) concluded that four measures of job satisfaction namely job aspect, personal aspect, interpersonal aspect and overall job satisfaction was positively correlated with eight measures of teachers attitudes towards teaching namely, Attitude towards profession (ATP), Attitudes towards professional growth (APG), Attitude towards self concept (ASC), Attitude towards educational process (AEP), Attitudes towards classroom teaching (ACT), Attitude towards students (AS), and Attitude towards school system (ASS) and total attitude. It shows that there is relationship between satisfaction and attitudes towards teaching.

Brief (1998) suggested two different models of job satisfaction top down and bottom-up. In top-down, job satisfaction is derived from how one interprets one's own environment and in bottom-up experience of positive job condition.

Judge, Locke, Durham and Klunger (1998) found a link between core self evaluation (Overall approval and acceptance of himself or herself) and job satisfaction which was mediated by perception of five intrinsic job characteristics such as identity, variety, feedback, autonomy and significance. This suggests that individual with positive self evaluations assessed their job satisfaction at higher levels were more satisfied with their job than those with less positive self evaluation.

Nataryajan & Dhandapani (2002) studied Organisational Climate and job satisfaction of teachers in schools. They found that open climate was found in more number of private schools and familiar climate was found in Government Schools. They found
significant difference in the job satisfaction between male and female teachers and the female teachers are enjoying more job satisfaction. The married and unmarried teachers do not differ in their job satisfaction and also no significant difference was found among rural and urban teachers in their job satisfaction. It was also found that the teachers working in the open climate are enjoying very high level of job satisfaction.

Bhuyan and Choudhury (2002) studied correlates of job satisfaction among College Teachers and found that (1) There was no association between levels of job satisfaction and sex of teachers working in urban and rural colleges. (2) There was no association between levels of job satisfaction and the localities of the institution. (3) There was no association between levels of job satisfaction and the marital status of the college teachers. (4) There was no association between levels of job satisfaction and the experiences of the college teachers. (5) Teachers were not happy with the facilities (Classroom, library, laboratory, teaching aids etc.) available in the institutions for teaching and learning and the existing syllabus and curriculum. (6) Teachers were happy with the revised pay scale and promotional aspects in service of UGC but not happy with retirement benefits (pension, gratuity, etc.), financial hardship (irregular payment of salary) at the institutional level and the service rule policy. (7) Teachers were not happy with the academic environment of the institutions and felt that it was not conducive for professional growth of the teachers (non-availability of reference books, research journals, periodicals, computer and internet facilities etc.) (8) Teachers had positive attitude towards professional development and strong belief that M.Phil, Ph.D., research work and in-service training like refresher
courses, orientation programme, summer course, etc. were highly necessary for professional growth of teachers. (9) Teachers had strong opinion that only meritorious people should be appointed in the teaching profession through NET or equivalent State Level Selection Board.

**Mieke (2006)** studied Tracking and Teachers satisfaction: Role of study culture and Trust. He found weak relation between tracking and teacher satisfaction. Teachers in technical/ vocational schools tended to be slightly less satisfied with their jobs than were teachers in schools offering general education. Also, that relation could be described to the pupil culture in technical/ vocational schools, which was less study oriented than was the pupil culture in general schools. Ultimately, the relation between study culture and teacher satisfaction appeared to a small extent to have been attributable to the faculty trust in pupils, which was associated with school type and study culture on one hand, and teacher satisfaction on the other hand.

**Bindhu (2007)** conducted a study on relationship between job satisfaction and stress coping skills of primary school teachers and found that there is a difference in the job satisfaction of male and female primary school teachers; b) there is a positive correlation between job satisfaction and stress coping skills. No significant difference was found between the rural and urban areas teachers on their job satisfaction as because the t-value is low than that of table value with both the levels. This shows that both the groups have positive attitude of job-satisfaction towards their profession. As far as job satisfaction is concerned the group of male teachers and the group of female teachers did not show any significant difference.
2.3 REVIEW OF RESEARCH STUDIES RELATED TO MEDIA UTILIZATION

Teachers approaches to media utilization fall along a continuum. At one end are the instructors who feel secure in their familiar lecturing style. Many either do not know of or see no need for technological aids, other than the chalkboard and few maps and charts. A middle group employs one or more media types to supplement their classroom presentation whenever such materials seem capable of producing increased sudden learning or interaction. Such use is often sporadic; more in isolation than an integral aspect of a planned, learning process; and frequently hindered by problems of selection, inaccessibility, improper use and logistical difficulties.

At the other extreme of this continuum are the teachers who feel that through careful application of the principles of “system design” they can make education more productive. This group includes both teachers who see themselves in the designer’s role and those who seek to use externally designed instructional system. Such systems have been provided by various curriculum development agencies, but are usually print based with audiovisual materials being relegated to an optimal or supplementary role. Moreover, in spite of considerable investment, the level of adoption has been disappointing and the quality of implementation is generally regarded as unsatisfactory. Desirable or not, it is teachers in the middle of the continuum who are responsible for most of the reported media usage.

During the past decade, several studies have reported that a majority of school teachers seldom use media in their teaching. Multiple reasons are consistently given for this task of use. In addition to inaccessibility of hardware, suitable software and
adequate projection conditions, fear, listlessness, and even burn out have been sited as explanations for this less than enthusiastic acceptance and uses of promising new techniques.

**Goodman (1942)** compared the effectiveness of 4 visual media – the sound motion picture, the silent motion pictures, the sound film strip, and the silent film strips – in teaching 4 units of safety education in the sixth grade. The silent motion picture proved superior to the other 3 media. The film strips were next and were about equal with each other. The sound film was last. For all media the learning gains were high on both immediate and delayed recall.

The period 1945-65 produced more intensive media research stimulated by a growing concern with education as a response to the forces of technological changes impinging on American Society (Saettler, 1968).

As Moldstad (1947) has pointed out, they are doubtless useful in assisting educators to 'prove' to themselves that newly designed instructional programmes actually work and provide valuable data to assist the educator in making media decisions.

The landmark United States status study entitled, the state of Audiovisual Technology, 1961-1966 (Godfrey 1967) was the first extensive, systematic attempt to examine what a sample of school district made of the use of audio-visual technology over a critical six years of period of ferment in instructional methodology. This monograph reported a relatively high incidence of use for all elementary grade levels but indicated that use data varied with subject specially in the secondary schools. Properties of users of any audio-visual material ranged from a high of 95 percent for Science to a low of 45 percent for mathematics. The traditional materials, films, film strips and records were by far the most popular media types preferred by elementary teachers. Generally,
these same media preferences held true for secondary teachers; however television programs and the overhead transparency projector revealed records for third place in areas of science and social studies instruction.

A useful review of the background of instructional media research is given by Saettler (1968). He observed that in the period of 1918-1945 media development in U.S.A. was influenced most critically by research undertaken into the use of radio and film for instructional purposes. The literature from 1940-1947 includes at least 27 status surveys of the audio-visual field. These surveys range from the number and types of projectors available in a given country, state or the nation, to the expenditure of funds for audio-visual materials and equipment and the content of film libraries in similar regions. These surveys reveal a wide spread growth in all phases of the audio-visual field. The amount of equipments and materials available have increased sharply. Audio-visual materials are much more widely used in public schools, colleges and universities.

Elementary teachers were reported to be the most prolific in their use of material, using nearly twice as many items overall as secondary level teachers. University teachers, as expected, use least, perhaps reflecting the fewer number of contact hours with students. Elementary teachers are also the most homogeneous group (if measured by the co-efficient of variation of the individual formats). University teachers show the most variation in utilization rates. The most common AV medium at the elementary level is 16mm film followed closely by Filmstrips and Broadcasting television. Secondary teachers use 16mm films far more than any other items, followed to a much lesser degree by films strips and slide. At the university level, 35mm slide sets are the most used.
medium; 16mm films are next and videotapes appear as a third choice (Cruickshank, 1975).

The Media/Research Division of the National Film Board of Canada (Cruickshank, 1975) conducted an investigation during the fiscal year 1974 to 1975 to ascertain the status of educational media utilization at all levels of education in Canadian educational institutions. The survey drew upon 1,600 teachers from throughout all the Canadian provinces.

Probably the most detailed media use studies from 1970s are reported by Dirr and Pedone (1979) and was conducted during 1976-1977, under the auspices of the corporation for Public Boarding and National Centre for Education statistics. To gauge the in school use of television they surveyed carefully drawn samples totaling almost 6,500 superintendent, principal and teachers of elementary and secondary schools. Their mail survey return rates ranged from 50 percent (teachers) to 61 percent (superintendents), but further telephone follow-ups of sub-samples of non-respondents brought the effective final response rate into the range of 85 to 96 percent (Moldstad 1989).

Goodlad's monumental study (Goodlad, 1983s) involved an in-depth study of 1,016 class rooms constituting a representative sample of 38 US elementary junior and senior high schools, Analysis of the amount of time spent on various classroom activities revealed that:

"Teachers appeared to teach within a very limited repertoire of pedagogical alternatives emphasizing teacher talk and monitoring for seatwork. Overall, the clusters of activities accounted for 60%, 59%, and 54% of classroom time at elementary, junior and senior high school levels respectively preparing for and cleaning up after
assignments, listening to teachers explain, or lecture and fulfilling written assignments” (Goodlad, 1983).

Such class time use of data involving limited utilization of instructional technology is indeed both startling and disheartening, and tends to discredit the idea that instruction is moving towards more self instruction and learning activities involving independent study and learner initiated projects.

The two media that are the most recent and complex—computer and video are utilized the least by Fort Worth school teachers, along with slide projection. Overall, 80 percent said they use computer programmes a few times a year or less, or not at all; 79 percent reported that they never or infrequently utilized video tapes, and 90 percent never used 35mm slides, or a few times yearly or less. Other media that were seldom, if never, employed by a majority of the respondents were audio tapes (65 percent), phonograph records (52 percent), models (51 percent), film strips (51 percent) and motion pictures (51 percent). Only overhead transparencies, pictures from books and magazines and games and simulations were used once a month or more by more than half of the school teachers in the survey. Overall, overhead transparencies were the most utilised materials, with pictures from books and magazines, second games and simulations third (Seidman, 1986).

From early times, teachers have relied upon various forms of visual and auditory aids to help them explain. The simple drawing in the sand and demonstrations with actual objects under study which primitive humans early on learned to employ have never been replaced. Teachers have simply expanded to include some of the new aids as and when they have became available. Film, television, and most recently, microcomputers, videodiscs, and satellite communication are the educator’s new watch-words. But it
is probably only teachers who work in relatively wealthy districts and are seriously committed to using audiovisual media that are significantly affected by this huge range of options (Moldstad, 1989).

In India, Parhar (1994) studied the effect of media on student learning. He found that (1) Out of the 20 schools chosen only four schools were found to be using school television programmes fully, while radio-cum cassette players were not used. No teacher was found to be trained in the usage of school television programmes (2) The mean scores in mathematics in four experimental schools were different from the control group but not significantly. The same picture was true in Science too (3) The mean difference in English achievement between the user group or non-user group was not significant.

Kumar (1998) studied the use of Educational Media and found that (1) Majority of the teachers belonged to middle age group followed by young and old categories (2) Most of the teachers had doctorate and had experience of studying under new systems and a considerably large number of teachers had foreign exposure during their academic career, (3) Maximum number of teachers have experience of less than 11 years in teaching and have served more than one organization, (4) it was found that by and large, teachers have considerably higher professional orientation but they lacked training in instructional media, (5) Most of the teachers have high favourable attitude towards instructional media but only a few felt that they had media operating capability and media production capacity. (6) The university has well established media production and utilization system. The communication centre is well-equipped with required equipment facilities and manpower. However while reacting on the problems faced teachers, ranked lack of own media
production facilities as most important. (7) Majority of the teachers are using only chalkboard as a teaching aid. Charts and posters are other media used by about 79 percent of teachers but only in some classes overall the level of media utilization by teachers is very poor. (8) The main three problems ranked by most of the teachers are lack of own media production facilities followed by lack of financial support and availability of media.

**Aggarwal & Singh (2001)** conducted a study on Educational Technology Awareness among university teachers. They attempted to explore the awareness level of university teachers about all three aspect of educational technology-materials, media and methods. A random sample of 56 teachers of MJP Rohikhand University campus was given a self structured tool - “Educational Technology Awareness Scale” for collecting the data. Percentage of teachers for three awareness levels (low, moderate, and high) and total weighted scores were computed for every individual item of educational technology. Findings revealed that amongst University Teachers, awareness about commonly used methods, media and materials was either high or moderate, but very low awareness was found about advanced and recent technologies.

**Ponnusamy and Natesan (2003)** studied Instructional Media and Primary School Teachers and found that (1) 75.47 percent of primary teachers and 66 percent of upper primary teachers never utilized the bulletin board. (2) 92.45 percent of primary teachers and 66 percent of upper primary teachers never utilized transparencies. (3) 84.91 percent of primary teachers and 50 percent of upper primary teachers never utilized slides. (4) 52.83 percent of the primary teachers and 54 percent of the upper primary teachers never utilized audiotapes. (5) 86.79 percent of primary teachers and 68 percent of upper primary teacher never
utilized TV set, (6) 62.26 percent of primary teachers were utilising models and newspapers. (7) Similarly, 54 percent of upper primary teachers were utilising models daily in their classes and 76 percent were utilising newspapers daily in their classes. (8) The study suggested proper training of teachers in the use of media in enriching classroom activities.

Bhusan and Mehra (2004) studied Media utilization and classroom practices for optimum learning outcomes in secondary schools and they found that there is average media utilization by teachers of high achieving schools. Their attitudes towards media and teaching are also average. The other findings of their study are as follows:

- In the low achieving schools, teachers exhibited below average to poor media utilization. Their attitude towards media and teaching are also average.
- In the same school, some teachers use more media than others.
- The older teachers like to stick to the traditional media whereas the younger teachers like to explore new media, especially internet, CAL, CMI, etc.
- Teachers of all schools used textbooks.
- Film, videos, radio are rarely used by the teachers.
- One teacher very frankly admitted in the low achieving and low media utilization school that he used only textbooks and supplementary books for teaching.
- Teachers of high achieving schools exhibited more media utilization than their counterparts of low achieving schools.
Teachers of high achieving schools exhibited better attitudes towards media than their counterparts of low achieving schools.

Teachers of low achieving schools exhibited better attitudes towards teaching than their counterparts of high achieving schools.

On the whole there is average media utilization by teachers of high achieving schools. Their attitude towards media and teaching are also average.

In the low achieving schools, teachers exhibited below average to poor media utilization. Their attitude towards media and teaching are also average.

2.4 REVIEW OF RESEARCH STUDIES RELATED TO INFORMATION AND COMMUNICATION TECHNOLOGY

Rogers and Mahler (1992) surveyed the teachers about their acceptance of technology education. A questionnaire was sent to 31 teachers who were then grouped for data analysis by state, educational level, years of teaching experience, age, school type and school size. The profiles indicated that 24 percent of the teachers had accepted technology education whereas 76 percent had not accepted this educational change. Analysis indicated that school size had a statistically significant impact on teachers acceptance of technology education, with teachers in medium schools most likely to have accepted technology education.

Oliver (1994) conducted the study on factors influencing teachers' uptake of computers. He found that for Western Australian beginning teachers, even where there was good access to hardware and software, 75% did not make use of computers for instructional purposes.
Sen (1997) studied the Management of introduction of Information Technology (IT) in the libraries in India and found that teachers had great liking for it as a subject as well as for using these computers as a medium/aid for instruction. (2) The female teachers had more positive attitude towards computer education in comparison to the male teachers. (3) The central school teachers had more positive attitude towards computer-assisted instruction in comparison to the public school teachers. (4) The length of teaching experience did not have much effect on the attitude of the teachers towards computer education and computer assisted instruction.

Jao (2001) conducted an investigation of pre-service teachers attitudes and confidence levels towards educational technology standards and selected instructional software applications. This study was conducted to investigate pre-service teachers' attitudes and confidence levels towards technology standards and towards selected instructional software applications. Within the field of educational technology, this study provided additional evidence that participants had more positive attitudes after the intervention. The study revealed that:

- Preservice teachers had more positive attitudes towards educational technology.
- Preservice teachers had an increase of confidence level in performing the surveyed skills and then teaching them at the grade levels they planned to teach.
- Preservice teachers had more positive attitudes towards a variety of instructional tools.

Howery (2001) investigated teacher training in technology with its effect on teacher attitude and the use of technology in the classroom. Throughout the 150 hours training, teachers were
provided with the necessary computer skills and knowledge to run applications needed to incorporate technology in the curriculum. The control group did not take part in the technology literacy grant training. Teacher attitudes and use of computers were measured by the computer technology survey. The results suggested that through the training, teachers became more comfortable with the use of technology and their positive attitude towards technology increased. They began to use technology to enhance the learning environment for students.

Normond (1995) and Smith (2002) explored the gender group in Attitude about technology and concluded that the attitude about technology is changing for females because there are more reasons for females to use the technology since the Internet has became popular. Interacting with groups of other females is a part of socialization process for female as they develop their identity. Chat rooms and e-mails have made it easier for girls to do this using technology. For older females (over 30) technology is becoming necessary for work and for their children. The wide use of e-mail, general information about health issues, children, distance education and other issues that appeal to women make it more appealing for them to use technology especially the Internet.

According to Aspinall and Hegarty (2001), Micro-computers have been recognised as of value for people with learning disability (mental retardation) and their use has been a feature of many service settings since the 1980s. Recent technological advances, such as the modern and powerful personal computers with multimedia capability and the Internet, have, however, not yet been widely adopted in day and residential services. The implications of these developments for service planning and management are not fully understood. A survey of microcomputer use for adults with
learning disability within the Home Farm Trust, a UK national organisation for people with learning disability was carried out in the light of a planned organisation wide initiative to introduce modern information and communications technology (ICT) to service users. Results show that there had been a limited provision of computers within the organisation and that staffing and support for the introduction of new ICT were not fully in place. The findings are discussed in the light of research on the organizational requirements for effective ICT use. These requirements were built into the planning of a major initiative to equip the organisation with new ICT for its service users. Future research should lead to simple audit procedures to aid organisations develop effective ICT use.

Richardson (2002) explored the changes in teaching strategies enabled by Internet and Communication technology (ICT). He interviewed eleven school teachers who were using network-based on technologies in their classroom and also conducted a series of informal classroom observation. All interview and observation data were recorded and transcribed. The prevailing themes that emerged from the data illustrated the impact of ICT on the changing role of the teachers, classroom dynamics, teacher prediction of ICT in the school and the concept of the classroom. From the findings it may be inferred that as teachers further integrated ICT into their classroom, they adopted different teaching strategies to counter balance, the attraction of ICT. The teachers interviewed agreed that ICT in the classroom fundamentally influenced the process of learning. As a result they were required to adjust their teaching strategies in terms of the delivery of curriculum content. The teacher also said they had to accommodate for the power shift in the classroom because often students had more knowledge of ICT than their teachers. The finding also revealed that the physical structure and dynamics of
the traditional classroom were changing. ICT brought in a vast amount of external information and allowed for the increased communication and learning with other people from sources outside the direct control of the teacher. Boundaries between subject matter and physical locations, where student could learn were diminishing. As a result, the domain of the classroom where teachers were typically in control was being directly challenged. The teachers also identified the need to focus on teaching new skills in how to read, reply to (write) and analyze information delivered from ICT. Finally the teachers needed time to learn about the technology and to understood how to integrate ICT into the curriculum.

Zavaraki (2003) conducted a study on use of network communications in academic transactions by 238 university teachers and its impact on learning outcomes of postgraduate students.

He found that the faculty's attitude towards Internet Technology are as follows:

- There is a significant difference between user and non-user faculty in their attitude towards network communication. User-faculty teachers had attitude more positive about Internet in higher education as compared to non-user faculty teachers.

- A majority of them believe that the Internet technology use will help achieve quality of learning.

- A majority of them believe that the Internet technology use will help to improve teaching, research and extension activities.
Regina, Regina, Grozman and Ticzon (2004) conducted a survey of 498 teachers to determine the incidence of techno phobia and the attitude of teachers towards online learning and teaching technologies. The study showed that Philippine public school teachers are generally more afraid of computers than their peers working in private schools. One in four teachers in Manila suffers from "techno phobia", Techno phobia was largely manifested in terms of computer anxiety rather than cognitions. That is, resistance is generally on the level of affect or feelings about using computers rather than on one's thoughts about using computer. Age was also a big factor influencing the attitudes of teachers towards computers. Older teachers are more afraid of technology than younger ones. The study found that teachers in general had a positive attitude towards online teaching and learning technologies. Most of the teachers surveyed viewed computer-aided teaching and learning as beneficial, innovative, interactive and efficient. Women teachers were also more open to technology than men. The low adaptation of technology among Filipino teachers is mainly due to lack of skills, a fear of technology, and perceived difficulty in using technology.

Toots and Idnurm (2005) conducted a study on Information and Communication Technology (ICT) in Estonian Schools to assess the direct and indirect involvement of information technology in the learning process in general education school. The data was collected from 98 schools, 366 teachers and 273 pupils from 8th grade in 2000 to when they were in 11th grade in 2003 (sort of a longitudinal study).

The findings of the study were:

- About 90 percent of children had used computers in school, at home or elsewhere. In school computer use of boys and
girls is similar, but outside school boys spend substantially more time on computers than girls.

- One third of teachers use computer outside class a couple of times a week. A third of teachers use ICT also in class.
- Children in towns are better equipped with home computers than pupils in the country in the same region.
- 41 percent of teachers have home computers. There are more pupils with computers than teachers as a rule;
- 93 percent of children had access to internet at school, in the neighbourhood or at home.
- The skills of applying ICT to the teaching process by the teacher were less. Majority of teachers had only elementary computers skills, only a few-good skills.
- Both pupils and teachers had positive attitudes towards ICT applications.
- In professional exchanges between teachers, ICT based networks are rather uncommon.
- Almost half of the pupils are of the opinion that computer technology has not introduced major changes to their lives, that it does not replace traditional communication and recreation patterns, 15 percent of boys and 3 percent of girls thought they watched TV less because of computer use, 11 per cent of boys and 2 per cent of girls suggested they read less books.