CHAPTER II

REVIEW OF RELATED LITERATURE
CHAPTER – II

REVIEW OF RELATED LITERATURE

II.1. Introduction
II.2. Studies Conducted Abroad
II.3. Studies Conducted in India
CHAPTER – II
REVIEW OF RELATED LITERATURE

II.1. Introduction

In the field of education as in other fields too, the research worker needs to acquire up-to-date information about what has been thought and done in the particular jurisdiction from which he/she intends to take up a problem for research. The purpose of the review of related literature, as analysed by Good (1954) is as follows.

1. To show the evidence clearly available which solves the problem adequately without further investigator and thus to avoid the risk of duplicating.

2. To suggest methods of research appropriate to the problem.

3. To locate comparative data useful in the interpretations of the results.

4. The review of related literature gives the researcher an understanding of the research methodology which refers to the way the study is to be conducted. It helps the researcher to know about the tools and instruments which proved to be useful and promising in the previous studies.

5. The final important specific reason for reviewing the related literature is to know about the recommendations of previous researcher listed in their studies of further research.
The investigator finds the review of related literature relevant in various aspects. When the investigator goes through the previous researchers and relevant literature, the investigator becomes familiar with the study and recognize in what jurisdiction researches have not been done. It will enable the investigator either to narrow or to wide his topic and to know the best possible lights on it.

According to Best (1997) the search for related literature is one of the first steps in research process. It is a valuable guide in defining the problem recognizing the significance and suggesting data gathering devices and source of data. A number of writing of recognized authorities of previous researches clearly tell the researcher what is already known and what is still unknown and untested. The following are some of the studies done in this jurisdiction.

II.2. Studies Conducted Abroad

The investigator could collect studies on “Audio Visual Technology” and studies under “Electronic and interactive technology.”

Audiovisual education, as a systematic teaching, was shown a natural inclination to learn and to teach with pictures, specimens and demonstration. Comenius, a German educator was the first man to record a Stated Philosophy of Audio Visual Evaluation. His first book “Orbit Sensualism Picles” published in 1658 was profoundly illustrated with drawings each playing an important role in teaching. Comenius was followed by other great educators, including Russian educator John Locke
and Perto Lomyzi who advocated the use of sensory Aids to supplement words teaching. James (1924), Hechuckey (1924), Brown (1928), Knowllon and Bilion (1929), Wood and Freeman (1929), Consuit (1931), Rulon (1933), Ram Sayer (1938), Goad (1942), Hopan (1946) and Carson (1947) have contributed to research on Educational Technological Aids.

From the point of effectiveness of Television teaching in the classroom situation. Hotm (1959) carried out a study on television and according to his findings, television proved better for teaching the science. Thus the students who watched and learnt from television at home scored high on tests. According to Thurker and Colletta (1964) a study was conducted at Brockport, New York to determine the effectiveness of the programme. The consensus of opinion among the personnel concerned was that Television instruction was effectively used for science instruction in Junior High School.

The twelve studies conducted on Radio Broadcasting in countries other than India were reviewed. These studies were on various aspects like formal education, language education etc. International agencies like UNESCO act have shown interest in the Educational Radio Broadcasting.

Primrose (1965) made a study on the effectiveness of the educational programmes of the Radiophonic Schools of Sulan Tenza on the life of the Columbia of this research for failure development of Radio Sulan Tenza and this effectiveness were (i) Literacy Aids written on the level of the students (ii) A Social scientific study of the people in the
different jurisdictions (iii) Updating the pedagogical techniques for a mass communication process.

The purpose of the study carried out by Cooper and Ovail (1966) was to assess the effectiveness of a series of school Television programmes. A sample of 250 children were given an attitude test before and after they had seen a series of twenty minutes of seven Television programmes. These programme dealt with the history of the United States. The results showed a significant improvement of the score on the test that was administered.

Educational Television programmes have been entered in the countries like Japan, Italy, USA etc., through the language of Television. Japan achieved national wide literacy and it has been moved on to utilize the language to an impressive degree. In 1967, John Scupham reported that the Japanese Training Programme for young farmers called, "Agriculture classroom" reaches 3,00,000 people. In Italy thousands of illiterates were taught to read and write through the television. In USA it is more popular and of very high standards.

Maddison (1971) studied on Radio and Television in literacy. He surveyed the use of the Broadcasting Media in combined literacy among adults. This study was based on the data collected through a questionnaire conducted by UNESCO in 1969 covering 40 Nations supplemented by information from other published sources. This study found that the
broadcast media developed the knowledge and intelligence of day-to-day life.

Lasbi (1971) made a study entitled, "Instructional Radio for Developing Countries." This study summarized a number of cases where radio has been used for school instruction. This study gives suggestions for future applications of Radio for developing countries.

Yoursif (1974) made a study known as "Requirements of Radio and Television Broadcasting in the context of a Arab Space Communication Network." This study explored the possibilities of telecommunication system for use by the Arab countries. It also covered (i) the examination of the socio-economic situation of the people and their needs (ii) possibilities for broadcasting programme through a regional network (iii) examination of different modes of programming.

While (1976) made a study on "The uses of Radio in Primary and Secondary Formal Education." This study described the general objectives of Radio Santer Maria, the educational methodologies employed the costs as compared to conventional classroom methods, and the outcome of the project. Zon (1977) conducted his study by taking different aspects. It was found that 15 per cent to 20 per cent of the schools make use of the programmes, while the remaining 80 per cent of the teachers were in favour of these E.T.V. Programmes for infant school pupils.
Jemison et al. (1978) made a study entitled, "Effectiveness of Alternative Instructional Media A Survey." This study was based on the available literature on the effectiveness of variants of traditional education methods were instructional radio and television and of computer assisted instruction.

Kulik et al. (1980) responded in their review on 59 studies. Burns et al. (1981) reviewed in their report on 40 studies. Kearsley et al. (1983) reported in their review on 50 studies concluded from their analysis that the students learning through the computer have better results than the conventional learning. Kulik et al. (1980) analysed 59 independent studies on computer assisted college teaching.

Burns and Cozeman (1981) reviewed only studies specifically on using the computer assisted Instruction in Mathematics instruction. They found that the computer used for either drill and practical or tutorials. They produced higher achievement than conventional methods at both the elementary and high school levels.

Gregory (1981), made a study on access of calculators in the elementary mathematics. The source Aids were collected from the U.K. and Australia. It aimed to cover the uses of calculators in the primary, middle and lower secondary school age. He published his report giving guidelines for effective use of calculator at primary level.
Stickell (1981) reviewed 150 comparison of ETV conventional face to face instruction from 31 research reports. Overall 75 percentage of the studies showed no difference with equal percentage TV for face to face instruction. The 10 results were fully interpretable in favour of effectiveness of TV.

Thomas Good (1981) conducted a TV study in Brilaim which aimed at improving children’s comprehension of information presented in TV programmes. 23 children participated in the study viewing a total of fifteen minute ETV programmes over a period of five weeks. The programmes included language, arts and social studies. It seemed that the training did improve their comprehension and that such training might serve to maximize the benefits of instruction. They asked to complete worksheet. Those who had completed the worksheet answered significantly more questions correctly.

Barberra (1989) surveyed the role of educational technology for self development in Garland independent school district in Texas. In order to ensure that the administrators and teachers would utilize the educational technology to its full potential the survey was done. The results of the survey showed a high level of satisfaction with the course. The educational technology course provided and opportunity for teachers to develop skills in the under studying and of audiovisual technology etc.

Glen et al. (1989) made a study entitled, “A perfection on Technology Training for Teachers.” They selected the sample from
Minneapolis colleges of education trainees. Their findings were (i) many teacher educators were not prepared to use technology effectively in their courses (ii) equipment is often located in laboratories and the difficult to access and (iii) the curriculum is over loaded with completing topics.

M.C. Callum, M.C. Pharson, Mears, Moly Neaum, Golden, Harmen, Kauffuman, Larisma and Robera have done important survey of the researches conducted by the research division of the National Educational Association in America. These surveys revealed an enormous and widespread use of Educational Technological Aids in the field of education. This however is the national outcome due to the increased supply of these Aids in the past decade. The public schools, colleges and universities are evidently making use of these Aids more than before.

Louri, D.Wagner of the Elimwood School in Syracuae, New York, made a survey of the Map-reading abilities of her non and other size grade students. She defined skills expected at this stage and tested them on a carefully prepared examination. Her results revealed a wide range in map-reading skills of the students tested and a variation from 92-97 per cent in the number of correct responses to different test items. Direction on polar equal jurisdiction projections brought the poorest responses. Many pupils could not read such a map properly, since north was the center and south was along going outward from it. She made the following conclusions; Grade placement of map skills to be taught must be tentative because of
these differences however specific learning must be planned for particular grades and maps and globes must be designed on this basis.

Filmstrips and slides are among the most economical of Educational Technological Aids. Therefore their effectiveness as compared with the more expensive motion picture has frequently been studied. “Early studies by Brown and James comparing filmstrips and study with the silent motion pictures found in General that the projects still picture were about as effective in teaching factual information as silent film.”

A comparative study of the effectiveness of the sound motion picture, the silent motion pictures, the sound filmstrip and the silent filmstrip in teaching four media and of safety education in the Sixth Grade was done by Goodman. As a visual media, the silent motion pictures secured the first place. The two filmstrips came vying with each other. Last of all came sound films. The learning gained through all these four media was high on immediate and delayed recall.

Louri Romano studied the role of 16 mm motion picture and projected still picture in science but vocabulary learning at grades 5, 6 and 7. He indicated that the use of filmstrips, films and still pictures together in support of each other, constituted to the development with non audio visual methods of learning.
Went, Butus and Charles Hobern conducted a research in the use of films. They got the following results.

(i) Good films can be used as the role means for teaching some kinds of tactual material and performance skills.

(ii) Ability to learn from film improves with practice.

(iii) Note-taking should not be encouraged during the average film showing because it interferes with attention and hence with learning.

(iv) Increased learning will result from film showing if the viewers are told ‘firmly’ that they are expected to learn from the film and that they will be tested.

(v) Men can probably learn a skill by watching a film and imagining that they are performing it going through the skill ‘mentally’ even though they do not have the equipments.

(vi) The sound track often covers the important material to be learned in an informational film.

(vii) Massed films shown for half an hour daily for many months etc. time lead to unfavourable attitudes towards the subject by both students and teachers.

(viii) Teachers can increase learning from films by providing the participation on and repetition experience as part of their use of films.

Godfney, P. Eleanor’s “Survey Report on Audio Visual Growth”, Educational Screen and Audio-Visual Cande, Vol.45 (January 1966, pp.18-21) said that, by 1964 all the sample districts had 16 mm slide or
film projector, all but five had tape recorders and all but 245 had opaque projections were found more frequently in the large school system. There was significant growth in the amount of audio-visual aids.

II.3. Studies Conducted in India

A comparative study on the effectiveness of three well known and ten visual aids in science technology was done by V.B. Jayanthi, in 1954-55. An investigation was done entitled "A critical study of the aids used, in the technology of Natural Science in forms IV to VI." Through the investigation we came to the following conclusion

(i) Making models, posters and diagram by the children should be encouraged.

(ii) Every school should have the science laboratory and a science room, because they give science information and help science teaching a lot.

(iii) Good teaching and techniques are not enough but efficient planning by school administrations make teaching more effective.

The investigation "Teaching of general science in Standard VII in some Madras City Schools" used questionnaire method to get data regarding the use of audio-visual aids and its availability in some Madras City Schools. The investigation arrived the following conclusions.

(i) The audio-visual aids available in inadequate measures, are black boards diagram and picture.
(ii) The availability of the aids namely charts, models, bulletin, board, filmstrip, projector, telescope, radio and motion picture is only satisfactory.

(iii) The availability of the rest of the items namely museum, school garden, planned boards, epidiascope and herbarium are adequate.

(iv) The private schools are better equipped with audio-visual aids than the government school of Madras City.

Kumar (1955) conducted two surveys in Delhi and Bombay on school broadcast programmes for his master degree in education at the University of London, Institute of Education. He visited the school during listening hours and collected response through correspondence. He found that out of 323 schools at Delhi, 92 schools had the listening facilities and the reception was poor in all the listening schools except three. There was no provision for follow up activities or pre and post broadcast discussion. The survey of school broadcast programme in the schools of Bombay was made by partial correspondence and out of 800 schools, 402 schools had listening facilities. The investigator sent questionnaire to 126 school, 40 schools sent their replies. The main findings of the survey were 5 per cent of the schools used to listening the school broadcast programme regularly and 60 per cent casually. Reception on the whole was very poor.

Kumuda (1956) made a study on Educational Television. She found that students viewing television as well as modern media asked what they most enjoyed during their leisure hours on Saturdays and Sundays when they did not go to school and after they come back from
schools. It was found that there were studying difference between all in three occasions. Watching T.V. was strongly influenced by content and time. It was found that about 31 per cent of the children liked watching T.V. on week ends and 5 per cent choose T.V. as the most enjoyable during holidays. These findings therefore suggest that children watched T.V. mostly when they were fixed and need relaxation.

The Listener Research Unit of All India Radio (1964), Nasik, Poona, Madras, Calcutta, Munshidabad and Bangalore did a survey. The highlights of the All India Radio survey are

(i) The teacher took occasional interest in school broadcast programme.

(ii) The school syllabus were overcrowded.

(iii) There was paucity of time even to complete the prescribed courses.

(iv) Classes were over-crowded.

(v) Examination oriented education was found.

Narindar Kaur (1964), did a critical appraisal of school broadcast programme from All India Radio for his master degree in education at Jallandar. A few of the major findings of his study were (i) Schools listening to Broadcast Programme regularly were only 36.6 per cent. There are 20 per cent schools, which listen to the interesting and selected programmes only.
Ferose, M. and Paulose, D. (1967) did “A study of the teaching facilities in the schools of Coimbatore District.” The findings were

- Some of the costly equipments like the 16 mm Projector, Epidiascope etc. are owned by nearly half the number of schools.
- Filmstrip Projectors were owned by rural as well as urban jurisdictions.
- Some schools owned film showing biological process and some had provided apparatus in the place of filmstrip projector epidiascope etc.

Kesavamurthi (1967) found in his study “A enquiry into the availability and adequacy of the teaching aids in high schools of Mysore City” that

- Visual aids like bulletin boards, eharts, maps, models etc. The position is not satisfactory.
- With regard to the demonstration aids the schools have not taken pains to arrange for them.
- The schools in the Mysore City do not possess adequate number of teaching aids in high schools.

Ahulwalia and Aggarwall (1970) did “A survey of the extend of the use of films and filmstrips as a language of instruction in secondary schools of Madras State.” The results were

- Most of the schools in the sample possessed 35 mm filmstrip projectors along with 16 mm projectors.
- Majority of the projectors were in working order.
- On an average, a school possessed 13 classrooms filmstrips and 13 general filmstrips.
- More than half of the school had technician.
- In general the local repair facilities were nil.
- The general feeling of the school was positive towards the advantages of the use of films.
- 42 per cent of the school preferred to have film in Maths subjects.

Patel (1971) did "A critical evaluation on the Audio-visual education programme and the training opportunity offered to the teacher trainees in secondary teacher training institutions." 115 colleges were taken as a sample. The findings were an acute shortage of qualified and experienced staff. Limited practical experience was given in the field of Audio Visual Education.

Rao (1972) conducted "A study of the growth and development of audio visual education in the Maharashtra State." The important findings were found through questionnaires circulated to 1500 higher secondary schools of Maharashtra.

(i) Certain progressive schools of high cities like Bombay, Poona, etc., were definitely advanced in the use of audio visual Aids than the schools in slum jurisdictions and villages.

(ii) Maps and charts were commonly used.

(iii) Many schools interested to have film and Radio could not afford to have them due to want of funds.
Aggarwal (1974) made a survey of Audio visual material at the secondary training colleges to find out the development of audio visual education through a questionnaire. The important findings were

(i) The training colleges in general were poorly equipped with audio visual equipment,

(ii) Use of Educational Technological Aids were also poor,

(iii) Availability of Educational Technological Aids personnel was also poor,

(iv) There is a significant relationship between availability of audio visual equipment and strength of the school,

(v) There is no positive association between the effective or ineffective use of audio visual equipment in classroom teaching and type of management and

(vi) Other factors are heavy workload on the part of the teacher, lack of funds, lack of trained personnel, lack of time for the teacher and expensiveness of audio visual equipment.

Srivasta (1974) studied the role of school broadcasts in school education and analysed the significance of school broadcast. He had covered Maharashtra, Gujarat and Madhya Pradesh. He found that many schools have radio but no listening facilities. Some schools had tape recorders. They never recorded any broadcasts.

Mohanty and Giri (1976) conducted “A study on school broadcast programmes in Orissa” to know about the quality of the school broadcast programmes, to identify the problem starting on the way of utilization of
school broadcast programme and to assertion in the requirements of the students. Data were collected through questionnaires sent to teacher monitors. The findings were

(i) The place of listening to the radio broadcasts varied from school to school such as in classroom, staff room, neighbour’s house and science laboratory.

(ii) Most of the teachers did not hold pre and post broadcast discussion.

(iii) A majority of respondents had suggested an extension of the duration of school broadcast programmes.

Singh’s (1980) “Technology in Education” found that

(i) Educational Technology had its significant impact on the achievement of pupils in the fields of science and language.

(ii) 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.

(iii) Radio was the only gadget which was utilized by a few schools in classroom teaching – learning situation.

From a largely development project Vincent (1982) reported that nearly 55 per cent of schools in greater Mumbay do not have even five aids which were commonly used in teaching mathematics in classes ranging from I to X and 17 per cent could not recall even one. He presented a dismal picture of lack of awareness of audio-visual aids on the part of teachers.
Nagaraju (1983) and Usha Ramkumar (1983) found the school broadcasting, utilization by high schools in Bangalore district. The major findings were

(i) The mailed questionnaire revealed that only six out of 33 responding schools made arrangements for listening to the radio broadcasts. About 30 schools had no arrangements for large scale listening. Only six schools had made some arrangements in their timetable for radio lesson.

(ii) No schools had made arrangements for listening.

(iii) An analysis listening available in schools revealed that 27 out of 57 schools had radio sets in working conditions.

(iv) A majority of the schools reported non-working conditions of radiocast.

Sethu and Indu (1983) did "A study of the effectiveness of Educational Television on the Educational Development of Primary School Children." Their findings were,

(i) Out of 1450 primary schools run by Delhi Municipal Corporation, only 155 were provided with T.V. set and of these only 45 were found to show the ETV programmes to the children regularly. Of these 45 schools 12 were randomly drawn and were further randomly divided into the two experimental groups. The major findings (i) Language development among children exposed to ETV along with intervention programmes was higher than those exposed to ETV.
Mohanty and Giri (1984) did "An Evaluative study of the school Broadcast Programmes of SCERT. The findings of the study were

(i) Most of the students were not exposed to school Broadcast Programmes.

(ii) The teacher listeners failed to catch the form of presentation of the lessons.

(iii) All the programmes had contributed to students, growth with respect to their vocabulary language pronunciation and appreciation.

(iv) 60 per cent of the teachers want longer programme.

Mohanty (1984) found in his study, "Educational Broadcasting Radio and Television in Education" that

(i) There would be more enrolment, more regular attendance and less dropouts as the children would feel attracted to the school through this programme.

(ii) They would form good health habits as a result of understanding the merits of such habits through practical demonstration.

(iii) Children would realize the factors in Pollution of air, water and noise and could help maintain environmental sanitation.

(iv) They would develop awareness about different community development programmes, so that their participation in them would be promoted.
(v) They would have better achievement in school subjects like mother-tongue Mathematics, social studies, general sciences and crafts.

Singh and Singh (1984) NCERT presented a report on “ETV utilization in Orissa”. The finding of the study were

(i) All T.V. schools did not send T.V. monthly report.
(ii) In 60 to 70 per cent of the T.V. school children of varying age group watched television together.
(iii) The position with regard to the functioning of the TV sets was more encouraging in Dhenkanal and Balangir.

WAD (1984), “A study of the scope of communication media, such as Radio, Television in Education at High School level in Maharashtra State”. The main conclusions of the study were,

(i) The school TV Programmes were liked by children for their variety, their authenticity and as a changing in the learning process.
(ii) Children were more influenced by the entertainment TV programmes than the school TV programmes.
(iii) Teachers teaching in the rural jurisdictions were more keen on using radio and TV programmes in the learning process.
(iv) School radio was doing valuable work for SSC students but not school TV.

Desai (1985) compared the programmed learning approach with learning through experiments, slides with discussion and the traditional
way of teaching science to students of class VIII. He concluded that the programmed learning approach was the best. The usual classroom teaching showed the poorest results.

Kothari (1985) compared the efficacy of different instructional media in teaching Algebra to the class IX. He reported that the visual projection was more effective than activities and experiments or programmed learning material. However, the lower achievers tended to benefit more from PLM.

Goel (1985) did study on “Educational Television in India, organization and utilization.” The major findings of the study were

(i) In Maharashtra, there was no provision for a school telecast period in the school. Timetable reduced the degree of utilization.

(ii) In many centers, the programmes were urban-oriented. The rural children found it difficult to understand the language.

Pillay, G.S. (1987) studied, “Educational Television Programme.” The major findings were

(i) Among the students who had T.V. in their home, nearly, 40 per cent spent on an average between thirty and sixty minutes on viewing T.V. Programmes.

(ii) Only 48 per cent of the students reported that they used to see ETV programme.

(iii) Science students spent relatively less time on seeing T.V. programmes.

(iv) Science students were more interested in seeing ETV programmes.
Three investigations studied on the utilization of UGC granted television sets. First study was by Bai (1987) who identified the colleges that have received Television sets under UGC grant and studied how they utilized the Television sets and also checked the viewing arrangement made in the colleges. Her sample was 500 students from 49 colleges under Madurai Kamaraj University. She found 61 per cent under graduate students watch the programme everyday. Venkatraman and Bai, both, found that the Television sets were mostly placed in a laboratory or a library or a hostel. In some colleges, television sets are not available for the students. It was kept either principal's room or in staff room.

Mether and Sharma (1988) through mailed questionnaires, collected the data. They found that out of the colleges received television sets from UGC, 60 per cent made viewing arrangements. The remaining have not made proper viewing arrangements. Reasons given were, improper transmission, clash of college timetable with transmission time etc.

Singhal et al. (1988) have analysed the diffusion and social effects of television in India. The analysis was based on data gathered from a survey (1987) of 1170 adult respondents in three jurisdictions in India. About 83 per cent of the respondents were in rural jurisdictions.

Giri, A.P. (1991) found in his study "School Broadcast Programmes Problems and Prospectus" that
(1) Highly stable percentage were found both in the urban 81.01 per cent as well as rural 74.02 per cent sectors confirming the usefulness of the broadcast programmes for teachers in their teaching work as per the response of the teachers.

(2) As per the views of the teaching urban 100 per cent and rural 97.4 per cent the broadcast programmes were helpful to the student in their learning. This was correlated with the views of the educationist 80 per cent were highly stable.

(3) (i) The school broadcast programmes can be utilized adequately if action is taken by the higher authorities of education department is 38.02 per cent.

(ii) By the school authorities 37.5 per cent.

(iii) All India Radio 24.5 per cent of respondents.

(4) 66.03 per cent of the respondents opined that the pronunciation of the programmer was correct to some extent, the percentage of which was higher than the respondents which was comparatively a very high percentage than the other two categories maximum extent 20.5 per cent and not at all 5.77 per cent.

(5) All the radio personnel associated with the production of educational radio programmes said that they had the problems with regard to inadequate physical facilities, shortage of time and manpower and lack of funds.
Bhat, V.D. (1977) did “A study of the status of science teaching in the upper primary schools – Usages of teaching aids”. His main findings were

- A majority of science teachers use charts, apparatus, specimens and models in their teaching.
- A considerable number of teachers use maps, oil paints and working models.
- A considerable number of teachers adopt either self preparation of the charts or drawing on the black board or bring aids from the nearly high schools.
- Students were sent to the nearly high schools for demonstration. Prepare and requesting the higher authorities for assistance.

Chakravarty, T.R., studied “Satellite Instructional Television Experiment”, NIRD, 1982. The findings of the study were

(i) The presentation of most of the programmes of T.V. lacked the local touch. Though the language used was Hindi, the particular touch of Chattisgarh was missing.

(ii) Often the custodian of T.V. who was usually a teacher was not motivated and saw his duty as a burden.

Ravisankar, S. (1982) found in his study, “An investigation into the use of Technological Aids in Secondary School” that

(i) Many schools are equipped with audio visual communication material.
(ii) Full of the audio visual Aids have not been used for a variety of reasons; heavy syllabus, heavy workload, lack of adequate maintenance facilities, high cost of modern aids and inadequacy of finance.

(iii) Lack of training in the operation of technological aids was also found to be one of the main factors which stood in the way of introducing new teaching methods into the classroom.

Golani (1982) studied "The use of Educational Technological Aids in the secondary school of Thane district". The main findings were

(i) The schools that were situated in urban jurisdictions and the ones which were conducted by high societies possessed Educational Technological Aids.

(ii) Only few teachers used audio-visual aids.

(iii) Teachers who were trained in the use of audio-visual aids were inadequate in number.

(iv) At many places the hardware was purchased. However it was not used as proper software was not available.

(v) Audio-visual aids were useful in teaching.

(vi) Audio-visual aids were not used due to lack of properly trained personnel and lack of accommodation in the schools.

(vii) There were no incentives to teachers who used Educational Technological Aids.

(viii) The state institute for audio-visual education could not provide training to personnel and could not supply proper learning Aids.
Rao, L.L. (1984) did “A study of factors influencing the effective use of Audio-visual Equipment and Aids in Classroom Teaching.” The major findings were

(i) The position of the audio visual equipment in the schools was poor.
(ii) There was a significant relationship between the availability of the equipment and the type of management of the school.
(iii) There was association between the availability of the audio-visual equipment and the age of the schools.
(iv) There was relationship between the availability of the audio-visual equipment and the type of school.
(v) There was no positive association between the availability of audio-visual equipment and the strength of the school.
(vi) There was no significant relationship between the effective use of audio-visual equipment in classroom.
(vii) There was no significant relationship between the effective use of audio-visual equipment in the classroom teaching and the strength of the schools.

The other factors hindering the effective use of audio-visual equipment and Aids given in order of importance were, “Heavy workload on the part of the teacher”, “Lack of accommodation”, “Lack of funds”, “Lack of trained personnel”, “Lack of time for the teacher” and “Very Expressive”.

Kothari, R.G. (1985) did an investigation into efficacy of different instructional media in the teaching of mathematics to the pupils of class
IV in relation to certain variables. Some of the major findings of the study were

(i) Visual projection and activities and experiment were equally effective for Unit I while visual projection was superior to the activities and experiment approach for unit II.

(ii) The results clearly indicated that the instructional media I namely visual projection was comparatively more effective than any other media like activities and experiment or even programmed learning material.

(iii) Visual projection was superior to the traditional method of teaching for Unit I and II.

Behera, S.C. (1991) found in his study “Educational Television Programmes” that

(i) The school teachers and students should be given the opportunity to participate in the production of ETV programmes so that they would be encouraged to utilize the ETV programmes effectively.

(ii) It has been mentioned by a majority of teachers that the programmes could not be utilized properly for mechanical disorder of T.V. sets failure of electricity and lack of space in the classroom.

(iii) As high as 82 per cent of T.V. user – Teachers were of the view that they were not getting proper training in relation to ETV utilization. The TV user – Teachers training should be organized regularly to upgrade their knowledge and skills.
(iv) It is fact that adequate and appropriate support Aids like the programme schedules, teacher guidance notes etc. are often not made available to the user – teachers.

(v) It has been found that majority of teacher custodians do not pay proper attention and efforts towards pre and post telecast activities.

Ramanathan Chetty (1992) did a study on the "Utilization of Audio- visual aids in Teaching Physics in XII standard in Karur Educational District."

The survey revealed that teachers should be motivated and trained to use the Educational Technological Aids to a greater extent. There should be no difficulty in utilization of these aids. All the higher secondary schools should be well equipped with the necessary Educational Technological Aids. Projected aids like over head projector, film strip projector etc., should be available in all the schools and thereby must be easy access to them. If every teacher steps into the class with some kinds of audio-visual aids, the teaching will definitely be effective and interesting.

Thirugnanasambandam (1994) did a study on the "Application of Educational Technology for instruction of Botany at Secondary School level." He made a conclusion that the availability of the software and also the hardware must be made available in this school to a satisfactory level so that application of educational technologies can be made effective. The knowledge of teachers for working with the hardware and software is
quite inadequate, mostly in the case of those teaching who have not undergone an appropriate inservice training in this regard. Therefore, it is recommended that enough inservice training programme should be organised for all the teachers in this regard.

The interest and attitude of the teachers are found to be low in the application of educational technology.

Some special incentive schemes to encourage the teachers for better application of Educational Technology could be considered for implementation for the teacher by the individual institutions and also by the educational authorities at the state level.

Katherine (1996) did a study on “Application of Educational Technology in Teaching of Mathematics at Secondary level in Thanjavur Educational District.” She made a conclusion that

(i) The availability of Educational Technology should be adequate in the schools to a satisfactory level.

(ii) All the schools may be provided with atleast one instrument box and graph board.

(iii) The urban schools are more equipped with Educational Technology than rural schools.

(iv) The utilization of Educational Technology in aided schools is better than that of government schools.
(v) The working knowledge of the teachers who have completed post graduate are better than the working knowledge of the teachers who have completed only under graduate degree.


(i) Black board was available in 100 per cent of schools and tape recorder and radio available in 50 per cent of the schools and other equipments only below 50 per cent of the schools.

(ii) There is no significant relationship between the utilization of educational technology and the institutional variables such as locality and is it teacher variable.

(iii) The P.G. Assistants (Maths) of Pattukkottai Educational District are not having working knowledge in handling Educational Technology.

(iv) All the higher secondary schools should be well equipped with the necessary audio-visual aids.

(v) Projected aids like Over Head Projector, Filmstrip Projector etc., should be available in all the schools and thereby must be easy access, to them.

Sandhya, G. (1998) found in her study “A survey of the availability and utilization of visual aids for science teaching in upper primary schools in Mavelikkara Taluk, Kerala” that
(i) Text books, Black board, Rolling board, Charts, Flash cards, Posters, Diagrams, Pictures, Specimen, Models, OHP, Filmstrip Projector and Slide Projector are the most commonly available visual aids.

(ii) The visual aids which are less available are Bulletin board, Flannel board and Magnetic board.

(iii) The type of visual aids which are used more by teachers in non-projected visual aids as compared to projected aids.

(iv) The major reason for not using the visual aids by teachers are lack of time and lack of funds to purchasing the visual aids.

(v) Teachers who were trained in the operation of projected visual aids were inadequate in number. Among those trained, the government school teachers are large in number.

Anwar Sadath (1998) conducted a study on availability and utilization of audio-visual aids for teaching history in the secondary schools of Malappura Educational District. He made a conclusion that,

(i) The availability and utilization of audio-visual aids for teaching history in the secondary schools of Malappura Educational District is not adequate.

(ii) Teachers, decision makers and all those who are interested in the field of education have to be more positive to solve this problem.

(iii) The important findings were availability of audio-visual for teaching history in the secondary school of Malappura Educational district is not adequate. Chart, books and map were available in 100 per cent of schools. Tape recorders were in 94 per cent of
schools. Bulletin, boards were available in 60 per cent of schools, Slide projector 11 per cent, VCR 6 percent were available.

(iv) Educational Technological Aids are not properly utilized for teaching history in Malappura secondary schools.

(v) The high schools assistants of history in the Malappura Educational District are not having adequate working knowledge in handling audio-visual teaching aids.

(vi) Urban schools are more equipped with audio-visual aids than the rural schools.

(vii) There is no significant relationship between the availability of audio-visual aids and the type of the institution.

(viii) There is no significant relationship between the utilization of audio-visual aids and the locality of the institution.

(ix) There is no significant relationship between the utilization of audio-visual aids and the age of the teachers.

(x) There is no significant relationship between the utilization and the teaching experience of the teachers.

(xi) There is no significant relationship between the utilization and the sex of the teacher.

(xii) There is no significant relationship between the utilization of educational technology and the educational qualification of the teachers.

(xiii) There is no significant relationship between working knowledge in handling audio-visual aids and the age of the teacher.

(xiv) There is no significant relationship between the working knowledge and the sex of the teacher.
(xv) There is no significant relationship between the working knowledge in handling audio-visual aids and the teaching experience of the teachers.

(xvi) There is no significant relationship between the working knowledge and the educational qualification.

Afeff Tharavattath (2000) conducted a study on "The availability and utilization of Educational Technology for teaching biology in the secondary level in Malappura District." Some of his findings were

(i) Availability of Educational Technology for teaching biology in the secondary school in Malappura district is adequate.

(ii) Utilization of educational technology for teaching biology in the secondary school in Malappura district is not proper.

(iii) The high school assistants of biology in the Malappura district are having adequate working knowledge in handling educational technology aids.

(iv) The urban schools are more equipped with educational technology than the rural schools.

(v) There is no significant difference between the availability of educational technology and the types of the institution.

(vi) The urban schools are more utilizing educational technology than the rural schools.

(vii) The private schools are more utilizing educational technology than the government schools.

(viii) The teachers of the age group below 40 years are having more working knowledge in handling educational technology aids.
(ix) The male teachers are having more working knowledge in handling educational technology aids than the female teachers.

(x) The Biology teachers who attended the inservice training programme are having more working knowledge in handling educational technology aids than those who are not attended.

Krishnanunni Mattada (2001) conducted “A study about the availability and utilization of Educational Technology for teaching Geography and Economics at secondary level in Malappura District, Kerala” gave the suggestions that,

(i) The availability and utilization of Educational Technology for teaching geography and economics at secondary level in Malappura Educational District should be made adequate, so as to make teaching learning process more effective.

(ii) Special training programme should be arranged for teaching of unaided schools in order to get training in handling educational technology.

(iii) Teachers should be made aware of scope of educational technology.

(iv) Teacher’s attitude towards the utilization of educational technology should be developed positively.

(v) Lady teachers should improve their working knowledge in handling the educational technological aids.
Inferences from the Study Reviewed

From the above studies reviewed, the following inferences have been made

(i) The use of educational technology has the positive effect on the teaching learning processes in our classroom.

(ii) The study of the use of educational technology would help for the teachers, the learners the decision makers and all those concerned in the field of education.

(iii) The variables such as teachers, learners, institutions, language of instruction, the type of school, nature of management, etc., play vital role in utilization, availability, working knowledge of educational technology and attitude towards educational technology.

(iv) The Radio programmes and ETV programmes had significant influence on the development of knowledge and understanding of the secondary school children.

Conclusion

In this chapter an attempt was made to bring together and review some studies done in India and abroad on the utilization and importance of audio-visual aids. Next chapter deals with the tools developed and the methodology followed by the investigator.