CHAPTER 2

REVIEW OF RELATED LITERATURE

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REVIEW OF RELATED LITERATURE

2.1. Introduction

The review of related studies is a very significant aspect of research process. It helps the researcher by providing some information about the status of knowledge in the area intended to study. It provides the researcher with information related to the type of study and type of design that may be eventually used in conducting research. Research work done in past serves as a solid foundation on which any new investigation firmly rests. Hence, planning for a new research work presupposes consideration of good work done in the past.

Accepting the importance of review of the past work, the present investigator tried to go through available literature and the research reports. For the purpose of review, investigator had gone through surveys of research in education, related journals in this field, dissertation abstract international and theses at master and doctoral levels. Brief summary of same has been presented in various categories in pages to follow.

2.2. Studies seeking to establish or compare effectiveness of various instructional media involving audio visual modalities in the field of education

Here an attempt has been made to present a review of some important studies seeking to establish or compare effectiveness of various instructional media involving audio visual modalities in the field of education.

George (1966) studied the scope and effectiveness of audio visual instructional aids in improving English teaching in Kerala State in the first three years of school course. Sample of two hundred primary school teachers from Kerala State was selected. The study was undertaken to find out:

i. The availability of audio visual aids in schools.

ii. The attitude of teachers towards the audio visual aids.

iii. Whether the teaching of English with audio visual aids is more effective than the way of conditional teaching.

It was found that majority of schools did not possess teaching aids like projector, tape recorder, flannel board, etc. The teaching aids available in the schools were not maintained and used properly due to financial problems, syllabus problems, insufficient number of material aids and lack of skill and special training. The percentage of trained teachers in audio visual instruction was 6.06 only and the achievement of pupils taught by using audio visual aids was higher than those taught by the usual method and use of audio visual aids did not require more time than that was required for traditional teaching.

Jones (1975) investigated the comparative effectiveness of video cassette and slide tape presentation for self instruction of para-professionals. Based on single classification analysis of covariance, controlling pre-test performance, no significant difference was found at 0.05 level between the group of instructional aids taught by the video-cassette presentation and the group taught by slide-tape presentation on six week retention test performance. The post test performance of slide-tape group was significantly better than that of video cassette group. One way analysis of variance of the total population under study showed that both the self-instructional presentation resulted in highly significant improvements in post-test and retention test when compared to pre-test performance. It was concluded that both self instructional presentations were effective. However, the study was not designed to measure the degree of effectiveness.

Sonar (1975) studied the use of film strips in teaching of science students were selected from V, VI and VIIth standards. The context was General Science related to the selected standards. It was found that almost all topics in General Science syllabus and the textbooks can be effectively taught, with the help of filmstrips. The use of instructional aids showed the possibility of improvement in methodology of science teaching, raising the standard of science education in primary schools and development of taste and interest in the younger generation for the science subject.

Machula (1976) carried out an experiment to determine if different affective responses would result from exposure to three different forms of media presenting the same content. The media involved this experiment were video tape, audio tape and print. Out of three groups, one group viewed the

video tape, another heared the audio tape and a third group read the printed transcript. A semantic differential consisting of fifteen scales on seven concepts was used to measure differences in effective response and an objective test was administered to measure cognitive learning. An analysis of co-variance between pre-test and post-test scores of the cognitive learning showed that the subjects receiving the audio-tape version had learn significantly less than those receiving the other treatments.

Menon (1978) studied the relative effectiveness of different media in teaching physics at secondary school level. The sample of the study were students of standard VIII boys and girls from English medium school along with teachers of that school. The media under comparison in this study were (i) teacher and charts (ii) self-instructional written material and (iii) visual projections with taped commentary. Three teaching units were selected from Elementary Mechanics, viz. (i) Motion (ii) Inertia (ii) levers. The experimental data were analyzed by using the technique of analysis of variance (ANOVA) and 't' test. The reactions as shown by the administered reaction scale was analyzed by finding the percentage of reaction to individual aspects of the scale. The testing of the hypothesis formed the analysis of the Latin Square Design for criterion variable. As a result of the experiment, the findings were arrived at:

1. The medium 3 is the most effective out of the three instructional media under comparison in terms of the achievement of the instructional objectives and students' reactions towards the media.
2. There is no significance difference between the medium 1 and medium 2 in their effectiveness in terms of the achievement of the instructional objectives.

3. The medium 1 is more effective than the medium 2, in terms of the students' reactions towards the media.

Stanton (1979) attempted to investigate comparative effectiveness of two messages (simple and complex) and three media conditions (audio, written, video) for facilitating information gain in learning. It ninety undergraduates were randomly assigned to six conditions. Each treatment group received a complex or simple message transmitted by audio-cassettes, audio-visual cassette or written study sheet. A two factor analysis of variance indicated a significant effect for media and not for the messages. Scheffe tests were performed to compare audio and video, video and written, and written and audio media for both simple and complex messages. It was found that video is more effective than audio in the retention of simple information. No difference was found between the complex audio message and the complex video message. The simple video message was not found more effective than the simple written message, written is more effective than audio in the retention of simple information. No difference was found between the complex written message and the complex audio message.

Jeyachandran (1980) studied the efficacy of programmed filmstrips as a method of teaching History. The sample was chosen from nine secondary schools from Madras. The objectives of the study were to develop software material for the media, to validate the developed materials against the conventional teaching in terms of immediate recall and delayed retention in the case of the four objectives viz. knowledge, understanding, application and skill. The major findings were: (i) It is possible to develop programmed learning materials in History. (ii) Teacher has an important role, when self-learning techniques are employed. (iii) Learning through

programmed learning material resulted in better retention. (iv) Different objective wise achievement was more in the case of teaching with programmed filmstrip.

Ravindranath (1982) developed a multi-media instructional strategy for teaching science. The sample of this aspect of the study consisted of forty five students who formed the experimental group of the validation. To study the relative effectiveness of the two types of PLM in terms of students' achievement, a criterion test was developed. This was developed by calling out criterion test items related to the concepts treated: (i) Concept of heterotrophic nutrition. (ii) Difference between heterotrophic and autotrophic nutrition. (iii) Different kinds of heterotrophs. (iv) Interdependence of plants and animals and their association.

All the raw scores on the criterion test were converted into percentages. These percentages have been analyzed using statistical techniques such as percentiles, mean, and S.D. to study the distribution of students' performance on the criterion test. To study the mean difference in the achievement of the two groups on the test students' 't' test was used. The study has resulted in the development of a duly validated multi-media instructional strategy. The strategy was found to be feasible if it is to be regularized in a school.

Krishnan (1983) developed a multi-media package for teaching a course on audio visual education to the instructor trainees and studied the effectiveness of the package in terms of achievement of instructor trainees and their attitude towards the multi-media package. The package comprised of five modules: non-projected aids, slide sound modular unit, projected

aids, summary and glossary with criterion tests, feedback exercises and assignment. Concerning effectiveness of the multi-media package in terms of achievement of the instructor trainees on the criterion tests, researcher found 98% of the instructor trainees obtained over 80% in the final test, at the end of the course. The performance of the instructor trainees in the final course test, criterion tests and in the objectives concerning comprehension, mental ability pertaining to motor skills on the criterion tests at the end of each of the five modules and the course were studied on the score obtained and the mean gain scores were found to be significant at 0.01 level for the 't' values, and the mean attitude change was found to be significant at 0.01 level on the 't' values. The attitude change was in the favourable direction.

Vardhini (1983) developed a multi-media instructional strategy for teaching science (physics and chemistry) for secondary level school students of standard VIII. Sample students were forty five which comprised of the following inputs: team-teaching, lecture, PLM, discussion, guided discovery, audio visual aids, historical approach, summary, glossary, criterion test, feedback exercises and assignment. Major findings of the study were:

i. The strategy was found valid against the criterion of scientific attitudes in that significantly higher performance was noted for the group on post-test over the pre-test. Also post-test performance of the experimental group was found significantly than the control group.

ii. A significant relationship was found between scientific attitude and achievement for experimental group and control group.

iii. Visual projections with teacher explanation and visual projections with taped commentary were equally effective in terms of achievement on the total test and on each objective.

iv. The strategy was found feasible when seen in terms of its reproducibility and the cost management by individual school.

Menon (1984) evolved a multi-media strategy for teaching 'educational technology; at post-graduate level of M.Ed. and M.Sc. (Home) twenty two sample students were selected. The strategy incorporating various instructional inputs: lecture, PLM, structured lecture, team teaching, seminar, slides and taped commentary, summary, discussion, library work, assignment, practical work, and feedback sessions. The outcome of the study was a multi-media strategy with suitable software material, tried out for its effectiveness and feasibility, which could be used to provide instruction in educational technology of one semester duration to post-graduate students in education and related disciplines. Although the strategy was validated and was expected to provide effective instruction. It could be continually improved in the light of further tryout results. While adopting the strategy to new educational situation it should be possible to make necessary and suitable modifications. In the discussion of interpretation of results, investigator indicated that the group performance and performance of the four individual students in the eight discussion sessions clearly show improvement in quantitative as well as qualitative criteria of performance. With regard to the qualitative criteria also the performance of the four individual students showed improvement. The effectiveness of the discussion sessions easily established. In all four students, the facility of language remained steady. High achievers in comprehensive criterion test were quantitatively

and qualitatively better than the low achievers. This indicated that the knowledge and understanding of the theme of discussion influenced the performance in the discussion session.

Kothari (1985) studied the effectiveness of different instructional media in the teaching of mathematics to the pupils of class IX in relation to certain variables. The sample of the study were students of Standard IX from Gujarati medium school. The three instructional media were selected for the study were: (i) visual projection (ii) activities and experiment and (iii) programmed learning material. Two teaching units of algebra viz. (i) factorization of the type a^2-b, (ii) expansion of $(a \pm b)^2$ were selected. Analysis of covariance technique was applied to judge the efficacy of one instructional media over the other. The 't' test was also applied in the process of analysing data.

The results clearly indicated that the instructional I, namely visual projection is comparatively more effective than any other instructional media like activities and experiment or even programmed learning mathematical for teaching of mathematics. Programmed learning material and traditional method of teaching are equally effective for both the units.

It was also found in the study that, especially for Unit I, that the low achieving pupils are comparatively more benefited by programmed learning material than the high achievers and the average achieving pupils. The high achievers are found performing well even in traditional method of teaching mathematics.

Desai (1985) attempted an investigation into efficacy of different instructional media in the teaching of science to the pupils of Class VIII in relation to certain variables. The sample of the study was selected from two schools of Anand city. The programmed learning material, slides and laboratory experiments were designed. The criterion test was prepared on the units selected for experimentation. The Junior Index of Motivation Scale and Reasoning Ability Test were used for measuring motivation towards schools and reasoning ability of pupils. Four equivalent groups with respect to motivation towards schools and reasoning ability were prepared. One group was taught by programmed learning, the second group was taught through slides with discussion approach, the third group was taught through the experimental approach and the fourth group was taught through the traditional approach. The analysis of covariance was used to test the various hypotheses.

The major findings of the study were: (i) The programmed learning approach was more effective than the traditional way of teaching science. (ii) The slide with discussion approach was more effective than the traditional way of teaching science. (iii) The experimental approach was more effective than the traditional way of teaching science. (iv) In the teaching of science, the experimental approach was the most effective of all approaches. (v) The programmed learning approach and slides with discussion approach were equally effective. (vi) The use of instructional media indicated the possibility of improvement in the methodology of science teaching, raising the standard of science education in secondary schools and development of taste and interest in the younger generation for the subject of science.

The major educational implication of the study was that there was not one method of teaching science. The teacher should be experimental-minded and should use different approaches in the light of different objectives. Media were effective in science education.

Manjula (1985) developed a curriculum of family life education for higher secondary students and study its effectiveness in terms of students' achievement on criterion tests and comprehensive tests, and in terms of students attitude and reactions. The various instructional components such as introduction by the teacher, deviated programmed learning, lecture, dialogue form, discussion, guided discovery, audio visual, case study, summary, question box, glossary, exercises and assignments etc. provided for the learning experiences of students. Major findings of the study were:

i. Those units which were evaluated by criterion tests indicated either average or high level of performance of students on total test excepting the first, two units. Validation of the curriculum inferred from the achievement of students on comprehensive test. Post-test performance of experimental group on comprehensive tests was found significantly higher than the control group.

ii. A significant relationship was found between the achievement and the attitude for boys and girls belonging to the experimental group, whereas in the control group, such relationship was not observed for boys and girls.

iii. The curriculum was found feasible when seen in terms of reproducibility and cost management by schools.

Mandal (1993) studied the effectiveness of three instructional strategies for higher education. The study was conducted on the comparative

effectiveness of the modern and the conventional media using the pre-post experimental design in teaching selected aspects of puppetry to a randomly selected sample of 177 Home Science College students in terms of gain in knowledge and development of ability. The various tools used for the study included checklist for English language competence, attitude scale for measuring attitude for the respondents towards the strategy, rating scale for measuring gain in knowledge and office records for the academic achievement of the respondents. After scoring and categorizing, the data were subjected to the statistical analysis by using percentages, 't' - test, F - test and paired test. All the three strategies: video-film, lecture-cum-demonstration and booklet were effective in imparting higher education, but video was found to be comparatively more effective than the other two. The respondents with high achievement, favourable attitude and good English language competence had higher gain in knowledge and development of ability as compared to their counterparts.

These studies were related to subjects like Physics, Chemistry, Mathematics, Audio Visual Education, Nutrition Education and English. In these studies samples were drawn from primary, secondary and master degree level. In these studies strategies like lecture-cum-demonstration, projector, taped lecture and PLM were used. In these studies, techniques like analysis of variance (ANOVA), 't' test and 'F' test were used for data analysis. Studies clearly indicated that use of various instructional media was effective for teaching variety of subjects at different level.

2.3. Studies in the field of extension of Home Science education

The researches, the review of which is given in the following lines were conducted in the field of extension of Home Science education.

Ankleshwaria (1980) studied a comparison of different strategies to teach nutrition to the Home Science College students of varying intelligence. The three instructional strategies were identified as (i) PLM with laboratory demonstrations and discussion, (ii) structural lecture with black board work, laboratory demonstrations and library references and (iii) taped commentary with charts and work-sheets, laboratory demonstrations and discussions. The sample of the students comprised the second year class Home Science girls of Home Science Faculty, The M.S. University of Baroda city. Along with three criterion tests the Ravan's standard progressive matrices were used to describe the nature of the pupils in the sample and to measure the criterion variable.

As a result of the experiment, the findings revealed that strategy one including PLM + Laboratory demonstrations + Discussion was found to be better in learning only one unit on 'Proteins' and not in case of learning other two units, namely 'carbohydrates' and 'fats' i.e. all strategies are equally effective in teaching the selected content. Further strategy two was found to be more effective only with the high intelligence group, with other two strategies level of intelligence played no significance role. The findings support a view that presentation of content matter through a strategy is a key towards mastery level of learning as it maximize the fulfillment of all the functions of an instructional process.

Tiwari (1985) made investigation concerning information needs of the TV viewing urban homemakers of Baroda city and their opinions regarding the improvement in the quality of programmes. It was found that home makers of Baroda viewed majority of the programmes. They wanted more coverage for the programmes in the field of Home Science. They were dissatisfied concerning the programmes in nutrition education. They wanted more quality programmes in nutrition education. They wanted to watch their favourite programmes again and again.

Cherian (1986) studied the impact of TV in terms of knowledge of rural people and to analyze the content of the selected TV programmes. The content was concerning health and hygiene, nutrition and family planning programmes of PIJ TV and its impact on acquisition of knowledge by rural people of selected villages of Kheda district. The study was conducted in Kheda district of Gujarat State. Eighty men and eighty women were selected from the central villages also. The selected TV programmes were recorded on video cassette recorder. Data was collected by interview techniques. Content analysis was carried out by the experts of education media research centre of Gujarat University. The findings were: (i) There is need to motivate the rural people to watch TV more as an educational medium. (ii) Timing of the programmes, for women is not suitable. (iii) The department of extension of Home Science education must include TV as an additional media while teaching audio visual aids.

Kaushal (1986) studied the impact of television viewing in terms of gain in knowledge, change in opinions and change in the amount of time spent on the household and outside activities of the students of institute of Home and Economics of Delhi in relation to selected variables. Selected

variables were social problems, legal problems, personality development and household management, etc. Sample was taken from the same institution from the third year class. As a tool questionnaire was prepared to find out the background information and the impact of television viewing in terms of above-mentioned aspects. The data was analyzed by using chi-square test and percentages. It was found that respondents were high achievers and high introverts. Students gained more knowledge about personality development than social and legal problems. They gained more about conversation skill. The change in opinions regarding family relationships and household management was found low.

Sinha (1988) studied the use of communication devices such as graphic aids, written communication, displays, activities aids and audio-visual aids in campaigning for family planning in Baroda city. Sample of the study consisted of officials and beneficiaries from selected eight family planning centres which included four private and four government family planning centres. An interview-cum-questionnaire schedule was constructed on the basis of information collected. It was found that number of respondents from government centres were more than from private centres. The findings reveal some differences in identifying the use of communication devices for giving various family planning messages by officials beneficiaries. This study established the differences in the use of the communication devices for various messages in general and due to selected variables.

In these studies contents like nutrition education, educational TV programmes, health and hygiene, nutrition and family planning programmes and home management were included. Samples were drawn from rural area,

second year Home Science and third year Home and Economic. Instructional strategies like PLM and taped commentary were used. Data analysis were carried out by using techniques like 't' test, Chi-square test and percentages. From these studies it was found that there was more quality programmes in nutrition education, people wanted to watch their favourite programmes again and again.

2.4. Studies concerning educational television in the field of education

This section deals with studies concerning with educational television in the field of education. An attempt has been made here to present some of the researches related to this area.

Butler (1980) studied a comparative analysis of three instructional television presentation formats. It was concluded that cognitive learning from televised instruction was more effectively produced when certain types of presentation formats were embodied in the educational TV programmes.

Kanade (1982) studied the impact of instructional television on the behaviour of the rural elementary school children. Investigator studied the effect of TV on the creative behaviour and curiosity of the students, it was found that exposure to instructional TV, positively influenced creative behaviour of rural elementary school children. He also found that there was no improvement in these aspects of curiosity involving exploration but their inquisitive aspect was stimulated. It was inferred there is need for the development of suitable software for the development of creative potential among the students.

Sadam (1983) studied the effects of modern educational technology on the mathematics performance of elementary students in Saudi Arabia. He compared the effectiveness of televised instruction with the conventional teaching and concluded that the group which received televised instruction had a higher mean score than the one which received instruction by the conventional method.

Seth (1983) studied the effectiveness of educational TV on the educational development of primary school children. It is found that the language development of children exposed to educational TV was higher than those not exposed to education TV. The children also acquired more information related to educational TV programme when they were exposed to it. As regards, scholastic achievement the results were in the positive direction on achievement in language and science and not in social studies. Out of nine, in five schools it had reached the level of significance. It was indicated that there is need for the production of software to enhance the scholastic achievement of the students.

Goel (1984) studied organization and utilization of educational television in India and concluded that the frequency of the TV programmes was less and created problems of scheduling the programmes in the school time table and, also lacked relevance and comprehension to certain types of students as the same programme was produced for students from urban and rural areas schools. Pre and post-telecast activities are not carried out by the school teachers. The large number of students in a class also created problems of utilization. Moreover since the teachers lacked training they were diffident about their roles in the class-room instruction along with the school TV programmes. It has been implied that

though TV is a powerful means of communication it is under utilized in our schools and it has to be better harnessed for scholastic achievement and creative potential by designing and producing software more suitable for the development of children.

Chopra (1990) studied the impact of TV on social awareness of adults. The study is experimental one. The content was concerning social, legal, economical and health problem of adults. The objectives of the study was to find out impact of TV programmes in terms of gain in knowledge of the adults regarding the content. The findings revealed that in case of health and nutrition problems, the impact of TV viewing on gain in knowledge of the respondents was quite high. Awareness of health issues was increasing day by day which helped in high gain in knowledge.

Studies reviewed dealt with learning through educational television programmes. Samples were drawn from primary and elementary levels. Major findings indicated that there was need for the development of suitable software. The group which received televised instruction had higher mean score than the one which received instruction by the conventional method. There is need for the production of software to enhance the scholastic achievement of the students and there is a need to improve the quality of educational television programmes. There is need to systematize mechanism to provide feedback to the procedures of school TV programmes. There is need to prepare quality. TV programmes regarding Health and Nutrition.

2.5. Studies Concerning Nutrition Education

Here an attempt has been made to present a review of some important studies concerning nutrition education.

Sail (1970) studied efficacy of a school lunch based on locally available and cheap foods in improving the nutritional status of school boys. Data was collected on the dietary intake and clinical and biochemical status of poor school boys aged 7-12 years in a selected village. Comparative data was obtained on apparently well nourished upper class children. The above data was compared with those obtained on children fed a school lunch under 'CARE' programme for two years. For comparison purpose fifty two boys belonging to the low income group in rural areas and twenty one boys belonging upper class families in Baroda were selected. Six months treatment was taken as experimental treatment. Parameters were measured like body, blood, serum, urine, etc. The lunch was based on wheat, legume (peas or Bengal gram) leafy vegetables and butter milk and carotene. The similar lunch was given in the following year with minor modification. The respondents were measured in terms of weight, height, composition of blood, urine etc. It is found that the lunch providing cereal, legume, and a liberal amount of leafy vegetables (50-60 grams) correct the basic deficiencies in the diet of school children. The results also suggested a more serious state of under nutrition during adolescence.

Shirur (1972) studied the impact of nutrition education programme on pupils and teachers of elementary schools. The sample represented the two developmental blocks Wada and Indupur from western Maharashtra. Wada represented backward community and Indupur a forward one. Teachers from

both community schools were selected. From the same blocks students of standard I to IV and VIth were selected as sample. The schools were stratified into types as single teacher, double teacher, multi-teacher schools and those were randomly allotted to the control and experimental groups. A detailed examination of the existing syllabi in general science, health and hygiene and of various visual aids for elementary schools was conducted. Teachers from both community schools were interviewed individually and in groups to appraise and discuss the food grown. Nutrition tests of objective type for sample students were conducted to assess their nutritional knowledge and application. Item analysis was conducted to compare the discrimination and difficulty indices before accepting the items for final administration. A nutrition guide book was prepared for teachers based on syllabi for selected grades. For experimental group an orientation course was conducted. An opinionnaire was administered at the end of the education programme to collect information on several aspects of the guide book and on education programme. For analysis of data 't' tests were computed between the scores of controlled and experimental groups. The findings: (i) The concepts or the topics included in the syllabi for different grades were not clear out and specific; they did not suggest content areas of teaching. (ii) Textbooks in general science used by teachers were inadequate for the purpose of teaching. (iii) Ten major nutrition concepts were found useful for teachers. (iv) As a result of experiment there was an improvement from eighteen percent to fifty five percent of pupils who could read well and seventeen percent to fifty five percent who could write well. (v) Pupils developed better habits and attitudes towards food. (vi) Positive impact of education programme on the teachers and the students was there. (vii) The feeding programme in the school had no influence on the knowledge of the

pupils on nutrition. (viii) The educational programme increased the nutrition knowledge of the pupils and teachers.

Subhadramma (1974) made an investigation into the food habits of the secondary school students of Kerala. The study is multi-disciplinary involving education nutrition education, sociology and history. The sample consisted of fifty schools selected from the twenty four educational districts and the city of Trivendrum. From each school thirty students were selected with equal representation of boys and girls. Four hundred mothers were also included in the sample. Two hundred head masters were selected. Sample selected, on the random basis. The tools included questionnaire, interview, food diaries and historical records etc. The major findings revealed: (i) 1/5 of the pupils were vegetarian and an equal number supplemented vegetarian food with eggs. (ii) Milk was consumed at all by 4% of pupils and fish was favoured more than meat. (iii) Teaching of the science of food and nutrition in school was improved food habits and more students became nutrition conscious.

In these studies contents like nutrition status, values of nutrition education and food habits were included. Sample were drawn from primary school level belonging to rural area. The major findings of these studies indicated that there is need to draw attention to face the problem of under nutrition. The educational programme increased the nutrition knowledge. Teaching of science of food and nutrition in schools has improved the food habits of the students.

2.6. Studies Concerning Instructional Video

Here an attempt has been made to present a review of some important studies concerning instructional video.

Anderson (1979) studied the use of video tape modules to improve teaching methods and techniques of community college Art teachers. The purpose of the study was to develop effective means of teaching certain fundamental concepts in Art. Each module consists of audio, videotape and software components. The testing instrument was pre-test, post-test was administered to selected population. The major findings were: (i) The videotape module approach should be introduced into Art teacher training method courses. (ii) Supported study should be made of the effectiveness of the videotape module approach.

Lietke (1983) studied effects of treatment and aptitude treatment interactions on the learning effects of video instruction. The learning effects of video instruction contained higher cognitive and lower cognitive inserted post-questions or no inserted questions. The purpose of the study was to study the learning effects of video instruction and also study the effects that are mediated by learners' characteristics, attitude of learners towards video instruction and memory aptitude of learner. The testing instrument was pre-questionnaire and post-questionnaire. The results were consistent with previous research on post-questions inserted in text and suggested that inserted post-questions were promoting technique for enhancing the effectiveness of instructional video programmes.

Kolloff (1983) studied transfer of psychomotor learning through instruction via time-composed videotape. The purpose of the study was to determine the effect of instruction via time composed videotape presentations on college students performance of a psychomotor task. The selected variables were presentation, rate of student's scholastic ability and viewing practice. The selected tools were pre-test, post-test, attitude scale etc. It was found that at collegiate level the students preferred practice, viewing the video. The students were familiar with video. The psychomotor learning through instruction via time composed videotape was effective.

Brayles (1986) studied the influence of videotape feedback on student and teacher perceptions of a public speaking performance. The purpose of the study was to determine whether videotape feedback, provided after students public speaking performance increased the amount of congruency between student self-evaluation and teacher evaluation of that speaking performance. The selected variables were language, material, delivery analysis, organization and voice. The major findings of the study indicated that video tape feedback increased congruency between student and teacher perception on some aspects of public performance.

Peterson (1986) studied the effect of video-assisted instruction on student achievement and attitude in first grade mathematics. The purpose of the study was to determine if students achievement in mathematics and their positive attitude toward the subject was increased or not, through integration of daily video-taped lessons into a traditional mathematics classroom. The sample was selected from the first grade level students. The content was mathematics. The major findings of the study indicated that

video-assisted instruction was as effective as live instruction in terms of student achievement. Students in the video assisted instruction group made significance long term positive gains in their attitude towards mathematics. There were additional unexpected outcomes favouring the use of video-assisted instruction.

El Menoufi (1988) studied learner and teacher controlled strategies for using video to teach oral skills. The purpose of the study was to prepare ten video lessons to train Arab students in the articulations of English sound. Pre-test, post-test design, the TOEFL SPEAK test, and the diagnostic pronunciation tests were used to measure entry and exit oral speech performance. The major findings indicated that video lessons can be used effectively in teaching English. The student control group performed significantly better than the teacher control group. There were no significant differences between the teacher control group and student control group.

Tannahill (1989) studied the use of Video Cassette Recorder among social studies teachers in rural public high schools of United States. The study was intended to determine the instructional use of V.C.R. and the quality of that instruction. Specific research questions to be answered included the availability of V.C.R. equipment; the types and source of video tapes being used; whether the teachers were following recognized film use techniques as teaching strategies with videotapes; whether most V.C.R. use was a supplement to instruction, integrated with other instruction to teach concepts or as an independent method of instruction and whether social studies educator were knowledgeable about the observant of the United States Copyright Revision Act of 1976. Several conclusions were

reacted. The use of V.C.R. was to be popular tool for social studies educators in the very small districts. It would be used more frequently if more materials were available at reasonable prices. VCRs were generally available to educators, but most social studies teachers furnished their own videotapes or ordered them from regional media centres. Videotapes were used as supplemental material rather than as the predominant instructional method or to present basic concepts.

In these studies contents like teaching methods and techniques of art teachers, learning effects of video instruction, influence of video tape feedback on students and teachers perceptions of a public speaking performance, mathematics, English and social studies were included. Teachers and college students were selected as samples. It can be concluded that such studies should be made for the effectiveness of the video tape module approach. The psychomotor learning through instruction via time composed video tape was effective. Students in the video assisted instruction group made significant long term positive gain.

2.7. Studies Concerning Development and Tryout of Instructional Video and its Comparison with Traditional Method of Teaching

Here an attempt has been made to present a review of some important studies concerning development and tryout of instructional video and its comparison with traditional method of teaching.

William Charles (1972) studied the relative effectiveness of video tapes with the conventional teacher presentation method in teaching

typewriting to intermediate students. Sixty experimental and sixty control students were involved in the study. Students in the experimental group received all their instructions through prepared video tapes while the control group received all their instructions in conventional teacher presentation. The test scores were analyzed with analysis of co-variance technique. The experimental group achieved higher than the control group answering an evaluation form pertaining to video instruction gave high approval to the prepared video tapes as a medium of instruction.

Levy (1977) prepared an instructional video-tape recorded lessons in Consumer Education for high school students and studied the effectiveness of the lessons. The purpose of the study was to present information by new means of using an audio visual aids and TV in conjunction with prepared exercises for the viewers of the presentation. The sample of the study was selected from the high school students of New York city. The major findings indicated that the instructional video-tape recorded lessons proved effective among the students. The students showed great interest in the instructional video-tape recorded lessons. The testing instruments were pre-test - post-test, 't' test, observation, etc. The major findings indicated that the efficacy of the video tape is established fairly well. The cost analysis shows that the production of the package has not incurred expenditure, there is need for teacher made software so that the programme of educational TV would become a highly participative with a built in feed system.

Hiryur (1986) evolved Video Instructional Package to develop awareness on the changing environment of Baroda city among the higher primary school students. The objectives of the study were to develop a VIP to present the

content on the changing environment of Baroda to higher primary school students and to establish the effectiveness of the VIP in terms of the opinion of experts on various aspects of the package and in terms of the achievement of instructional objectives through a field tryout and cost effectiveness. The sample was fifty five students of Standard VII from the primary school of Baroda city. The testing instruments were pre-test, post-test, 't' test, etc. The major findings revealed that VIP was effective. The students took great interest. There is need for teacher made software as they are best judges of what experiences are to be provided and how they should be sequentially organized.

Schwartz (1987) provides a descriptive and conceptual framework for analyzing the involvement of 24 communities in youth produced TV and video in the United. States. It offered a more comprehensive picture of youth produced TV than of non-broadcast video. Information obtained through a variety of means included questionnaire, anecdotal report, published material, lengthy telephone interview and personal visits. The findings are first presented with respect to administrative settings through which programming activities are encouraged. Schools, libraries, non-profit organizations, cable companies and hospitals. Information is given about the goal of the adult coordinators, methods of training youth for TV/video production and samples of the kinds of programmes produced with each setting. The findings were conceptualized according to three models, each identifying major use of youth produced programming according to educators goal, the characteristics of the programmes produced and the background of the participating students. Model 1 "Understanding a medium." The major goals of educators in this modules were to develop media awareness and visual literacy and to give their students an opportunity to create

material which accurately express their points of view. Model 2 "Educational empowerment" representative of a smaller group uses video as a way to help educate youth who are failing in traditional academic settings. Video is geared towards students "at risk" and is intended to get them back to school. Model 3 "Reflection and self expression" found in only one instance has been noticed because of its dramatic innovative use of video.

Woodward (1988), this study was concerned with the measurement of achievement differences between three study groups who were taught how to select, evaluate and utilize instructional media via three difference instructional methods that are: (i) Instructional media utilization package; (ii) Traditional method; and (iii) Traditional method along with motion picture film tactics. The differences measured in terms of learning style evaluated with the learning style inventory. An instructional media experiences, questionnaire and multiple choice test.

The major findings indicated: (i) There was no statistically significant difference (0.05 level) between the mean score achieved on the instructional media utilization test by students who received both informal instruction/reading and instruction from the instructional media utilization package (experimental group 1) and the mean score achieved by students who received only informal classroom instruction/reading concerning the same content (control group); (ii) There was no statistically significant difference (0.05) level) between the mean score achieved on the instructional media utilization test by students who received informal classroom instruction/reading and viewed the motion picture film tactics (experimental group 2) and the mean score achieved by students who received only informal classroom instruction/reading

concerning the same content (control group); (iii) There was no statistically significant difference (0.05 level) between the mean score achieved on the instructional media utilization test by students who received both informal instructional/reading and instructional from instructional media utilization package (experimental group 1) and the mean score achieved by the students who received informal classroom instruction/reading and viewed the motion picture film tactics (experimental group 2); (iv) There was not statistically significant difference (0.05 level) in the mean score achieved on the instructional media utilization test by those students who have had no past experience in the utilization of instruction media; and (v) There was no statistically significant difference (0.05 level) in the mean score achieved on the instructional media utilization test by students regardless of learning style.

Joshi (1991) studied effectiveness of video in educating women of low socio-economic status. The present study was undertaken on fifty women from low socio-economic status families of Baroda city to test the effectiveness of video to impart information on various voluntary organizations working for women. The main objectives of the study were to produce a video film on selected voluntary organizations working for women in the Baroda city to validate the video film produced in terms of its effectiveness in imparting the information regarding the selected voluntary organizations working for women in the Baroda city, to study the suitability of the film in relation to the age, educational level and family size of the sampled women to study the reactions of the respondents towards the educational, audio and visual aspects of the video. The investigation was an experiment with pre-test - post-test design. The investigator followed the following steps in

conducting the experiment: production of the video and the validation of the video. The findings suggested that the video film was effective in imparting knowledge, and it created interest among women in various income generating activities. It can be concluded that: video films can be effective in imparting knowledge to the women in non-formal education, video films can be produced on the content relevant to the needs of the various groups of women so that they may be well accepted as one of the effective media for education. Since women have shown high interest in income generating activities, such activities can be taken up in various adult education centres run by Home Science Education and Extension Department and other agencies.

Purushothaman (1994) studied the effectiveness of teacher - controlled interactive video for group instruction. The main objective of the study was to develop a teacher-controlled interactive video programmed and find its effectiveness. The script for the video lesson was prepared on the topic 'psychology of learning' on each of ten selected psychological principle a problem situation was presented followed by an analysis of the probable causes and the suggested approach to be taken. Three random groups of size thirty each consisting of secondary teacher education level were selected. For group one the interactive video treatment was given. For group two there was introduction for 10 minutes after which the video lesson was shown at a stretch which took twenty five minutes followed by a twenty minutes discussion. For group three the traditional lecture-cum-discussion method took nearly one hour. At the end of the treatment all the three groups were given a post-test on psychology of learning. It is found from the analysis of variance of pre-test scores that there is not any significant difference between the mean scores of the groups at 1% level.

The major findings suggest that the teacher controlled interactive video technique resulted in better academic achievement compared to the other two techniques under study. This study also revealed a significant factor viz. the indispensability of a teacher along with the innovative technique of video assisted learning. The teacher's role when combined with a validated video lesson is able to produce the most desired effect on learning. It can be concluded that: Though the interactive video system is effective when it is used as a learner - controlled delivery system for individualized instruction, the densely populated classrooms in India have to choose the teacher-controlled interactive video system in which learner interacts with the video through the teacher. However in the years to come, the ideal interactive video system should become functional so that the learners are also able to gain access to the interactive video processes.

In these studies contents like consumer education, environment and psychology of learning were included. Samples were primary and secondary schools students, teacher trainees and low socio-economic status women. In these studies major findings indicated that there is need for teacher made software for the production of educational television programmes. Instructional video created media awareness in students. Educational video proved effective in imparting knowledge. Interactive video system proved effective.

2.8. Studies Concerning Correlates of Achievement

Here an attempt has been made to present a review of some important studies concerning correlates of achievement.

Kumari (1983) studied relationship between socio-economic status and conservation of number and substance in Delhi school children. The findings indicated that socio-economic status was highly and positively related with the manifestation of conservation of number. Socio-economic status was highly and positively related with manifestation of conservation of substance.

Pal (1984), the investigation was designed to study factor analysis-cum-factorial study of socio-psychological variables related to scholastic achievement of higher secondary school - going pupils. The findings of the study were 'socio-economic status did not play any role in further acceptance and avoidance.[1] Maximum magnitude of mother acceptance was revealed by the children of middle socio-economic status where as the low socio-economic status group displayed minimum magnitude.[2] The maximum magnitude of further concentration was seen in males belonging to low socio-economic status where as males of high socio-economic status displayed the minimum socio-economic status displayed the minimum magnitude of the same.[3] Socio-economic status did not play any role in non-verbal as well as total intelligence. No significant effect of interaction between scholastic achievement and socio-economic status on intelligence was found.[4] There was no significant effect of interaction between scholastic achievement, sex and socio-economic status on intelligence of students.[5] Socio-economic status had a significant impact on aspiration. Pupils from low socio-economic status displayed the maximum magnitude of aspiration, while its minimum magnitude was seen in pupils of high socio-economic status.[6] Males belonging to middle socio-economic status had maximum magnitude of aspiration whereas females of high socio-economic status displayed minimum magnitude of the same. Both males as well as females of

middle socio-economic status surpassed their high socio-economic status counterparts in aspiration and in both the socio-economic status classes, males promoted aspiration more in comparison to females.

Rajput (1984), the investigation was designed to study academic achievement of students in Mathematics in relation to their intelligence, achievement, motivation and socio-economic status. The findings of the study were: (i) Intelligence affected the achievement of students in Mathematics significantly at all the three levels i.e. high, average and low; (ii) The socio-economic status of the children affected the achievement of students in mathematics. The high socio-economic status group and the average socio-economic status group of students did not differ significantly on achievement in mathematics. Achievement of high socio-economic status and low socio-economic status students in mathematics differed significantly. Average and low socio-economic groups differed to give significant results on their achievement in mathematics; (iii) The double and triple interaction effects between the variables of intelligence, achievement, motivation and socio-economic status were not significant.

Misra (1986), the investigation was designed to study the influence of socio-economic status on academic achievement of rural and urban high school students. The main findings of the study were: (i) There was a positive relationship between socio-economic status, and academic achievement of the students; (ii) There was a positive relationship between the intelligence test score and academic performance of the students; (iii) Intelligence positively affected academic performance of the students; (iv) The academic achievement of the rural students was lower than the urban

students; (v) The academic performance of girls was superior to the performance of boys.

Mehrotra (1986), studied the relationship between Intelligence Socio-Economic Status, Anxiety, Personality Adjustment and Academic Achievement of high school students. The main findings of the study were: (i) Both for the boys and the girls there was an inverse relationship between level of anxiety and academic achievement; (ii) Both for the boys and the girls there was a positive relationship between socio-economic status of the family of the students and academic achievement; (iii) There was a positive relationship between intelligence and academic achievement; (iv) There was a positive relationship between level of adjustment and academic achievement; (v) In general, the girls had a comparatively higher level of anxiety than the boys.

Gupta (1987), studied relationship between locus of control, anxiety, level of aspiration, academic achievement of secondary students. The study was a descriptive survey with the composite characteristics of inter-group comparison, correlational and prediction studies. According to the major findings, anxiety was found to have a significant negative correlation with academic achievement for the total sample, arts and science groups, boys and girls, boys of arts group and girls of science group, science girls of the middle socio-economic status, internal boys of the arts curriculum, and external girls of the arts curriculum. Socio-economic status was found to have a significantly positive and correlation with academic achievement for the total sample. All the four variables viz. locus of control, anxiety, level of aspiration and socio-economic status predicted academic achievement but socio-economic status and locus of control were found to be

the best predictors. Academic achievement and anxiety differentiated the maximum number of groups.

Narang (1987), the investigation was designed to comparative study of the socio-economic and Home factors affecting the academic achievement of boys and girls (10 and 11 years) in urban and rural areas. The study was employed descriptive research design and survey method to study the effect of the current or immediate factors on the students academic achievement. The major finding of the study indicated socio-economic status did not affect academic performance in city, town and village areas.

Sharma (1991), studied the relationship of cognitive style with anxiety and academic achievement for secondary school students of nation city in Himachal Pradesh. Anxiety was measured with the Hindi version of the Spielbeger, Sharma and Singh 1973. It was found that anxiety was related to field independent and dependent pupils. Study has shown that field independent and field dependent pupils were not found to differ from each other on anxiety.

Pillai (1994) studied concerning achievement in Biology as affected by sex, locale, cognitive style and approaches to studying. The objective of this study is to explore whether variations in achievement in Biology depend on variables like sex, locale of residence, cognitive style and approaches to studying science. The sample consisted of 700 secondary school pupils in Kerala. Four way ANOVA with 2 x 2 x 3 x 2 factorial design was used to study the main and interaction effects of the four independent variables on the criterion variable. Achievement in Biology dependent on

locale, cognitive style approach to studying but not on gender nor mode of studying.

Venugopal (1994) studied intellect profile and achievement of middle school pupils. The objective of the study was to find out the influence of intelligence on achievement among pupils at the middle school level. Guildord's structure of intellect model was adopted for assessing the pupil's intelligence. An achievement test was constructed by the investigator. The sample was selected by multiple random sampling technique. The tests were administered to the sample after a pilot study ANOVA and pearson's product moment correlation were utilized for statistical interpretation. There was positive and significant relationship between intelligence and achievement.

Some of the studies concerning correlates of achievement have been summarized in brief as follows:

Sudame (1973), Reddy (1973) found positive relationship between intelligence and academic achievement. Salunke (1979) found socio-economic status was uncorrelated with academic achievement, but educational facilities and emotional happiness in the home related to achievement. Aggrawal (1973) found interest and reasoning factors contributed to achievement. Lalithama (1975) found intelligence, study habits, studying lessons daily, private tuition are correlates of achievement. Rai (1974), Jain (1979) found I.Q. related with achievement. Pal (1982) showed a correlation between reasoning, speed, problem-solving and achievement. Sharma (1987) found high achievers of scientific stream were significantly superior to the low-achievers in both verbal and non-verbal intelligence,

but no difference in literary and commercial streams. Singh (1992), Bhourasker and Mohapatra (1992) found positive correlation between intelligence and academic achievement.

Mathur (1963) found socio-economic status related with educational backwardness. Prakash Chanda (1975), Khanna (1980) found positive correlation between socio-economic status and academic achievement. Mishra (1992) found children of higher educational level parents had shown better performance. George and Spindler (1971) concluded that failure of children in class was mostly the result of forces outside the school. Tamir (1989) found home environment had a significant effect on achievement. DWivedi (1983) found that socio-economic status significantly affected achievement in biology of higher secondary pre-medical students when taught through linear programme. In the study by Das (1975) which was conducted in West Bengal, the socio-economic status was one of the primary factors responsible for low achievement in general science. Studying the relationship between certain psycho-sociological factors and achievement of student-teachers in teacher training institutions of Andhra Pradesh, Gopalacharryulu (1984) showed that socio-economic status and caste influenced the total achievement as well as achievement in theory and practicals, taken in separately, of the student-teachers.

In these studies variables like socio-economic status, intelligence, anxiety, personality, adjustment, home factors and psychological factors were included to study its relationship with academic achievement of different level students. It was found that socio-economic status affected the achievement of students in mathematics. There was a positive relationship between socio-economic status and academic achievement of the

students. The academic performance of girls was superior to the boys. Both for the boys and the girls there was an inverse relationship between level of anxiety and academic achievement. There was positive relationships between intelligence and academic achievement, between level of adjustment and academic achievement. I.Q. related with academic achievement. There was correlation between reasoning, speed, problem solving and achievement. It was found that socio-economic status related with educational backwardness. Socio-economic status and caste influenced the academic achievement.

2.9. Implication of These Studies on the Present Study

Reviewing the researches in the field of education in India and elsewhere, seems quite clear that use of educational technology is gathering momentum and the various teaching techniques at almost all the levels of education are undergoing a radical change. Obviously, higher or university education too, is trying to make a head way towards a variety of methods and materials for teaching different subjects.

Educational practitioners have turned their faces towards teaching technology, where researches showed encouraging findings. Developing different instructional media is one such finding which when used for different age groups, subjects and situations, ensures better learning. Probing deep into such attempts the impression one carries is that the researches have most of the time tried to compare the different kinds of teaching techniques to establish the effectiveness of one over the other in the given context.

Reported comparative studies concerned with different instructional media have proved that audio vision and other instructional media were more effective than the traditional method of teaching, one in the teaching of biology, science and nutrition. This suggests that there is a need for further exploration in the area of research. Majority of the studies were concerned with evolving multi-media strategies in the field of education and extension of Home Science education, studies concerning educational television in the field of education and extension of Home Science education. Through televised instruction students gain knowledge in a positive direction concerning creativity, mathematics, language development, Home Science, health, hygiene, nutrition, education than social studies, social and legal aspects.

Studies on the use of filmstrips indicated that with the help of filmstrips all topics in General Science can be effectively taught so far concerned of primary school level. Even in the subject like History it is possible to develop programmed learning material.

Studies concerning relevant content indicated that primary school students were under nutrition. Conduct of the study concerning impact of nutrition education programmes on the students of elementary schools developed better habits and attitudes of the students towards food. Study concerning relevant content create consciousness in the students concerning nutrition education.

Studies concerning efficacy of the instructional video indicated that teaching through instructional video is a promoting technique for enhancing the effectiveness of the teaching-learning process. Video tape feed back

increase congruency between students and teachers, perception on the content. Video assisted instruction was as effective as live instruction in terms of student's achievement. Students in the video assisted instruction group made significance long term positive gains in their attitude towards the content.

Studies concerning correlates of achievement indicated that the academic achievement was related to intelligence, anxiety, personality adjustment, Home and psychological factors. There was correlation between reasoning, speed, problem solving and achievement. There was positive relationship of academic achievement with socio-economic status, intelligence and level of adjustment. There was inverse relationship between level of anxiety and academic achievement. The academic achievement of female students were superior to the male students. Socio-economic status and caste influenced the academic achievement. Socio-economic status related with educational backwardness.

Overall findings of the reported studies concerning educational television in the field of education and education and extension of Home Science education revealed that cognitive learning from televised instruction is more effective. The children acquired more information related to educational TV programme. Findings related to the studies concerning instructional video indicated that the video film was effective in imparting knowledge and it created interest among the learners.

Many investigator studied relative effectiveness of video with conventional method of teaching. It was found that video instructional was effective in many units in various subjects. Students also showed greater

interest in instructional video. Studies on video instruction at elementary school level were very less in India. Few researcher developed video instructional package for college level. This shows that there is an urgent need for such an effective media for elementary school level. There is need for teacher made software so that the programmes of educational TV would become a highly participative with a built in a feed back system. Educational video programmes can be provided on a content relevant to the needs of the various groups of the students, so that they may accepted as one of the effective media for education. The review of related literature has really helped the investigator for his present study.

Though TV is a powerful means of communication, there is need to be prepare quality educational TV programmes. There is need to systematize mechanism to provide feedback to the producers of educational TV programmes. Concerning nutrition education, TV programmes are not qualitative. There is need to motivate the rural people to watch educational TV programmes. Timings of the programmes is not suitable to them.

Development and tryout of video instructional package has its own advantages as stated in earlier chapter. The use of video instructional package is preferred academically by the students. As the students are familiar to watch the video, it must introduce at all levels of education. The psychomotor learning through video instructional package proved effective. There is additional unexpected outcomes favouring the use of video instructional package. The students show great interest in video instructional package. There is need for the teacher made software so that video instructional package would become a highly participative with a

built in feedback system and it would enhance the scholastic achievement of the students. There is need for the teacher made software as the teachers are the best judges of what experiences are to be provided and how they should be sequentially organized.

It is necessary to develop and tryout of video instructional package in the nutrition education at primary school level as the students are not nutrition conscious. There is an urgent need to create awareness concerning nutrition education at primary school level students through a well planned educational activities with the help of video technology. Hence investigator is interested to develop and tryout of video instructional package to compare the effectiveness in terms of students achievement.

Nutrition is one of the major aspects of the health of human beings. The primary school level students are not nutrition conscious. There is need to develop an awareness concerning nutrition education through promotion of health and nutrition education that encourages the students to alround development.