Chapter 2
Review of the Related Literature

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Although it was not possible, on the part of the investigator to get access to the entire published and unpublished researches in the field, yet an attempt has been made to review the available literature in the area under investigation in an exhaustive manner.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


This article focuses on the use of interactive multimedia technology in music education. A study has been investigated during the nine month in which 12 students of 1st and 2nd grade have been chosen. They learn to play the clarinet. The sample of 12 students has been divided into 2 groups consisting of 6 students in each group. 1st group is taught with the technological methods using the coloured pressure mat and instructed through the music paint machine that is an interactive music system. It allows the students to create a digital painting by playing clarinet. On the other hand the other group learn instruction without any technology. Main focus of the study has been to find out the effectiveness of music paint machine in instrumental music. The study brings out significant differences after analysis of data. The pre test and post test was employed for collecting the data.
2.2 Kumar, Sushil (2013), Effect of Multimedia approach and traditional method on retention and academic achievement of science students at secondary school level—a comparative study. Ph.D. Thesis, department of education, Kurukshetra University, Haryana

In this study the researcher has done experimented among three groups of 9th class students each consisting of 30 students. One of the groups has been taught through traditional method of teaching and the other two groups is taught through multimedia technology. The main objective of this research is to access the difference in multimedia approach and traditional method on academic achievements. The analysis of the study concludes that learning from multimedia package is more effective than the traditional method of teaching as the results are very significant.


The study concludes that Multimedia technology is growing very rapidly in the field of education. It enhances the knowledge of students than that of the traditional method of teaching. This study reveals out the effectiveness of traditional method on emotional intelligence and its effectiveness on academic achievement of the of 7th class students. It is an experimental research in which two groups from 7th class have been selected and after analysing the data obtained it has been concluded that the students who were taught through multimedia method of teaching performed better and their scores were far much better than the scores achieved through conventional teaching method.

This study investigates the effect of various teaching Aids on academic achievements in the subject of English at secondary level. It is an experimental study in which 100 students from schools have been selected as sample; self prepared instructional material has been used as teaching aid. Achievement test in English is developed by investigator in which various teaching aids, charts, pictures, three transparencies and models has been used during teaching. The result of this study reveals that the teaching aids has a positive effect on the academic achievement of the students.


The present study has submitted a conclusion that, CAI apparently increases the execution and learning accomplishment of the pupils of chemistry. The computer education has been recommended at the primary level. Mentors should use computers as methods of teaching in classroom as it maintains the quality and quantity providing good amount of variety and flexibility. Chemistry teachers should be aware of using different ways and procedure for teaching. Teachers should be given the required training in CAI learning methods that can be amalgamated with other methods of teachings for the subjects too.


The present study has substantially established the importance of web based learning. It assesses the students towards the use of new technology in current education system. It is an experimental study conducted on 200
secondary schools students. The results has clearly defined that there exist a significant relationship in the attitude of secondary school students towards the use of web based learning in their learning process.


The study describes the effectiveness of computer assisted instruction in the subject of physics. It is an experimental study. The researcher has conducted the research by forming two groups, of XII class in the subject of physics. The students have been divided into two groups. One group is taught through conventional method and the other group through multimedia method. Pre test and post test is also employed before and after the study. The main aim to evaluate the effectiveness of learning through both the methods reveals that there lies a significant difference between the results of both the groups. The experimental group exhibits better results than the conventional group. This study has reveals out that the computer instructions are very much useful in learning the concepts and enhancing the knowledge of the students.

2.8 Kand, Toshar. E-Sources of information and their utility for research in India music PhD-Thesis University of Delhi

This study reveals out the importance of E-sources of information for the research in Indian music. Today the modern world demands the modern perceptive of knowledge. Thus a researcher must know how to operate the modern equipments and modern technology. Knowledge of internet is must for every research it is full of e-sources from which knowledge can be obtained. A proper training is must for all the researchers.

This study clarifies the effect of Micro teaching and use of Multimedia on teaching competence of prospective teachings. The main objective of the study is to find out the significant results of microteaching on the teaching ability of the concerned teachers and to study the effect on teaching and conventional teaching. The sample for the study is the teachers and students. Pre and Post test was employed. From three colleges significant results have been revealed from this study in favour of microteaching and multimedia teaching.


In this study it is found that teaching through multimedia techniques facilitates the transformation of conventional methods, corrects the mistakes and makes it more useful teaching method. This technique can be used at all levels of teaching and also for self learning purposes. The gain scores of traditional ways of understanding of pedagogical technique is 8.2% whereas the gain score of multimedia assisted teaching is 58% that is much more effective than the conventional method.


This study reveals that multimedia package SLM is superior over traditional methods.
• Psychologically it can be viewed as a highly individualised instructional process for improved learning experience and the individuals are more interested in learning through SLM.

• The problem of indiscipline is also be resolved, as the learning atmosphere is proved to be more favourable.


This study concludes that C.A.L.M technique for teaching is much better than the conventional methods.

• C.A.L.M is able study interesting and more palatable for students .Boringness of traditional method is avoided and learning becomes a joyful experience

• Most complicated scientific concepts can be very well explained through these techniques.


This study investigates the effects of multimedia presentations on the ability of learning scientific information like information of human brains and their functions, the definition of cognitive psychology, and the structure of human memory.

• The first investigated experiment shows that there is auditory information and visuals altered in complexity contained the learning material whether the modality effect could be observed or not, and whether the verbosity effect is caused by redundant information or by clashing in the processing information.
In the second Experiment, verbal- was to test only to monitor whether subjects could perform better with auditory rather than with on-screen textual information, if there is any effect on learning because of length of the verbal information. The Experiment of results one oppose the dope effects of the modality in that subjects which are learned with the audio-visual format of learning material comparative to those subjects through which there was no better effects.

Apart from that, redundant information did not hinder learning, which suggested that the redundancy effect could be rather caused by the impedance in information processing. While there was a negative effect of auditory information on learning regardless of the length of the verbal information from the results of Experiment two be taken sustained the superiority of auditory instructional mode over the visual one.


This research proves the Experiences of teaching using screen projections from the web pages of the course of a Calculus or from transparencies are conversed. Advantages and disadvantages of Pedagogical, technical problems as well as some of these methods are also discussed.


The present study brings the effect of computer aided teaching on the achievement in science in relation to intelligence. The objectives have been to assess the intelligence level of student through computer and conventional teaching. After comparing the achievement of low intelligence student taught
through computer and conventional teaching it is revealed that teaching through computer develops more interest in the students for further study.


This research reveals that in recent years, most of the higher education institutions have shown curiosity of integrating internet based technologies as part of the learning environment in the classroom. If we start comparison of studies with other information technologies, the behaviour of users towards this type of systems, however, has not been evaluated and has not been completely understood. A relative study has been administered containing 362 students, in order to get more experience about human behaviours on multimedia learning environment, which is almost three times the sample size of the former study, participating to test the theoretical model. Results describes that TAM is a solid theoretical model where its potency can extend to the multimedia and e-learning context. The study furnishes a more intensive view of the multimedia learning system for the users and is a step forward towards a better understanding of the behaviour on the system and a multimedia acceptance model.


The main objectives of this study are to develop a multimedia package for the acquisition of communicative competence in English among primary school learners and to validate the developed package by ascertaining its effectiveness. To compare the mean scores of the post test for achievement in
grammar, vocabulary and functions in English between experimental and control group learners.

The sample selected for the experimental study is 108, V1 standard learners from two schools in Tiruchirappalli District of Tamilnadu. After the experiment it has revealed out that experimental group who learned the target language through language games, activities and multimedia package scored significantly higher than the control group who learned through the conventional classroom teaching with respect to overall scores. Thus study reveals that multimedia teaching has been proved to be a significant one.


This article is study about how the English Foreign Language (EFL) teaching and learning can be boosted by web based technology just by telling story and recalling it. For this, the researcher has permuted and implemented a multimedia Storytelling Website at a school in Taiwan to test its influence in teaching and after-effect in the learning of student. This research shows that with this process of teaching, students memorized more words, sentences and phrases which resulted in greater sentence convolution and language efficiency. Apart from this students could acquire extra audio and visual provocation with the help of Multimedia.


In this article the researcher has planned a multimedia instructional setup to find out its relevance on the students of higher education. The researcher has conducted a survey among those students who use the multimedia information in their course. This survey proves that the involved
students found the lessons more coherent and analytic, entertaining, very anxiously prepared.

They feel that these lessons would capacitate them for further individualistic study. They are shown anxious about the self-judgment tests, and also they would be able to find out whether the material learned was correct or not. According to this study, students are totally contented with this method of study and also seeking for computer-based multimedia learning material for other subjects as well. According to the authors the use of multimedia instruction inspires the learners and with adding array to the study it also accumulates the features of one’s work.


This article characterizes the importance of two types of teaching methods with the help of computer graphics. Both are interactive and have played three Dimensions, they are cyber assistant professor and cyber theatre. CAP has been planned for a self-learning system, which allows conjoint communication between virtual teacher and learner. For making the lesson plan of story through modern technology a cyber theatre plan is employed. According to the author’s assertion, the formulation of interactive actual videos taken on situation for teaching materials seems to be tough in some cases, but the 3D-CG animation applied in teaching session in CAP proves to be a very easy way of teaching. They further claim that with this technology the student are able to know that the computer is not only an appliance for looking around the information but also meant for composing the information.
2.21 Derek A. Muller, John Eklund and Manjula D. Sharma, (2006) The future of multimedia learning: Essential issues for research

This study shows that the teaching and learning researches with advanced technologies is very vital, high-profile and appropriate area of educational enquiry. Educational institutions are affianced to a great extent with unification technology into the transmittal of course stuff and in the supplies of recurring methods for learning. The magnitude to which these efforts are established on flawless principles rooted through research and acquaintance is a matter for debate.

Research findings approves educational sequel for using new technology are frequently antagonistic, as research drawing near it diminishing the ability to perform of technology. Many studies in educational technology have shown a reduction of a suitable theoretical grounding and curiosity for scientific empirical testing. This paper analyzes some of the historical accession to examine educational technology, highlighting some of the basic weaknesses in these research programs. Some approval for future exploration is made after discussing current research method:

1) Judgments should be performed on already enabled mediation including craft technologies to generate valid hypotheses;
2) Theory should be the base of studies and all the necessary developments in this area.
3) High-tech principles, inspirational issues should be considered side by side.
4) For new researches all the conditions of the media debate should be considered.

This study reveals out the aspects of learning environments and the offering of ICT in the learning environment. The teachers of highest grade of primary education of about 331 in numbers have completed an inquiry. About 93 percent of the teachers, who submerged questionnaire, applied ICT in their classes; the use of ICT in general remained unsatisfactory, the prominence being on skill-based applications that fit into usual views of teaching and learning.

Very few numbers of teachers have used open-ended ICT applications that can provoke the student’s information-concocting skills that can play a role of bridge between school learning and the real world. Moreover, with respect to curriculum contrast, the main importance in ICT use is on remediation tasks for slow learner students, as long as the strength of high-achieving students by means of ICT is ignored by many teachers. Except this, four out of ten teachers have felt that ICT accommodates a fair or a substantial considerable addition to cooperative learning, the use of ICT for the brace of cooperative learning is announced to be confined.

Most of the teachers do not make use of the potential of ICT according to the requirements of teaching systems. Thus rather than changing existing pedagogical practises computers in today scenario are being used for enrichment only. Male teachers seem to admire unrestricted use of ICT more than female teachers did.

The amount of a sufficient number of computers and capability of the learning environment is the only reason for the contribution for the liabilities of the use of open-ended ICT operations. If we want to improve the teaching methodology for primary education then the encouraging advantages of ICT should be well known to the teachers. ICT has got the power to give a very
good teaching mechanism and it has the ability to involve students actively, it also promotes independent way of learning. Apart from that the abilities of teachers which concern the use of ICT as a mean to prop effective learning environments should be highly promoted.


In this study the effects of different gender and ethnicity of students on the use of ICT has been investigated and carried out in seven Dutch schools. The findings of this research are as follows:-

- At the level of primary education, difference in use of ICT technology with respect to gender is negligible in amount.
- At the level of secondary education boys are more enthusiastic for the use of ICT as compared to girls; the choice of tasks on computers is also different between the two.
- As far as ethnicity is concerned researchers have found that the students of minority population feel themselves to be less confident and less skilled in the use of ICT as compared to the students of majority population.
- The opportunities to access ICT out of the schools campuses are also lesser for students of minority background as compared to majority background.
- On the basis of this study, researchers have developed many strategies to face these challenges and they have also tried to formulate an ICT policy that can meet the requirements of diverse population

This research has been done to examine the difference in self efficiency, motivation attitudes and performance of students when they are taught through PowerPoint presentations as compared with the traditional lecture methods. For this study classes of introduction to psychology have been conducted in two formats. Half lectures taught through traditional format and half through Power Point presentation. The objective is to study the dissimilarities between the subjective and objective performances of students with respect to these two lecture formats. The results of this research as follows;

- Achievements of students are not significantly affected with PowerPoint presentations although there has been an increase in the positive attitudes and self confidence of students when learned through a power point technique.
- This study also shows that students who got lectures by traditional method first and PowerPoint lectures later have hardly experienced any change in their motivation in the classrooms.
- When PowerPoint lectures have been given first and traditional later, it has been found that there has been a decrease in the ratio of motivation in students.


This study is an investigation of the students who have been undergone a course regarding the use of computer technology in the teachings of physics. The time period of this study has been five years and the course aims for producing well trained techie persons, who can represent the future of physics
teachers. Results of this study are very encouraging. This research is conducted at specializations schools for secondary school teachers of Milan University and it focused on the team work. The syllabus, frame work and the activities of the course are continuously modified and enhanced on the basis of answers to the feedback questionnaire filled by the students at various stages of the course. The student’s record from questionnaire depicts that trainees have greatly polished their knowledge in computer science as most of them have been not able to use computers for teaching purposes at the beginning of the course. But after sometime they can master it and can use it during their routine teaching work. The feedback from our association about the course also confirms the Advantages of this course. Even many trainees have experienced it as their best attended course at the school fulfilling all their expectations. The investigator has also taken note of the shortcoming pointed out by some of the students and has tried to fix accordingly.

2.26 Kovalan and N. Balasubramanian (2005) Best Quality Assessment Techniques of Web-Based Learning Resources in Teacher Education. Bharathiar University, Coimbatore, India. ICDE International Conference November 19 – 23, New Delhi

This research is related to the briskly growing area in education is Web-Based Teaching Learning Process (WBTLP). This process has changed the conventional forms of Education by teachers. It has become a new method for communication through internet. Traditionally teachers have accomplished dual roles as savoir of structured knowledge and social agents in the process of education. Good interactive resources are needed by the Students with some learning tools and techniques. And it is possible only if we train teachers in WBTLP so that they can provide good assets in the web. The learning on the basis of web can improve the attribute of teacher education by availing various tools and techniques of assessment. The centre of attraction of the present paper is to judge the assessment of web-based learning resources that helps to support essence web resources in teacher education. It also provides healthy
and a better environment for teachers which is composed of the organisation, the learning materials, use of media, delivery methodology and various approaches in details. There are two parts of the assessment process. The first part is assessment of faculty members in which relation and communication of theses with their student’s is assessed. The second part involves the assessment of learning techniques in which the standard of learning materials has been assed.


This research Paper is related to the Multimedia material for teaching physics (search, evaluation and examples) available in a great quantity. At first glance it seems to be very easy to teach physics with standard topics on worldwide basis. But when we study deeply it proved to be very difficult. Various types of databases of representative are collected and explained here. The percentage is very less which arbitrates their content on the basis of evaluation scheme. If the material is gauge then every organization uses its own gauge for judgement with its own weaknesses and strengths. Therefore, there should be a patterned or uniformity for evaluation scheme. This paper ends up with two multimedia examples i.e. diffraction and about Michelson interferometer.


The present study is designated to attain the effectiveness of computer assisted instruction at upper primary level. The findings of this study revealed that computer assisted instructions give better results as compared to the
conventional approach in the subject of Math at the upper primary level. Computer assisted instructions can be used to enhance the achievements of all types of students. This study brings out the possible effects of CAI among students learning environments.


In this study the investigator has tried to find the impact of technology on grades and presence of at-risk students when used in the classrooms. This study has been done on teachers of higher schools of North West Ohio. Results are not encouraging but reason for negative results is that the teachers in the sample did not use the technology to full extent. It has been found that the overall preparation required for the implementation of use of computer technology in classrooms has been not adequate. So the desired results could not be obtained. Investigator has concluded that it involves the participation of entire school community so as to design a model teaching method. A separate department is required for governing the implementation of technological aspects in teaching programs. This department can ensure the training required for staff members from time to time and it can maintain the infrastructure required for the establishment of computer technology as a tool for teaching.


This study presents some critical aspects of the relation between ICT and knowledge in the classrooms. Investigator has viewed that e-learning is being given an unnecessary hype and it cannot ensure complete learning at its own. He writes that many social traditional, historical aspects of learning are not taken into account, it is derived from the education projects concerning the teaching of English, history, music, modern foreign languages, geography, and
science. Investigator observes that teachers cannot put the whole responsibility of teaching to the ICT alone.


This study reveals out the results taken by the feedback given by students of undergraduate class studying in the University of Talca. During the course students have been were introduced through a new method of learning through technologies in their subject and are taught medical technologies through new teaching trends. After the treatment a feedback is taken from them regarding their satisfaction from using the technology in learning. The feedback is taken through the questionnaire. Clinical Biochemistry is taught through my WEB CT teaching platform. The syllabus is modified with the new technology trends. The feedback questionnaire consists of various questions regarding the effectiveness, quality, and usability and satisfaction level. Very positive feedback has been given by the students in these various aspects. There has been a tremendous level of satisfaction amongst the students and they get highly motivated through the new technology teaching process.


This study revealed the difference in the approach of male and female with regard to the use of ICT. Gender differences are more pronounced than the differences in student’s year group. Findings of this study are as follows.

- In general woman make lesser use of technology as compare to men
Men are versed with various technologies and softwares much earlier than women.

Men use the technology in different spheres of life and for variety of purposes.

While women considered ICT as a working tool example for communication purpose such as email and for learning purpose through internet, men use ICT more as a leisure instrument example; for playing games.

Getting Information on the WWW for Educational Purposes: Problems and a Possible Solution Resaerch paper publish in journal: Interactive Educational Multimedia. No. 7, p. 29-45

The study emphasises upon the World Wide Web (WWW) a very beneficial tool as it stores massive amount of information. However, we can access URL (Universal Resource Locator) addresses from search engines which always having things that users are actually interested in searching. When one is browsing something like educational knowledge this affirm problematic. We have designed a new search engine to overcome this situation and to improve it we have designed it which manages information that is previously is selected from the Internet. The search engine is appropriate with keywords as well as key phrases.


This study focuses on the attitude of the undergraduate toward the use of internet teaching. During the fall of 2002 semester this study has been conducted on the students at the department of computer and instructional technology education of the faculty of education of Cana kale Osakis Mart University. A questionnaire containing 27 items was given to 207 students. It
has been observed that use of internet has been a very popular amongst the undergraduates.

- 141 students have considered it as an essential tool for research and learning.
- 89 students have state that the use of internet made their learning a fun.
- 107 students found that it is easier to use internet than using a library.
- 80 students have agreed that they have assessed the internet more at school then at home.
- 79 students have considered internet as an important tool for performing in the college.
- 169 students have agreed that they would prefer learning using internet rather than the lecture methods used in the class room.
- 196 students have agreed that they have learn their course material through the help of the web

2.35 Byrne, Denice. (2002) A study of individual learning styles and educational multimedia preferences: an experiment using self-directed online learning resources. School of Computer Applications, Dublin City University, Ireland

This paper deals with test survey into relationship between individual learning styles and online learning through multimedia resources. The unique conditions of the test placed the online educational multimedia. Learning in an Environment of technology called as web CT. The Investigation task is on two groups for the experiment on group learned the concept through the online available contents in a self aimed and self-parole way. Learning methods have been classified by using a VARK survey and an index of learning styles (ILS) survey. The methods used for the process was included design production and source of suitable course contents. This was to mix into the Web CT system. Data has been collected by the Pre and post test analysis using online and paper

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1 www.computing.dcu.ie/~mfarren/educators.html
survey. The Data has been Analysis through the statistics Analysis for social Science (SPSS). Results of the data can firms that, the students will prefer learning with online available in multimedia contents, depending on their individual learning methods as VARK survey, but not as the I L S survey. The level of significance has been confirmed to 95%.

2.36 Usha Devi, L (2001) Computer Aided Teaching Packages, Article published online²

This study reveals about the recognition of the significance of education methods of instruction, which play an important role in teaching learning methods in modern electronic age. An experiment has been made to find some of the important electronic assets, which can help in the teaching learning process.


This study defines the factors mainly the use of computer mediated communication on (CMC) by teachers in secondary schools. This study compares a group of CMC users with non CMC users. The results of the experiments explains that using CMC in teaching language could be a technological change, which perceived CMC attribute and observed organizational constraint.


In this research the investigator has studied the importance of computer based instructions in learning and grasping the concepts. The Study has been

² http://drtc.isibang.ac.in/Idl/handle/1849/147
conducted between two groups of 15, 16 year old students. Topics chosen for the study was related to velocity and acceleration in projection motions. The objectives of the study were to investigate the result of the two methods one was conventional method and other was modern teaching method through computer assisted instructions. The study finds a positive response in formation of computer simulations. In the end the results of the poor students are significant. As from this study it has been clear that the new technological method the teaching concepts are much better than the traditional methods.


This study concludes the three view points of multimedia, first viewpoints relates to science, its definition and its association with the environment. Second view point is concerned with the knowledge through multimedia systems and also its educational and psychological aspects are defined. Third point of view is relates to the instruction for designing multimedia system. All the points have been confused were in favour of multimedia technology.


This articles deals with this study that the main difficulties which comes between the teaching and learning are not basically technical, but due to the lack of management controls and being social in nature. It was observed during the research, that the authorities are not providing required facilities. Not many efforts have been taken to improve the conditions of teachings. Special training courses are very much required in this perspective in teaching through modern methods and a suitable healthy environment regarding the use of technology is also a necessary requirement.

In this study the research reveals the facts that computer based training in learning various concepts of maths such as triangles are much significant than the training through traditional teaching method like teacher based training. For the investigation two groups have been selected with equal number of students. First group learned the concept through computer assisted instructions. The analysis of the data revealed that the group which was put in the experimental mode learned more that the other group.


This study implies that multimedia with suitable software can be effectively used to provide education of one semester to students of post graduate courses. The acceptability of this technology increased at successive stages of courses and it became more and more preferred method for learning


This study aims at estimating the feasibility of multimedia packages for teaching purposes in vocational institutions. The cost factors used have been analysed for arrangement of resources. The result of this study are as follows:-

- When these multimedia packages are applied there has been was 80% increase in marks obtained by 98% students on the final test.
- Uses of multimedia packages are beneficial if used for teaching in audio visual courses in Vocational Institutions.

This study relates to the effectiveness of multimedia instructional strategies for teaching science at senior secondary level. Experimental and controlled groups have been formed. The results are as follow:-

- 70% students of experimental group scored 60% or more on the full unit test and in their comprehensive test.
- Their performances have been the other group also in the annual examination taken by the school management.
- Both inductive and deductive multimedia learning process has an equivalent effect when used as instructional material.


The findings of this study are as follows.

- Instructions through Multimedia linear programs are better than those through multimedia semi programs.
- Instructions through multimedia semi program are better than programmed teaching strategies.
- These programmes help the learners to attain mastery level of learning.

Relevance of present research

No doubt that there are so many experimental designs as well as researches on multimedia packages have been conducted successfully in the fields of Sciences, Maths, Physics, Biology, English, Computer, social studies, and chemistry, As far as Music is concerned very few researches are on the
cards. Especially in Music Education these researches are required. Enabling the Futuristic researches to have a clear and authentic view, the present research and experiment design will be able to analyse the role of multimedia package in music on the achievements of senior secondary school students of music of Punjab will be able to justify the selection of problem itself.