Chapter - II

Review of Related Literature

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REVIEW OF RELATED LITERATURE

Research takes advantage of the knowledge which has accumulated in the past as a constant human endeavor. It can never be under taken in isolation of the work that has already been do we on the problems which are directly or indirectly related to a study proposed by a researcher. A careful review of the research journals, books, dissertations, theses and other sources of information on the problem to be investigated is one of the important step in the planning of any research.

2.1.1 Purpose of the Review

Review at the related literature, besides, allowing the researcher to acquaint himself with current knowledge in the field or area in which he is going to conduct his research serve the following specific purposes.

➢ The review of related literature enables the researcher to define the limit of his field.

➢ BY reviewing the related literature the researcher can avoid unfruitful and useless problem areas.

➢ Through the review of related literature the researcher can avoid unintentional duplication of well established findings.

➢ The review of literature gives the researcher an understanding of the research methodology which refers to the way the study to be conducted.

➢ The final and important specific reason for reviewing the related literature is to know about the recommendations of previous researchers listed in their studies for further research.

2.1.2 Meaning and Importance

The existence of the present is always rests on the foundation of the past. Therefore it is said that effective research is based upon the past knowledge. While reviewing all the major studies of the past, the researcher's keen interest is to find out whether any satisfactory study had been done to influence or interrelate with present

topic of investigation. This helps in clarifying concepts and also makes the propose of the study clear and evident.

Barge (1963) said " the review of the related literature is a most for scientific approach and is restored to by and large. By all investigations in all areas of scientific research. One can't develop and insight into the problem to be investigated into unless and units one has learnt what others have done and what remain to be done in a part related literature forms the functions upon which all work can be built."

According to keslinger " Review of related literature works as a guide post not only with regards to the quantum of work already done in the field but also enables us to perceive the gap and lacuna in the concern field of research."

Research on Multimedia Education

As computer technology becomes more accessible, we increasingly encounter products classified as multimedia documents. These documents are used in electronic format and can include text, sound, graphics, animation, video, colour, and interaction with the user. Some researchers reserve the term multimedia for electronic documents that have an intrinsic linear design and use the term hypermedia to refer to documents that incorporate a planned non-linear organization.

Multimedia documents provide a means of communicating and storing information. Since such documents are use in electronic format only, many variations in viewing result as each user controls the order and manner of interacting with each element in the document. In addition, multimedia documents can also be designed to receive information from the reader and process in to provide individualized responses. This interactivity adds a new dimension to the reading/writing process and the capabilities of reading and writing.

In US, the ISTE National Educational Technology Standards (NETS) Profiles describe execrations of students completing various grade levels (International Society for Technology in Education). Here are a few multimedia examples:

➢ (Prek-2). Use developmentally appropriate multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias) to support learning.

➢ (Prek-2) Create developmentally appropriate multimedia products with support from teachers, family members, or students partners.

➢ (grades 3-5). Use technology tools (e.g. multimedia authoring, presentation, web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.

➢ (Grades 6-8). Design, develop, publish, and present products (e.g. web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.

2.1.3 It-Assisted Project Based Learning (Pbl)

Multimedia brings a "two for the price of one" dimension to project-based learning. Students using multimedia in PBL learn both the IT and the disciplines being focused on in the BPL lesson. Project-based learning has long been a part of the repertoire of many teachers Multimedia tools provide a rich environment for conducting PBL with students. A Multimedia based PBL lesson can easily include multiple goals. A good IT-assisted PBL lesson is apt to include goals listed below.

➢ *Expertise*. The project has a goal of students gaining increased Knowledge and skill within a discipline or an interdisciplinary content area. Often students gain a high level of expertise within the specific area that they are studying.

➢ *Research*. The project requires use of research skills and helps students to improve their research skills.

➢ *Higher order thinking skills*. The project is challenging and has a focus on students improving their higher order thinking skills.

➢ *Information technology*. Students increase their knowledge and skill in making use of information technology to carry out the work in a project. A Project

may include a specific goal of students acquiring new knowledge and skills in information technology.

➤ *Engagement* . Students are actively and appropriately, engaged in carrying out the work of the project, the students are intrinsically motivated.

➤ *Community of Scholars.* The entire class-students, teacher, teaching assistants, and volunteers-becomes a community of scholars, working together and learning form each other. Often this community of scholars expands to include parents, students from outside the class, and others.

Multimedia and school Reform

Typically, multimedia plays two roles in school reform models.

➤ Students learn to make use of multimedia as an aid to retrieving information from multiple sources. Students learn to learn from multimedia-based computer-assisted learning environments.

➤ Students learn to develop multimedia materials, especially as a component of project-based learning that is rooted in constructivism and in cooperative learning.

Many School reform models focus on a significant restructuring of the classroom. They propose a shift from a teacher-centered didactic model to a learner-centered constructivist model. Most type of school reform models recognize that multimedia brings a new dimension to reading and writing, and that students need to develop basic skills in information retrieval in multimedia environments. There is substantial research supporting constructivism and cooperative learning.

2.1.4 Research conducted in India

• Basu, M.K.(1981). Conducted ˙ Effectiveness of multimedia programmed materials in the teaching of physics, Ph.D. Edu. Kal.U. The main purpose of the study was to wake an appraisal of the relative effectiveness of multimedia programmed instruction and programmed class teaching on the criteria of immediate achievement and retention of a group of subjects of three level of ability. Objectives of the study were: 1. To develop the programmed learning materials on light in school on four different style- semi programmer. programme

and hybrid programme. 2.To develop instructional material for the strategy of programmed class-teaching and to study effectiveness. 3.To develop a programme package using each style of programmes in multimedia conjunction with audio visual media. 4.To compare the relative effectiveness of different strategies of instruction employing multimedia programmed material and programmed class teaching on the criteria of immediate achievement, retention and delayed retention. 5.To study the interaction effects of instructional strategies abilities and occasion (Immediate learning retention and delayed retention. Major Finding of this study were: 1.There was a significant difference among the different strategy means the criterion on overall achievement. It was found that on the criterion of overall achievement the multimedia semi programmed instruction was better than the strategy of programmed learning. The multimedia linear programmed instruction was better than the multimedia semi programmed instruction. The multimedia branching programmed instruction was better than the multimedia linear programme instruction and the multimedia hybrid programmed instruction was better than the multimedia branching programme instruction. 2.The strategies of multimedia programmed instruction enabled learner to reach the level of mastery learning(mean score varied between 80.00 & 86.00 out of 100) 3.It was found that a significant difference existed in the achievement through the different strategies due to difference in ability.

- Desai K.V. (1985) An investigation into Efficacy of different instructional media in the teaching of science to the pupils of class VII in relation to certain variables, Ph. D. Edu., SPU. ● The objectives of the study were: 1.To compare the achievement of pupils in science learning through different instructional media and the traditional way of teaching. 2.To compare the achievement of pupils in science learning through the programmed learning approach and the traditional way of teaching.3.To compare the achievement of pupils in science learning through slides with discussion approach and the traditional way of teaching.4.To compare the achievement of pupils in science learning through the experimental approach and the traditional way of teaching.5.To compare the achievement of pupils in science learning through the programmed learning approach and slide with discussion

approach. 6.To compare the achievement of pupils in science learning through the programmed learning approach and the experimental approach.7.To compare the achievement of pupils in science learning through slides with discussion approach and the experimental approach. • Major Findings of the study were: 1.The programmed learning approach was more effective than the traditional way of teaching science.2.The slide with discussion approach was more effective than the traditional way of teaching science.3.The experimental approach was more effective than the traditional way of teaching science.4.In the teaching of science the experimental approach was the most effective of all approaches.5.The Programmer learning approach & slides with discussion approach were equally effective.6.The use of instructional media indicated the possibility of improvement in the methodology of science teaching, raising secondary schools and development of taste and interest in the younger generation for the subject of science.

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

• Kothari R.G.(1985) An investigation in to efficacy of different instructional media in the teaching of mathematics to the pupils of class IX in relation to certain variables, Ph.D. Edu. SPU.• The objective of the study were :1.To investigate the efficacy of instructional media I (visual projection) over instructional media-II (activities and experiment) in terms of achievement.2.To investigate the efficacy of visual projection over programmed learning material.3.To investigate the efficacy of activities and experiments over programmed learning material.4.To investigate the efficacy of visual projection over the traditional method to teaching.5.To investigate the efficacy of activities and experiments over the traditional method of teaching. 6.To investigate the efficacy of programmed learning material over the traditional method of teaching in terms of achievement.• Major findings of the study were:1.Visual projection, activities and experiment were equally effective for unit-1 while visual projection was superior to the activities and

experiment approach for unit-II.2. Visual projection was superior to programmed learning material for unit-I, while they were equally effective for unit-II.3.The approach of media activities and experiment was superior to programmed learning material for unit-I but they were equally effective for unit-II. 4. Visual projection was superior to the traditional method of teaching. 5.The result clearly indicate that the instructional media I, namely visual projection, was comparatively more effective than any other media like activities and experiment or even programmed learning materials. The low achievers were comparatively more benefited by programmed learning material than the high and average achievers.

• Krishnan , S.S.(1981)Development of multimedia packages for teaching a course on audio visual education. • The   objectives   of   the   study were:1.Develope a multimedia package for teaching a course on audio-visual education for the instructor training programme. 2.To find the effectiveness of the multimedia package in terms of achievement of trainees and change in attitude of the instructor trainees to wards the multimedia package and. 3.To study the feasibility of the multimedia package in terms of time and cost for the instructor training programme.• Major findings of this study were:1.98 % of trainees obtained more than 80% of the marks on the final post test. 2.The mean percentage of the post-test scores varied from 81.41 to 90.46.3.The mean gain in the total scores for all the modules was found to be significant at 0.01 level.4.The mean gain scores of knowledge comprehension and higher mental abilities were found to be significant at 0.01 level. 5.The feasibility of the multimedia package was established in terms of cost involved in reproduction of the various resource materials and the time scheduling in an actual institutional set. up.

The implication of the study was that multimedia packages in modular form could be used for training programmes in vocational education.

• Kapadia (1981)The impact of television on students learning an exploration. The study focuses on the impact of television on students learning. Objectives of this study were :1.To find out the impact of television on students learning. 2.To find out the comparative effectiveness of the telefilms and the tape

chart programmes, and to get the opinion of students and teachers regarding the television programme.• Major Finding of this study were : 1.significant improvement had been achieved after the treatment with the telefilm . It was found effective for self learning in both the groups. It showed a significant gain in the spot test as well as in the retention test scores.2.The telefilm was found more effective in both the groups than the tape-chart programmes in terms achievement scores as well as retained knowledge .3.It was found that television had an impact which affected study habits it was also found that television was not considered as an obstacle in the study.4.Seventy seven percent the student opined that television motivated self learning.5.Television had no obverse impact on the attendance of the students in the school.6.The Social relations of majority of the students had been disturbed by television.7.Majority of the student felt that their educational interest was satisfied by television.

• KAUR R.(1981)An inquiry into the effectiveness of self-instructional Audio cassettes is developing teaching skills among student. Teachers in a three phased study. Ph. D. Edu. pan. U. •Objectives of this study were:1.To develop instructional materials for the skills of probing questioning, explaining and illustrating with examples.2.To prepare Audio cassettes of the instructional materials prepared by the investigator for the above mentioned teaching skills.3.To develop the skills of probing questioning explaining and illustrating with examples through self instructional Audio cassettes, and to examine the effect of self-instructional Audio cassettes on the general teaching competence of student teachers.• Major Finding of this study were :1.Teachers of both the experimental groups made continuous progress component. Wise and as a whole in the skills of probing questioning explaining and illustrating with examples.2.The traditional techniques of teaching also helped continuous progress in the performance of student teachers.3.The self – instructional Audio- cassettes were effective for developing different teaching skills.

• Kumar, B.N.(1981)An experimental study of the relative effectives of three methods of instruction exposition method. Programmed learning method, and

multimedia method in Science Education, Ph.D. Edu., Kur..• Objectives of this study were:1.To find out the relative effectiveness of the three methods of instruction expository method, programmed learning method and multimedia method.2.To study the relative retention in learning through these three methods.3.To develop a programme in branching style on the selected unit of content in biology and to develop multimedia text on the programmed content.• Findings of the investigation were :1.The multimedia method was more effective than either the programmed learning method or the expository method .2.The programmed learning method was more effective than the expository method.3.Retention in learning by the multimedia method was higher than by the other two methods.

• Passi, S.K. and Pal, H.R.(1982)Preparation of a multimedia instructional module for developing the skill of observing classroom behavior through Flanders Interaction analysis category system, (FIACS) Independent study, system. Problem: It aims to study the effect of multimedia instructional module for developing the skill of observing classroom behavior through Flanders Interaction Analysis category system. •Objectives of this study were: 1.To prepare instructional Material for developing skills of observing classroom behavior through FIACS and to study the effectiveness of the instructional materials in terms of the achievement of trainees on the criterion test and favorable opinion of trainees on different materials.

•Major Finding of this study were: 1.The experimental group studying through instructional material obtained a significantly higher mean score on the criterion test than the control group. The treatment was found effective in developing classroom observation skills.2.The reaction gathered during the study indicated a favorable opinion by the objectives, examples contents language, learning exercise, glossary, general appearance and cartoons.

Computer Assisted instruction and personalized system of Instruction

Looking at the trends all the world over, it is expected that Indian researchers would into computer hope that more enthusiastically. One can only hope that this fertile field will not go notified and many more studies would be taken up in this area.

Singh R.D. Et Al. (1991)

Look up the study to see the effectiveness of computes Assisted instruction (CAI) in teaching mathematics. He found that students who used the computer scored significantly higher than those tough through   the conventional method.

Jeyamani. P. (1991)

Developed a computer Assisted instruction (CAI) package in physics for class XI students. The experimental group received CAI and after the experiment it was found that the experimental group performed better on the post test. The differences were insignificant in terms of sex and medium of instruction.

Rose, A.S.V. (1992)

Prepared the software for CAI. This was used along with the without a trainee support system for teaching under achievers. The results were positive. However CAI used in conjunction with the trainee support system proved to be more beneficial to the under achievers.