Chapter No 2

REVIEW OF RELATED LITERATURE
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The necessary background for formulating the problem, objectives and hypotheses of the study has been provided in the previous chapter i.e. in Introduction.

Further, to put the problem in a proper perspective, the review of related literature is presented in this chapter. This will not only provide the state of the art in the area under investigation but also point out the gaps that exist and the direction it should take along with providing the necessary background in the light of which the results of the present study are to be interpreted.

Although it was not possible, on the part of the investigator to get access to the entire published and unpublished researches in the field, yet an attempt has been made to review the available literature in the area under investigation in an exhaustive manner. The same follows:

Kaur, S (2010), Effectiveness of Computer assisted instructions (CAI) in teaching of chemistry at secondary level.

The present study has substantially established that CAI significantly improves the performance and learning achievement of the students of chemistry. In present times, the computer education has been introduced at the school level. Teachers should use computers as media of instruction in classroom. CAI can be arranged to be presented in large classrooms as it provides maximum amount of variety and flexibility by maintaining the quality and quantity. Chemistry teacher should be acquainted with the use of variety of methods and procedures for teaching. Teachers should be provided with proper training. CAI
learning modules can be used along with other methods of teaching for other subjects also.


The study concludes that multimedia assisted teaching provides many facilities in changing the methodology and rectifying the mistakes and make it effective. It may be used at all levels, transferred as self learning materials and it may be used as learning material. Gain score of the conventional method of understanding of pedagogical technique is 8.2%. Gain score of multimedia assisted teaching in understanding the pedagogical technique is 58% and it proves more impact in the innovative multimedia assisted teaching in understanding the pedagogical technique.


The results of the study revealed the superiority of multimedia package SLM over traditional method. Therefore, it is more psychological to view this as a high individualized instructional process for better learning. Simultaneously the problem of indiscipline can be solved very easily by creating an atmosphere for learning.

Raj D U (2010), Effectiveness of computer assisted learning multimedia on science achievement

Teaching is a simulation, guidance, direction and encouragement of learning. So by using CAL-Multimedia technique that incorporates simulation and animation, students’ conceptualization can be enhanced
by providing concrete ideas for the abstract science concepts. CAL strategy has the capacity to provide interesting, joyful learning environment and helpful in providing better understanding to the students. Thus, the quality of science education and students achievement could be definitely of using and increasing the retention of knowledge and to develop interests in science.

Emily Donnelli, Amber Dailey, B. Jean Mandernach (2009), Toward a Philosophy of Multimedia in the Online Classroom: Aligning Multimedia Use with Institutional Goals.

Institutions desiring to move their online programs to the next generation in innovation often focus their efforts on multimedia development. Because multimedia is now a common benchmark for online course content, institutions encounter the paradox of multimedia inclusion, being forced to consider not only their technological resources but also how multimedia will affect their culture of teaching and learning. As such, the effective integration of multimedia is likely about everything but multimedia; multimedia incorporation has much more to do with institutional culture than with technological tools, faculty education, and infrastructure. Although the literature on multimedia in online learning presents compelling arguments for the educational value of multimedia, this information must be filtered through the lens of the particular institution’s culture and mission. Such an examination will enable institutions to determine a successful, sustainable approach to the integration of multimedia in online courses. The following integrative review presents empirical guidelines and a sequential model to assist universities in creating a workable multimedia philosophy framed within their particular

This study investigated the effects of multimedia presentations on the efficiency of learning scientific information (i.e. information on basic anatomy of human brains and their functions, the definition of cognitive psychology, and the structure of human memory). Experiment 1 investigated whether the modality effect could be observed when the learning material contained auditory information and visuals altered in complexity, and whether the redundancy effect is caused by redundant information or by interference in information processing. In Experiment 2, verbal-only information was used to examine whether subjects could perform better with auditory rather than with on-screen textual information, and whether the length of the verbal information would exert an effect on learning. The results of Experiment 1 contradicted the prediction of the modality effect in that subjects learned no better or even worse with the audio-visual format of learning material than did subjects with the visual-only one. Besides, redundant information per se did not impair learning, which suggested that the redundancy effect could be rather caused by the interference in information processing. The results of Experiment 2 indicated a negative effect of auditory information on learning regardless of the length of the verbal information. No evidence supported the superiority of auditory instructional mode over the visual one.

Sudhir R. Ghorpade (2008), TEACHING CALCULUS USING INTERNET: SOME EXPERIMENTS AND EXPERIENCES

Experiences of teaching of a Calculus course using screen projections from the web pages of the course or from transparencies are discussed. Pedagogical advantages and disadvantages of this method as well as some technical problems are also discussed.
Gupta, Poonam Rani (2007), Multimedia in education for physically challenged persons

Information and communications technology (ICT) can support learners with physical disabilities by enabling them to access the curriculum alongside their peers. People with physical challenge either temporary or of permanent nature put limitations in learning process of an individual as it can limit accessibility, it can hamper understanding or it may result in slow learning thus making it difficult for such persons to be at par with their peer group. Educational activities such as following a lecture, reading a book, accessing multimedia resources, accessing websites, appearing in the exams (written or oral) becomes an uphill task for physically challenged persons. This paper analysis how ICT can meet requirements of education and employment of physically challenged people. It also explores ways in which ICT especially multimedia can help them perform day-to-day activities.


The UNESCO School Net project, “Strengthening ICT in Schools and School Net Project in ASEAN Setting”, was initiated in recognition of the need to assist teachers in integrating ICT into teaching and to facilitate participation of teachers and students in the Asia-Pacific region in School Net telecollaboration activities. The project was launched in July 2003 and focuses on three subject areas, mathematics, science and languages. School Net activities have been piloted in 24 schools in eight participating countries of the ASEAN (Association of South East Asian Nations) region: Indonesia, Malaysia, Philippines, Thailand, Cambodia, Lao PDR, Myanmar and Viet Nam.
The UNESCO School Net project aims to:

- Explore and demonstrate how ICT can be used in schools to improve the quality of education and better prepare youth for the demands of knowledge societies.
- Test innovative models of ICT use and of ICT-based teacher education.
- Encourage use of ICT in teaching-learning and materials development in schools and other educational contexts.
- Improve connectivity and expand access to the wealth of educational resources available via the Internet.
- Establish and promote School Net in the Asia-Pacific region.

Via the UNESCO School Net project, students engaged with ICT tools to learn science and mathematics in two main ways:

- Innovative ICT supported pedagogy using resources offered by the School Net project via a CD-ROM of interactive resources, lesson plans and associated directory for teachers to explain optimal use;
- Telecollaboration between schools in the School Net participating countries, dealing with mathematics and science topics such as measurements, environmental indicators by carrying out similar procedures in each country; sharing data gathered and discussing results/conclusions.


In recent years, more and more higher education institutions have interests of integrating internet based technologies in the classroom as part of the learning environment. Compared to studies on other
information technologies, users’ behavior towards this type of systems, however, has not been assessed and understood thoroughly. In order to get more experience about human behaviors on multimedia learning environment, we conducted a comparative study consisting of 362 students, which is almost three times the sample size of the previous study, participating to test the theoretical model. Results suggest that TAM is a solid theoretical model where its validity can extend to the multimedia and e-learning context. The study provides a more intensive view of the multimedia learning system users and is an important step towards a better understanding of the user behavior on the system and a multimedia acceptance model.


This article deals with how web-based technology can assist English Foreign Language (EFL) teaching and learning process through storytelling and story recalls. For this, the researchers developed a multimedia Storytelling Website and implemented in one elementary school in Taiwan to test its effectiveness in instruction and in resultant student learning. The study reveals that with the multimedia computer-assisted process, students retained more words, phrases and sentences resulting in greater sentence complexity and language proficiency. Moreover, students also received extra visual and audio stimuli through still pictures, animation, music, and/or sound effects, which not only provide easier access for story recalls but also facilitated students’ creativity in recreating stories. Thus, the results of the study support the significance and the education value of the multimedia Storytelling Website on EFL teaching and learning.

This article describes the designing of multimedia instruction and its advantages in higher education. The researchers conducted a survey among students who used the multimedia instruction in their course. Students involved in the survey found the lessons understandable and systematic, very interesting and very carefully prepared. They felt that these lessons would enable them further independent study. They were enthusiastic about the self-assessment tests, which helped them to find out whether the information learned was right or wrong. The study showed that students were satisfied with this kind of studying and were looking forward to using computer-based multimedia learning material for other subjects as well. The authors claim that the use of multimedia instruction adds variety to the study and increases the quality of an individual's work and the motivation of learners.


This article describes the effectiveness of two kinds of education system, one is a Cyber Assistant Professor (CAP) and another is a Cyber Theatre (CT). CAP has been designed for a self-learning system, which enables interactive communication between virtual teacher and learner. CT has been designed for a 3D-CG story maker. The authors claim that the production of interactive actual videos taken on location as teaching materials is difficult in some cases, but the production of interactive 3D-CG animation teaching materials in CAP is not difficult. They also claim that this technology would make students aware that a computer is not only a tool for browsing information, but also a tool for creating information.

Research into teaching and learning with new technologies is currently a very dynamic, high-profile and relevant area of educational enquiry. Educational institutions are increasingly engaged with integrating technology into the delivery of course materials and in the provision of alternate methods for learning. The extent to which these efforts are based on sound principles established through research and experience is a matter for debate. Research findings validating educational outcomes in the use of new technology are often contradictory, as research approaches tend to lag behind the capabilities of technology. Many studies in educational technology studies show a lack of an appropriate theoretical grounding and regard for scientific empirical testing. This paper examines some historical approaches to researching educational technology, highlighting the weaknesses inherent in these research programs. Some contemporary research strategies are discussed and recommendations for future investigations are made: 1) Evaluations should be performed on already implemented interventions including craft technologies to generate valid hypotheses; 2) The relevant array of theoretical foundations should ground all studies and intervention developments; 3) Alongside technological principles, motivational issues should be considered; and 4) Aspects of the media debate should be reconsidered in light of new research.

Smeeets, Ed. (2005) Does ICT contribute to powerful learning environments in primary education?

In this study, the characteristics of learning environments and the contribution of ICT to learning environments were investigated. A questionnaire was completed by 331 teachers in the highest grade of primary education. Even though 93 percent of the teachers who filled out the questionnaire applied ICT in their classes, the use of ICT in general
remained disappointing, the emphasis being on skill-based applications that fit into traditional views of teaching and learning. Only a minority of teachers used open-ended ICT applications that can stimulate the pupils’ information-processing skills that can contribute to bridging the gap between school learning and the real world. In addition, with respect to curriculum differentiation, the emphasis in ICT use was on remediation tasks for low-achieving pupils, whilst the potential of stimulating high-achieving pupils by means of ICT was neglected by many teachers. Apart from this, whereas four out of ten teachers felt that ICT provides a fair or a substantial contribution to cooperative learning, the use of ICT for supporting cooperative learning was reported to be quite limited. Most teachers do not make use of the potential of ICT to contribute to the power of learning environments. Thus, computers are used mainly to complement rather than change existing pedagogical practice. Male teachers appeared to favor open-ended use of ICT more than female teachers did. The power of the learning environment and the availability of a sufficient number of computers contributed most to the probability of the use of open-ended ICT applications. The study suggests that in order to further optimize learning environments in primary education, teachers should be aware of the potential of ICT to contribute to the power of learning environments and to stimulate pupil’s active and autonomous learning. Moreover, teachers’ skills with regard to the use of ICT as a means to support powerful learning environments should be fostered.


This study investigates issues related to the use of ICT in seven Dutch schools, in which gender and ethnic differences have been identified, namely computer use in and out of school, computer skills,
learning outcomes when ICT is used, pupils’ attitudes towards ICT and their way of working with computers. It found out that gender differences, especially in primary education appeared to be small. In secondary education, the computer attitude of girls seems to be less positive than that of boys, girls and boys take on different tasks when working together on the computer and they tackle ICT tasks differently. Pupils from an ethnic minority background in both primary and secondary education appear to consider themselves to be less skilled ICT users than pupils from the majority population. The study further found that ethnic differences in participation in ICT activities at school in both educational sectors. Pupil from an ethnic-minority background use the computer at school less for gathering information and preparing talks and papers and more for drill and practice. Differences between pupils from an ethnic-minority background and from the majority population in access to certain forms of ICT use out of school are confirmed at school instead of being compensated for. The researchers formulated a number of strategies for a diversity-oriented ICT policy at school level on the basis of the study.


In this study, the effects of non-interactive computer assisted instruction on students’ performance, self-efficacy, motivation and attitudes were examined. Half the lectures presented to two Introductions to Psychology classes were taught in a traditional lecture format and half were accompanied by PowerPoint multimedia. The results of this study pertain to the difference between the students’ subjective and objective performance. The results imply that accompanying lectures with PowerPoint presentations does not significantly affect students’ achievement. Both students’ responses to the attitude questionnaire and their open-ended comments reflected
greater positive attitudes and self-efficacy beliefs when PowerPoint accompanied lectures. The study further reveals that students that received traditional instructions first and then received lectures with PowerPoint did not experience a change in classroom motivation. However, students who were initially taught with PowerPoint and then received traditional lectures became less motivated during the traditional lecture format. The author claims that non-interactive computer assisted instruction yields more subjective effects than objective ones.


Laboratory work is a principal subject in the education of engineering. Laboratory work is important not only to acquire manipulations of the basic measurement apparatus such as a micrometer, testers, an oscilloscope etc. but also to cultivate student's interest in physical phenomenon. The key point, which makes the laboratory work fruitful, is that the students understand the purpose of the subject prior to the laboratory work. We produced a new direction for the laboratory work of the fundamental experiments of optics by means of multi-media and Information Technology that is more lucid and intuitional than the conventional one. Students can experience the laboratory works virtually through the multi-media directions and will understand the whole image of the experiments.

Vegni G., N.Bergomi, and L. Cazzaniga (2005): Computers methods in Physics, a course for future teachers. A five years experience:

We report on a course of “Computers Methods in Physics”; the course is held in the contest of a two years “Specialization School for secondary school Teacher” (SILSIS-MI) of the Milan University, in the branch “Fisica Matematica Informatica”. Admission to this School is at closed numbers and requires a specific “laurea” (higher degree): for our
course, the “laurea” in physics, mathematics, or engineering. We present, analyse and discuss data and written material collected in this yearly course from 2000 to 2004, in five successive activity cycles of the School. The course, which is highly interactive, favors work by groups and is based on the use and critical analysis of computerized tools on Physics topics: Internet sites and educational multimedia materials. Relevant part of the discussion deal with significant aspects arising from the reports, written by students’ groups, as well as individual students’ records and to their answers to the course evaluation feedback questionnaire. The trend of variation throughout the years is also interesting, in particular the raising students profile and competence, with improved course outcome in more recent years.

The results of these 5 years confirm that the course is useful to prepare the would-be teachers. The organization and content have been continuously enhanced on the basis of experience. In particular, in the latest years, we asked our alumni to give a feedback about the course. Once again the answers confirm the course’s usefulness (many students said that the course was among the best attended at the School, and that completely fulfilled their expectations). We gathered some critical observations as well, and we took those into serious consideration, improving the course with time. The data concerning students’ records, coming from questionnaires, show that, throughout the years, the trainees have greatly improved their knowledge and their ability in computer science and in informatics technology. Five years ago, most trainees were unable either to use computers or to appreciate its usefulness in teaching. Now, the majority of the students masters it very well and often uses it already for teaching (even if not always in the very best way). On the other hand, post-graduate students have not equally developed, at the same level, a critical capacity to analyse and to estimate the available material for Physics. We often observe a sort of
superficial approach, permeated by "consumerist habits" set off by non scientific media influence on today's culture. It is necessary for us to dedicate more attention to it in the future and to try to transmit interest for real knowledge and culture.

Kovalan A and N. Balasubramanian (2005) BEST QUALITY ASSESSMENT TECHNIQUES OF WEB-BASED LEARNING RESOURCES IN TEACHER EDUCATION

Web-Based Teaching Learning Process (WBTLP) is a rapidly growing area in Education. Traditional forms of teacher education are transformed, as the Internet becomes a new medium for communication. Traditionally teachers have fulfilled dual roles as presenters of structured information and social agents in the educational process. Students are in need of good interactive resources with learning tools and techniques. Hence, there is a need for training in WBTLP so as to enable the teacher to provide good resources in the web. The web-based learner resources can improve the quality of teacher education by availing various tools and techniques of assessment. The focus of the present paper is to appraise the assessment of web-based learning resources, which helps to provide quality web resources in teacher education. It is also used to help the teacher to have better resources and environment in which teaching takes place. The environment includes the organisation, the learning materials, use of media, delivery methodology and various approaches in details. The assessment process is divided into two parts. The first is a teacher assessment, which relates to interaction and guidance of a teacher with students and the second is a learning resources assessment, which relates to quality of materials and resources of a course.
Stefan Altherr, Andreas Wagner, Bodo Eckert and Hans Jörg Jodl (2004) Multimedia material for teaching physics (search, evaluation and examples)

Finding multimedia material for teaching physics worldwide would seem to be easy at first glance, since there is now a lot of material available. But on closer inspection it becomes obvious that (apart from standard topics) it is very difficult, if not impossible, to find excellent teaching materials. Several representative databases are collected and described here. Only a few of them use an evaluation scheme to judge their content. If the material is evaluated, every organization uses its own list of criteria with its own weaknesses and strengths. Therefore, we want to initiate a discussion to finalize a standardized evaluation scheme and to make this available to physicists and physics teachers. This paper finishes with two multimedia examples we have produced ourselves: about diffraction and about Michelson interferometer.


This study determines the effect that the level of computer technology use in the classroom has on at-risk students’ grades and attendance. The sample for this study consists of teachers from a Northwest Ohio high school. Results of the study indicate that teachers’ technology use and overall technology use have no significant positive effect on the grades and attendance of at-risk students. In addition, the study finds that technology use is low among the teachers in the sample. These results suggest that for technology to be effective and make changes in at-risk students’ grade and attendance, schools must be prepared for technology use in the classroom. The author suggests that leaders need to develop a model that would include a shared vision, entire school community involvement, specific training for staff and time for the training, a full time technology director and time for the staff to
communicate and share among peers for technology to be an effective tool in the classroom curriculum.

**Sutherland, Rosamund. 2004. Designs for learning: ICT and knowledge in the classroom.**

The study explores the relationship between ICT and learning in English schools. It draws on the preliminary results of the Interactive Education Project, which is concerned with learning within the subject areas of English, history, geography, mathematics, music, modern foreign languages and science. It is predicated on the view that ICT alone does not enhance learning. The author argues that much of the hype around e-learning is fundamentally flawed in that it fails to take into account the social, cultural and historical aspects of learning. It misleads teachers who often think that they can devolve the responsibility for learning to ICT alone.


This study analyses the replies given by a group of undergraduates studying Medical Technology at the University of Talca on a questionnaire examining their degree of satisfaction concerning the introduction of new technologies as a support to their learning. The support system used was My WebCT learning platform applied to the teaching of the subject of Clinical Biochemistry. The team of teachers prepared class and laboratory materials, which were posted to the platform in an ordered and sequenced manner. The questionnaire examined five groups of variable: quality, quantity, accessibility, impact and user satisfaction. The results obtained were: Quality - the students responded positively; Quantity - the students reported encountering certain difficulties; Accessibility - good; Satisfaction - a high degree of
satisfaction was expressed regarding the introduction of this new technology; Impact – an improvement was noted in levels of motivation and a better organization in the students' study patterns.


The results of this study show that the use of ICTs is more closely related to gender than the student's year group. In general, it seems that women make less use of technology, while they use it for different reasons to men. Men usually become familiar with technology before women; they use it more frequently in various places (home, the university, etc.) and have a wider knowledge of different types of software. However, what is striking is the differential use made by men and women of technology, as women use the computer more for studying and the Internet for communication (such as email) and many use it for leisure or as a hobby, or for playing games. Men seem to see the ICTs as a leisure instrument, while women see them as a working tool.

Xavier Bohigas, Montse Novell, Xavier Jaén, Juan D. Blanco (2003) Getting Information on the WWW for Educational Purposes: Problems and a Possible Solution

One of the great advantages of the World Wide Web (WWW) is the enormous amount of information it makes available. Nevertheless, URL (Universal Resource Locator) addresses obtained from search engines often have little to do with what users are actually interested in finding. This proves especially problematic when one is searching for educational material. In order to improve on this situation we have designed a search engine that specialises in managing content previously selected from the
InLerncl. The search engine is compatible with both keywords and keyphrases.

**Usun Salih (2003) Undergraduate Students Attitudes towards Educational Uses of Internet**

The aim of this study was to determine the attitudes of undergraduate students towards the educational uses of the Internet. A 27-item questionnaire was administered to 207 undergraduate students at the Department of Computer and Instructional Technologies Education (CIIT') of the Faculty of Education of Canakkale Onsekiz Mart University during the fall 2002 semester.

The five items that met with the strongest agreement from the sample were the following:
1- The Internet is as important as other research tools (n=141)
2- I find using the Internet easier than using the library (n=107)
3- Using the Internet makes learning fun (n=89)
4- I access the Internet more at school than at home (n=80)
5- Knowledge of the Internet is essential for surviving college (n=79)

One hundred and ninety-six students said that they would access their course materials if they were on the Web; 169 of them stated that they would take a class requiring Internet use if given the choice.

**Denice Byrne (2002) A Study of Individual Learning Styles and Educational Multimedia Preferences**

This paper details an experimental investigation into relationships between Individual Learning Styles and Online Multimedia learning resources. The specific conditions of the experiment placed the online educational multimedia
Into an online learning environment called WebCT. The experiment’s sample group used the online resource in a self-directed and self-paced way. Learning styles were identified using a VARK questionnaire and an Index of Learning Styles (ILS) questionnaire. The methods used for the process included design, production and sourcing of suitable course material, which was then integrated into the WebCT structure. Data was collected pre and post treatment utilising online and paper questionnaires, performance assessment tests and WebCT system logs. The software application Statistical Analysis for Social Sciences (SPSS) was used to log, transform and analyse the qualitative data. Analysis of the data determined that students will prefer learning with some types of online multimedia better than others, depending on their individual learning style as identified by the VARK questionnaire but not the ILS questionnaire. These probabilities were tested to a significance level of 95%.


Having recognized the importance of education and the teaching methodology, which plays a vital role, in the teaching-learning process in the modern electronic age, an attempt has been made in this paper to explore some of the important electronic resources, which aid in the teaching-learning process.


This article assesses the factors influencing the use of computer mediated communication (CMC) by teachers in secondary schools. The study compared a group of CMC users with non-CMC users. The results of this study revealed that CMC use could be explained by teaching a language technological innovations, perceived CMC attributes, and observed organizational constraints. It was shown that teaching a
language subject exerted a strong predictive effect on CMC use, although this group of teachers reported a lower degree of technological innovativeness than other teachers. Moreover, the findings suggested that technological innovativeness was the second strongest contribution to CMC use. The study recommended that the effect of technological innovativeness on class use of computers was more significant than personal factors such as age, gender, computer attitudes and computer experience. It also showed that teachers with a high degree of technological innovativeness also seemed to observe less organizational constraints in regards to the introduction of CMC in school.


In this study, two groups (control and experimental) of 15-16 years old students were studied to determine the role of computer simulations in the development of functional understanding of the concepts of velocity and acceleration in projectile motions. Both groups received traditional classroom instruction on these topics; the experimental group used computer simulations also. The results of the study show that students working with simulations exhibited significantly higher scores in the research tasks. The researchers claim that computer simulations could be used complementary or alternative to other instructional tools in order to facilitate students' understanding of velocity and acceleration.


This article considers multimedia from three view points. The first comes from a science theory where the definition of the term and of the environment associated with it is defined. The second point of view is concerned with the knowledge acquisition through multimedia systems and the educational and psychological aspects are considered. The third
point of view gives concrete instructions for designing multimedia systems.

**Darby, J. (1992) The future of computers in teaching and learning.**

This article argues that the main barriers to adoption of computers in teaching and learning are not primarily technical but are organizational and social in nature. The blockages, according to the author are i) lack of information on suitable materials in each discipline, and ii) unwillingness of the authorities to recognize and reward effort put into improving teaching, whether by utilizing or by producing computer based teaching and learning materials; recognition for courseware designers; suitability of existing courseware; and courseware delivery.

**Palaniappan, V.P. (1990) Effectiveness of computer assisted instruction in learning triangles.**

In this article, the researcher investigated the effectiveness of computer assisted instruction (CAI) in learning triangles as compared to traditional method. For the study, two groups of students of the same class were formed consisting equal number of both low and high achievers. It was found that there was significant difference between the two groups in achievement scores. The researcher asserted that learning through CAI enhanced better learning than the traditional method. There was also significant difference between the low achievers of both the groups that indicated that learning through CAI enhanced better performance among the low achievers than the traditional method of teaching. The author thus claimed that there was an overall improvement in performance while teaching through CAI.

The implication of the study is that validated multimedia strategy, with suitable software material can be used to provide instruction in educational technology of one semester duration to post graduate students in education and related disciplines. At the different stages of implementation of the strategies, the student’s attitude towards the multimedia approach went on increasing in favorable directions. The improvement trend was witnessed with regard to discussion sessions.


The feasibility of 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. 98% students obtained more than 80% marks on the final post test. The implication of the study was that multimedia packages in modular form could be used for training programmed in vocational institutions.


As indicated in the title of the study, there was more variety in approaches than in media. She also used a single group, rendering findings difficult to interpret. One note worthy findings of her study was that visual projections with teacher explanation and there with taped commentary were equally effective in terms of achievement. On the bases of her effects and experience she conclude that, for achievement of different instructional objectives, systematically validated multimedia strategy can be implemented at school level without having to spend too much money and time.
Ravindranath M.J. (1982) Development of multimedia instructional strategy for teaching science (Biology) at Sr. Sec. school level.

The instructional strategy was effective to the extent that 70% of the experimental group students obtained 60% and above on the entire unit test and their comprehensive test. Both type of PLM namely inductive and deductive were equally effective as instructional material. The experimental group students performed better than the controlled group on the comprehensive test also on the annual examination conducted by school authority.


The multimedia linear programmed instruction was better than the multimedia semi programmed instruction. There was a significant difference among the different strategy means on the criterion on overall achievement. It was found that the criteria of overall achievement the multimedia semi programmed instructions were better than the strategy of programmed teaching. The strategy of multimedia programmed instructions enabled learner to reach the level of mastery learning.


The teachers who are exposed to the treatment of the self instructional multimedia package course showed significant improvement in all the skill except one. As regard percentage of pupil task, there were significant improvements.