Chapter - II

REVIEW OF THE RELATED LITERATURE

“Seek first to understand than to be understood.”

This can be said when the researcher first tries to understand the previous literature review based on the topic selected by the researcher and then only she will get a chance of being understood by others. For this the Researcher takes the advantage of the knowledge, which has accumulated in the past as a result of constant human endeavor. After the identification of the problem, information is needed about the problem so that it can be put in the proper context and the research can proceed effectively. One of the important steps in the planning of any research study is a careful review of the research journals, books, dissertations, thesis and other sources of information on the problem to be investigated. Therefore, a review of the related literature must precede any well-planned research study.

According to Good, Barr & Scates:

“The review of related literature promotes a greater understanding of the problem and its crucial aspects and ensures the avoidance of unnecessary duplication. It also provides comparative data on the basis of which one can evaluate and interpret the significance of one’s findings.”¹

In the words of Goods:

“The key to the vast store house of published literature may open doors to sources of significant problems and explanatory hypotheses and provide helpful orientation for definition of the problem, background for selection of procedure and comparative data for interpretation of results. In order to be creative and original, one must read extensively and critically as a stimulus to thinking.”²
Though tedious it provides a proper channel to the research and also answer a quality and a successful work accomplishment.

2.1 Review of Related Literatures for the Present Study

1) SHUTE, VALERIE; GLASER, ROBERT (1990)³

“A Large-Scale Evaluation of an Intelligent Discovery World: Smithtown.”

(Interactive Learning Environments)

Purpose of the Study:

The discovery learning environment Smithtown is a well-known example of an intelligent tutoring system. The researcher pursues two goals:

1. To enhance students’ scientific inquiry skills.
2. To let students discover some basic principles of microeconomics.

Conclusions:

1. First experiment showed that students using Smithtown for about 5 hours learned as much about microeconomics as did students receiving 11 hours of classroom instruction.
2. It is interesting to note that the less successful group of students had taken considerably more science courses since high school than the more successful group.
3. The second study results showed that the intelligence test measure accounted for less than 1% of the unique variance in predicting the number of concepts learned. In contrast, 38% of the unique variance was attributable to hypothesis-driven behaviors
4. This is interesting as learning scientific inquiry behaviors could be more trainable than general intelligence.

2) Darby, J. (1992)¹

“The Future of Computers in Teaching and Learning.”

(Computers and Education)

Abstract:

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.

3) Murphy, Michael; Miller, Alice (1996)⁵

“Incentives pay off in technological literacy.”

(Educational Leadership)

Purpose of the Study:

The Carroll Independent School District in Southlake, Texas, identified a need for teachers and other staff members to be more technologically educated. In response to this need, the district established a performance-based technology competency
program; in other words, employees could earn yearly stipends for demonstrating knowledge of technology.

**Conclusion:**

Carroll Independent School District’s first year showed 97% proficiency by teachers and administrators, the second year 82% by the same group, and the third year almost 50% of support staff. The district contends that students are using technology more because their teachers are modeling using it.

4) **Mioduser, David; Nachmias, Rafi; Oren, Avigail and Lahav, Orly**

(1998)\(^6\)

“Web-Based Learning Environments (WBLE): Current State and Emerging Trends.”

(In World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA))

**Purpose of the Study:**

The researchers developed a classification scheme of about 100 variables in four dimensions:

1. Basic descriptive information,
2. Pedagogical and educational considerations,
3. Knowledge attributes,
4. Communication features.
Each website included in this survey had to have an educational purpose and a clearly defined topic (for this study, science, technology, and mathematics), and it had to be a unit of its own (e.g. not a link repository).

Conclusions:

1. Most sites elicited cognitive processes such as information retrieval (52%) or memorizing (42%), whereas only 32% required analysis and inference; higher cognitive processes such as problem solving (5%) were rarely required. Interaction types were more or less restricted to browsing (76%) and multiple choices (31%); complex (3%) or online (6%) activities were rare. Collaborative learning was only manifest in 3% of the sites. The most common form of communication was e-mail (65%); more advanced tools for collaboration were hardly used at all.

2. The situation regarding web-based learning environments could be summarized as “one step ahead for technology, two steps back for pedagogy”. Previous efforts at, for example, sophisticated and constructivism-based educational software were supplanted by information-rich sites featuring more traditional (behaviorist) computer-aided learning approaches.

5) Gullikson, Shelley; Blades, Ruth; Bragdon, Marc and McKibbon, Shelley (1999)7

“The impact of information architecture on academic web site usability.”

(The Electronic Library)

Purpose of the Study:
The researchers examined the impact of information architecture on the usability of the web site of the Dalhousie University, Canada. The web site has won three design awards but is nevertheless an illustrative example for the lack of clear information structure.

**Conclusion:**

1. On average the users were able to answer 3.7 out of six questions and took 88.3 seconds to find an answer.
2. Pre-tests showed that an experienced user could find the answers in 13.6 seconds.
3. The Likert-scaled results with an average 3.25 on a scale from 1 to 5 (‘1’ is ‘strongly disagree/dislike’ and ‘5’ the opposite) were not that disappointing.
4. The qualitative feedback revealed a strong dissatisfaction. Users found the navigation scheme and the labels unclear, illogical, and misleading. They felt lost and they missed a search feature.


“Effective Discussion through a computer-mediated anchored forum.”

*(Journal of the Learning Sciences)*

**Purpose of the Study:**

The study bases on the fact that computer-mediated forums are becoming common in higher education. But it is not enough to implement such technologies.
Simply making a discussion forum available does not mean that it will be used effectively to enhance learning. The authors explore the idea that specific features of a discussion forum may increase the likelihood of effective discussions taking place within a forum. The article focuses on the implications for research into, and design of, computer-supported discussion tools for learning.

**Conclusion :**

1. In the first study they found no differences in participation levels but significantly longer threads lengths in CaMILE discussions, suggesting that CaMILE discussions were more sustained.
2. The study points out the value of anchors in facilitating effective discussion.
3. In discussing, and a successful anchor is one that engenders a sustained discussion in the collaboration forum.


“The teachers attitude towards computers in education of young children.“

(In C. Crawford et al. (Eds.), Proceedings of Society for Information Technology and Teacher Education International Conference (SITE) 2000.)

**Abstract :**

The paper presents a research on attitudes towards computers and educational technology in education of young children age from 7 to 11 in few public schools in Subotica (Yugoslavia). The research included over 100 inservice teachers, and was undertaken in September 1999. The research aimed at: - the teacher's attitudes towards the usage of computers in education of young children, - the teacher's computers skills, and - the teacher's attitudes on implementation of computers in the education. The
research has shown that very few inservice teachers are actually "computer literates"; the teachers don't see the possibilities of applying computer technology in their work, but are very interested and willing to advanced in that direction.


“A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies.”

(Management Science)

**Purpose of the Study:**

The original Technology Acceptance Model by Davies in 1989 is widely referenced. It explains users’ intention to use a new system through two beliefs, perceived usefulness and perceived ease of use.

**Conclusions:**

1. Social influence, e.g. through subjective norm, defined as “person’s perception that most people who are important to him think he should or should not perform the behavior in question”, significantly influences perceived usefulness. Cognitive factors also play an important role.

2. It’s important to empirically demonstrate the comparative effectiveness of a new system to the potential users. One might add that, considering the social influence factors, such demonstrations should be done by or with the explicit endorsement of people important to the potential users.

9) **DONATH, JUDITH (2002)**

“A semantic approach to visualizing online conversations.”

(Communications of the ACM)
Purpose of the Study:

This study presents two projects by the Sociable Media Group at the MIT Media Lab dealing with visualizing online social interactions.

The first project, Coterie, visualizes chat room activity using animations. Participants are represented as colored ovals that bounce and become brighter when that person speaks. Coterie uses content heuristics to determine threads of discussion, and visualizes these threads as well. The idea is to convey the feel of the conversation itself: coherent discussions have a central core in the display, whereas non-coherent conversations are scattered.

The second project, People Garden, uses a garden metaphor to visualize participation in a discussion forum. Participants are rendered as flowers: The longer they have been active, the higher the stem; the more they have posted, the more petals. The image conveys a clear sense of how many people are active, how many are lurkers, or who is dominating the conversation.

These kinds of visualizations focus on providing the viewer with a qualitative sense of what is going on in a virtual discussion setting, synchronous or asynchronous. Though their context is not learning per se, they offer inspirations that have been taken up by other projects in the educational settings. However, it is not clear how suitable the metaphors are in educational settings.

Conclusions:

1. One avenue for future research could be the integration of the visualization with their underlying conversational message and clusters of messages, so
that viewers could navigate through the visualization to individual messages for qualitative content analysis.

2. Another avenue for future research would be studies of user acceptance and usage of such visualizations to determine how teachers would use such tools.

10) FRYDENBERG JIA (2002)¹²

“Quality Standards in e-Learning: A matrix of analysis.”

(The International Review of Research in Open and Distance Learning)

Abstract:

Most institutions of postsecondary and higher education are creating or adopting quality statements, standards, and criteria regarding their niche of the “e-Learning enterprise.” In doing so, they have a tendency to reinvent the wheel. This article summarizes current published quality standards in the US, and analyzes and organizes them into a nine-cell matrix.

Conclusions:

1. It concludes with discussion of emerging issues with respect to the nine standards-area and believes the distinction between face-to-face and online will soon merge in both quality standard setting and practice.

2. As pedagogy and learning needs drive educational design, every possible mutation of physical and virtual meetings of minds will be created and be grounded in pedagogical purpose. It is a grand time to be an educator.

“A Study of Technology Teachers' Attitude toward Videoconference Applied in Education.”

(In C. Crawford et al. (Eds.), Proceedings of Society for Information Technology and Teacher Education International Conference (SITE) 2002)

**Abstract:**

The purpose of this study was to identify technology teachers' attitude toward videoconference applied in education. Technology teachers are always playing the pioneer role to adopting new teaching technology into their professional works. Their attitude toward certain teaching technology would consider an indicator of implementing technology in education.

Videoconferencing technology allows two or more people at different locations to communicate each other at the same time. In addition, it is often possible to share computer applications. It is a rich communication technology which could offers new possibilities for schools, colleges, and libraries including formal instruction, connection with guest speakers and experts, multi-school project collaboration, professional activities. Based on literature review, an investigation tool was design for collecting data of technology teachers attitude toward videoconference applied in education. There were three attitude categories in the questionnaire. Those categories were advantage of using videoconference, type of using videoconference, and effective using videoconference. Both in-service and pre-service technology teacher were random
sampling for distributing questionnaires. Statistical comparisons were conducted based on both service types such as in-service and pre-service and personal profile groups such as gender, age, teaching experience and location of school. According to the result of statistical analysis, the technology teachers attitude toward videoconference applied in education was concluded and discussed.

12) GREEN, KENNETH C. (2003)\(^1\)

“Campus Computing 2003.”

(From Campus Computing Project)

**Purpose of the Study:**

The Campus Computing Survey is the largest continuing study of the role of information and communication technology in American higher education. The 2003 report reviewed here is the 14\(^{th}\) annual survey.

**Conclusions:**

1. The survey documents the rising use of ICT in instruction. 75% of all institutions use e-mail, 37% of all courses have a Web page, 28% of all faculties have a personal Web page, and about 20% use computer-based exercises and simulations.

2. Learning Management Systems or Course Management Software is increasingly seen as a core institutional resource. 33% of all institutions
operate at least one LMS or CMS, with 82% of these reporting that their institution has established a single LMS / CMS product standard.

13) **LUCHINI, KATHLEEN; QUINTANA, CHRIS; SOLOWAY, ELLIOT (2003)**

   “Pocket PiCoMap: A Case Study in Designing and Assessing a Handheld Concept Mapping Tool for Learners.”

   (In Computer-Human Interaction (CHI))

**Purpose of the Study :**

This paper reports on a case study in designing and assessing a particular piece of handheld software for educational use in schools. This study is reviewed here to illustrate the challenges of designing educational applications for mobile devices in contexts other than higher education.

**Conclusions :**

1. The study showed that the link scaffold was very effective in assisting students in drawing correct relationships.
2. The evaluation of the concept maps showed that 50% of the Pocket PiCoMap concept maps were scored unreadable. That is, less than half of the map elements (concepts, relationships) were visible. In contrast, none of the PiViT maps were considered unreadable.
3. 30% percept of PiCoMap maps had orphan nodes (concept nodes that were unconnected to the rest of the concept map), whereas only 1 out of 16 PiViT maps contained orphan nodes.

14) **MCCREDIE, JACK (2003)**

   “Does IT matter to higher education?”
Purpose of the Study:

The main proposition is that IT becomes like the telephone a ubiquitous and homogenous technology through which no company will manage to establish a sustainable competitive advantage. Carr advises CIOs to focus IT operations on reliability and cost efficiency and not to lead new trends. McCredie discusses the appropriateness of these statements regarding the context of higher education. After reproducing Carr’s main propositions, McCredie contests these in four major points. Although cutting edge IT infrastructure will not guarantee a distinctive advantage over competitors, it is an essential criterion upon which students and researchers will chose their school and therefore an indispensable duty for a university willing to remain competitive.

Conclusion:

Today IT is fundamental to many aspects of academic life; its main contribution is the initiation of fundamental discussions about the nature of the academic profession, government structures, and the future role of higher education in society in general. McCredie’s discussion of the strategic importance of IT to higher education is a timely and very important contribution.

15) Poli, Corrado; Fisher, Donald; Pollatsek, Alexander; Woolf, Beverly Park (2003)¹⁷

“Design for Stamping: Identifying Pedagogically Effective Components in Multimedia Tutors and the Classroom.”

(Journal of Engineering Education)
**Purpose of the Study:**

The goal of this research was to isolate the factors that made instruction in designing for stamping most effective, using both software tutorials and traditional classroom instruction.

**Conclusion:**

The most striking result was that students of Traditional Lecture Group, exposed to a traditional lecture with questions and graded homework, performed on average one standard derivation better than students of Software Tutorial Only group, Video Lecture Group A, Video Lecture Group B, and they performed as well as students of Software Tutorial plus Homework Group. The researchers argue that this experiment, taken with the results from the experiment described above, shows that students profit by a considerable amount from directed and individual feedback. Indeed, the feedback seems more important than the method of instruction (lecture vs. software tutorial) itself.

16) **ROVAI, ALFRED P. (2003)**

“The Relationships of Communicator Style, Personality-Based Learning Style, and Classroom Community among Online Graduate Students.”

(The Internet and Higher Education)

**Purpose of the Study:**

This study attempts to explore relationships between learner perceptions of classroom community and more established personality measures of communicator style and personality-based learning style. According to the author of the study, while
computer-mediated communication has become the norm for social interactions in virtual classrooms, its effects on sense of community are yet to be fully understood.

The sample of the study consisted of 63 doctoral students, who took an online research methods course, delivered through the Blackboard Content Management System at Regent University in the United States. As part of their coursework the respondents completed an online discussion assignment and discussed their work with the instructor via the Web.

Conclusions:

1. It was concluded that the instructor was largely viewed by the learners as a facilitator, another member of classroom community. Because all members of the learning community took on the roles of instructors to varying degrees and at different points on the course.

2. The participants did not differ in their views of connectedness and learning, which led the researcher to conclude that online courses could be structured to build a sense of community among learners regardless of their personality-based learning styles.

3. The learners, who were more friendly, open and precise communicators, reported stronger feelings of classroom community.

4. Despite serious limitations to the generalisability of the study’s findings (e. g. only a single cohort of students on the same course at the same university were studied, there were difficulties in establishing cause-effect relationships among key variables etc.)
The findings of this research raise several important issues with respect to effective teacher and learner behaviours in virtual learning environments, which could be explored in follow-up studies.


“Early Childhood Teachers’ Attitudes towards Computer and Information Technology: The Case of Greece.”

(Information Technology in Childhood Education Annual Journal. 2003)

Abstract:

The purpose of this research was to investigate the attitudes of early childhood teachers towards computers and Information Technology (IT). The study examined whether or not attitudes are differentiated by a series of factors, such as: years of previous service, the use of a computer at home (with Internet access), inservice training, and experience of teachers with computers, as well as their views about the introduction of computers into early childhood education. The subjects of the survey were 107 inservice female early childhood teachers, taking part in a two-year programme of inservice training at the Department of Early Childhood Education of the Aristotle University of Thessaloniki, Greece. The results show that early childhood educators have limited access and positive but temperate attitudes to the world of
computers. Teachers’ attitudes appear to be influenced significantly by computer use at home, experience with computers and inservice training.

18) **BEASLEY, NICOLA; SMYTH, KEITH** (2004)

“Expected and Actual Student Use of an Online Learning Environment: A Critical Analysis.”

(Electronic Journal of e-Learning)

**Purpose of the Study:**

This study takes a critical look at the authors’ actual use of an OLE in tertiary education, after briefly expanding upon the above claims on the impact of online learning environments. Discussion for a were made available to communicate with staff and peers. Progress reports showed learners which materials and exercises they had covered.

**Conclusions:**

Four issues in particular are discussed:

1. Students exclusively studied the material in a linear fashion, even though they knew they could have accessed the hypertexted material non-linearly. The authors note that perhaps the navigational structure did not provide enough guidance; as it were, learners saw no benefit in using non-linear access. However, they did appreciate the glossary and the search facility.
2. The students asked for paper-based materials, even though they did not have any technical problems. They liked reading offline, and they mentioned that they could only annotate the materials on paper. One reason for these observations may be that the learners in this study were adults, and had not grown up in computer-rich environments.

3. The communication facilities were hardly used. The main reason may be that there was no task associated with using the facilities, and students would not use them just because they were provided. Also, the students preferred face-to-face contact with their companies' tutors.

4. Students extensively used the self-assessment questions to evaluate their understanding of the materials. However, they did not use the progress reports at all. Since they worked through the materials in a linear fashion and used the self-assessment questions, they felt there was no need to look at a report which told them what they had read.

19) **CHANG, YU-TAI. (2004)**

“The impact of positive feedback and communication on attitudes and self-efficacy beliefs of adult learners in introductory computer courses in Taiwan (China).”

(EdD, Northern Illinois University)

**Purpose of the study:**
This study investigated adult student’s learning of computer technologies in the community context in Taiwan. The purpose of this study was to examine the relationship among the multiple demographic variables and the attitudes and self-efficacy beliefs of the student’s learning computer technologies in community adult education in Taiwan.

**Conclusion:**

At the chosen level of significance (.05), five factors were significantly related to computer attitude and self-efficacy: gender, level of education, employment status, hours of computer use, and previous course experience. After the treatment, a significant increase related to computer attitudes and self-efficacy was found in the experimental and control groups. Results also showed a significant interaction effect between attitudes and self-efficacy scores, indicating that the experimental group’s. in addition, a significant, positive relationship was found between final grades and post-test scores.

20) **CHEN, YU-CHEN. (2004)**

“Faculty and dean’s expectations and attitudes on adopting computer as an instructional tool: A study of a College of Education in a Taiwan University (China).”

(Ph. D., The University Of Alabama At Birmingham)

**Purpose of the study:**

The purpose of the study was to analyse the climate of computer use for instructional purpose, to determine the expectation and attitudes of the faculty members
and dean of the college of education regarding adopting computers to assist in instruction, and to examine the amount of influence from the leadership of the Dean of the college of education and its effect on the faculty members willingness to use the computers for instructional purposes.

Conclusion:

1. Fifty of the members believed and were somehow satisfied that computer technology could enhance their teaching.

2. Almost four fifth of the faculty members believed that they still need “teaching assistants”, “classroom facilities,” and “teachers facilities” for their instructional performances.

3. This study revealed that most faculty members took advantage of computerized instruction, but that they hope to get more support from administrator because computerized instruction involved software designer, graphic designer, and web programmes. This involvement becomes a cooperative effort and a possible burden for individual faculty members and the organization.

21) CHUA, MING KOK; KWAN, CELINA AND TAN, SENG CHEE (2004)  
“Collaborative Learning through Video-Based Case Discussion Tool.”  
(In World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA))

Purpose of the Study:
This paper presents a tool called Conversant Media for the use of synchronous and asynchronous discussion of videos and reports preliminary results of an evaluative comparison of using this tool versus using an off-the-shelf threaded discussion tool.

**Conclusion**

1. CM users averaged more posts and more ideas than users of the threaded discussion forum.
2. During follow-up interviews, CM users were able to recite the video scenes that were discussed in greater detail. 90% of CM users would prefer using CM for the next video discussion.

22) **DEROUIN, RENEE E.; FRITZSCHE, BARBARA A. AND SALAS, EDUARDO**

   (2004)²⁴

   “Optimizing E-Learning: Research-Based Guidelines for Learner-Controlled Training.”

   (Human Resource Management)

**Purpose of the Study :**

The authors begin their article with comments on the general potential of E-learning for training and point out its specific benefits for learner control. Instructional design elements like content, sequence, pacing, and locus of instructional control allow the learner to choose the material that is most important to them and to move at their pace through a flexible sequence of topics.

**Conclusion :**

E-Learning realised as learner-controlled training can play an important part in workplace learning.
23) **Donnell, Virginia (2004)**

“The relationship between student and faculty attitudes toward computer technology in advanced arts classes.”

(Published EdD dissertation, Tennessee State University)

**Purpose of the study:**

This study examines the relationship between faculty attitudes toward computer technology in advanced arts classes at Middle Tennessee state university during spring semester 2004. This study was focused on the disciplines of art, dance, music, and theatre, and was limited to faculty and students engaged in the 3000 and 4000 level classes.

**Conclusion:**

The result indicated that there was not a significant relationship between faculty and student’s attitude towards computers; however, a significant positive relationship was found between faculty and student liking of computers. The evidence indicated that the both faculty and student’s attitude towards computers were significantly related to the perceived level of computer expertise.

The researcher concluded that the both arts faculty members and students had more competent with computers.

24) **Jens, Dorup (2004)**

“Experience and Attitudes towards Information Technology among First-Year Medical Students in Denmark: Longitudinal Questionnaire Survey.”

(Journal for Medical Internet Research)
**Objective:**

To determine how extensively and effectively information handling skills are being taught in the medical curriculum, the study investigated Internet and computer availability and usage, and attitudes towards information technology among first-year medical students in Aarhus, Denmark, during a five-year period.

**Results:**

Males were significantly ($p < 0.001$) more interested in replacing traditional with ICT-supported teaching and learning. An average of 46.6% of males versus 21.8% of females indicated that they would like to replace traditional teaching with use of computers if possible. Despite fluctuations, there was no trend towards a consistent change in these numbers during the study period. A small percentage (6.8% of females and 3.3% of males) indicated that they would prefer not to have to use a computer during their medical studies. Again, in spite of fluctuations, there was no trend towards a consistent change in this number.

The difference between males and females in attitudes towards use of distance education was also highly significant ($p < 0.001$): 38.7% of males versus 19.9% of females indicated a positive attitude. The attitude towards use of ICT resources as a supplement was more positive than for ICT replacement or for distance education (86% of boys and 76% of girls were positive.)

**Conclusions:**
Taken together with our experience from classroom teaching, these results indicate optional teaching of basic information technology still needs to be integrated into medical studies, and that this need does not seem likely to disappear in the near future.


“The effect of learning styles, computer attitude, and classroom technology on student performance and motivation.”

(Published Ph. D. Dissertation, Auburn University)

Purpose of the study:

This study examines the effect of computer assisted instruction and course management system on student’s performance and motivation, after controlling for learning style, cognition, and computer attitude.

Conclusion:

The result from the analysis of variance indicated student performance was significantly affected by the treatments, and student motivation was not significantly affected by the treatments. Computer attitude did influence motivation, after controlling for cognition and learning style, but did not influence performance.

26) NORRIS, CATHLEEN; SOLOWAY, ELLIOT (2004)28

“Envisioning the handheld-centric classroom.”

(Journal of Educational Computing Research)
Purpose of the Study:

Cathleen Norris and Elliot Soloway present their vision of a handheld-centric K-12 classroom in this article. The authors introduce the idea of a handheld-centric classroom to focus attention on the range of devices that could be made available in classrooms (e.g., digital cameras, scanners, projectors). While hardware is considered a solved problem, innovative, usable, and affordable software remains the greatest challenge.

Conclusions:

1. 87% of teachers used a handheld-based simulation in the first year in which they were introduced to it whereas it took the authors four years to get 50% of teachers to use a web-based digital arts library.

2. One of the main challenges impeding widespread adoption of handhelds is pedagogy. In a handheld-centric classroom, students’ documents should play a central role which implies major changes in curriculum, instructional practices, and assessment.


“Developing web annotation tools for learners and instructors”

(Interacting with Computers)

Purpose of the Study:

The article describes the design and development of Web annotation tools (WATs) for individual users and a group of users, evaluating five points: annotating on hypertexts, building up knowledge structure, browsing instructions provided electronically by the system administrator or the instructor, sharing annotations with other learners, and instructing other learners.
Conclusions:

1. Many annotation programs are not updated once research grants run out.
2. New computing devices require periodical redesign. At the time, WATs is only available to certain students and instructors for testing purposes. Furthermore, the current version of WATs is expected to be simplified while a standalone application program is already planned to be developed.

“A comparison of attitudes toward computer and text-based instruction for at-risk students.”  
(Ed D, Arizon State University)

Abstract:

This study examines the effect of two instructional strategies self-paced text-based instruction (TBI) and self-paced computer-based instruction (CBI) and gender on student’s motivation for schooling, Performance-based self concept, reference-based self concept, since of control over performance, instructional mastery, and attitude toward computers in an alternative high school in the phoenix Metropolitan area. Students completed two questionnaire, the school Attitude Measure (SAM) and Computer Attitude Scale for Secondary Students (CASS).

The conclusion derived from this study was that the school had a positive influence on student’s attitude and perceptions. The above-mentioned results for all participants in the two setting were consistent with the results of the interviews and the results obtained from the observations.


“Online Interaction impacts on learning: Teaching the teachers to teach online.”
(Australasian Journal of Educational Technology)

**Purpose of the Study :**

Wilson concentrates on the importance of effective staff development to enable faculty to become confident and competent online teachers and especially to understand how to structure and facilitate interaction through a web environment.

**Conclusions :**

1. Teacher can integrate online the interaction that has traditionally been part of classroom teaching.
2. Major roles of a competent online teacher which are the basis for the design of qualification programs and certificates.
3. Higher education institutions can embed formal, accredited courses for academic staff to increase the diffusion of staff development in new learning technologies by requiring some units as mandatory for new staff, linking completion of the course to a probationary requirement and marketing the course to institutional leaders.

30) **BOON, JO; RAMASUNDARAM, V.; VAN DER KLING, MARCEL AND TATTERSALL COLIN (2005)**

“Developing a critical view on e-learning trend reports: trend watching or trend setting?”

(International Journal of Training & Development)

**Purpose of the Study :**
This article discusses the role, influence and quality of trend watching reports in the field of e-learning and presents a checklist for evaluating the quality of trend reports on e-learning. The authors defined the concept of quality of trend watching reports by using four dimensions:

1. Author and authority,
2. Accuracy of research and data collection,
3. Accuracy of the document, and
4. Objectivity of the presented content.

**Conclusions:**

The results of the evaluation process for the four reports were very similar.

1. All reports had high scores in the 'author and authority' dimension.
2. The dimension 'objectivity' was scored very low.
3. While the reports used persuasive and quite enthusiastic language to predict e-learning’s bright future, they did not pay substantial attention to possible barriers that might have negative effects on the future of e-learning.
4. Very low scores were observed for the dimension 'accuracy of research and data collection'.

The central conclusion of the authors is that the effect of the surveyed trend reports is rather the setting than the watching of trends. Thus they advise practitioners and researchers to be critical of the quality of trend studies in the domain of e-learning.

31) **CHEN, HAILAN. (2005)**

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[^31]: CHEN, HAILAN. (2005)
“The effect of type of threading and level of self-efficacy on achievement and attitudes in online course discussion.”

(Published Ph.D. dissertation, Arizona state University.)

**Purpose of the study:**

This study investigated the effect of type of threading and level of self-efficacy on achievement and attitudes in learning through asynchronous online course discussion. Also investigated were the effect of the threading and self-efficacy conditions on the amount of individual interaction, the effect of threading condition on the amount and nature of group interaction, and relationships among amount of interaction, achievement and attitudes.

**Conclusions:**

1. Threading condition yielded no significant differences for student achievement. However, self-directed threading had a significantly positive effect on student attitudes and yielded more group social presence interactions.
2. Level of self-efficacy also yielded no significant differences for either achievement or attitudes. However, lower self-efficacy students did make more positive comments in the structured threading condition, while higher self-efficacy students made more positive comments in the self-directed threading condition.
3. There was also a significantly positive relationship between the amount of group interaction and attitudes. Implications are discussed for design of and research on, asynchronous discussions to aid learning.
32) CHEN, MEI-KUEI VICKY. (2005)³⁴

“Adult students’ information technology experience and attitudes toward use of computer technology.”

(EdD. Mississippi State University)

Purpose of the study:

The purpose of this study was to investigate (a) adult students’ attitudes toward computers (affective, perceived usefulness, perceived control, and behavioral factors), (b) how individual characteristics (i.e., demographics) and information technology (IT) experience (i.e., computer use patterns, software skill levels, as well as learning interest levels) affect adult students’ attitudes toward computers, (c) how individual computer use patterns affect adult students’ average computer skill levels and learning interest levels.

Conclusion:

The results of those analyses indicated that

1. The majority of adult students (81%) had positive computer attitudes.
2. From the SSCAS, perceived usefulness subscale had the highest mean score of 3.228.
3. There were several significant differences concerning adult students’ characteristics, IT experience, and computer attitudes. Skill levels and learning interest levels were proved to be the important predictors of adult students’ computer attitudes.
4. Individual computer use patterns need to be taken into account to affect adult students’ average computer skill levels and learning interest levels.

33) COVINGTON, DAVID; PETHERBRIDGE, DONNA; WARREN, SARAH EGAN (2005)³⁵

“Best Practices: A Triangulated Support Approach in Transitioning Faculty to Online Teaching”

(Online Journal of Distance Learning Administration)

Purpose of the study:

This article is in essence a case study of the support provided to staff before and during the large-scale transition of professional writing courses to online delivery at North Carolina State University. In addition to providing detailed information and assessment of the methods used, it develops a model for this kind of support – called the ‘Triangulated Faculty Support Approach’.

Conclusion:

The article concludes with the assessment that a successful and smooth process of transition from ‘traditional’ to distance or online methods of teaching requires support from department, faculty peers, and university support staff. This combination allows the successful addressing – in a collaborative manner – of any barriers to online instruction.

34) DAVID MONK (2005)³⁶
“Using Data Mining for e-Learning Decision Making.”

(E-learning Services, University of Glamorgan.)

Abstract:

The initial investigation aimed to examine the paths learners followed when offered the course in a custom virtual learning environment (VLE) which is structured by tasks, course materials and learning resources. However, it quickly became clear that students were spending little time with the course materials online and the time spent with each page was usually less than 20 seconds. Consequently a better understanding of how learners accessed the electronic course materials was needed to evaluate the effectiveness of developing and delivering courses in this way.

By combining data on the activity with content with user profiles it was possible to examine alternate information perspectives and reveal patterns in large volume data sets. Mining data in this way provides ways to learn about learners in order to make effective decisions regarding teaching methods, delivery models and infrastructure investment.

35) ELGAMAL, SHEREEN SHAWKI. (2005)37

“Assessing the individual needs of K--12 principals in the area of technology and computer applications.”

(Published EdD dissertation, East Carolina University.)

Purpose of the study:

The purpose of this study was to investigate the relationship between attitudes and proficiency levels that K-12 principals reported towards computer applications and
online resources relevant to their work. A self-assessment online survey was developed for data collection and study findings established the significance of the relationship in question.

**Conclusion:**

The study acknowledged that self-assessment provided by K-12 principals should be a key factor in the planning and implementation of their technology-related professional development and training activities. The Theories of Reasoned Action and Planned Behaviour provided the theoretical framework for the study. As a predictor of behaviour, attitude was found to be an appropriate starting point leading towards favourable learning tendencies and practices, and ultimately resulting in higher proficiency levels.

36) **Griffith, Donald Sanford, Jr. (2005)**38

“FIRST Robotics as a model for experiential problem-based learning: A comparison of student attitudes and interests in science, mathematics, engineering, and technology.”

(Published EdD dissertation, Clemson University)

**Purpose of the study:**

This research study was undertaken to examine potential relationships between high school students’ attitudes and interests in science, mathematics, engineering, and technology, and their participation in the FIRST Robotics Competition six-week challenge to design, and build a robot. High school students’ gender and race, in
relationship to students’ interest in the aforementioned topics was also examined in this study.

Conclusions:

1. Findings reported that the pre and post-survey questionnaire responses regarding attitudinal change were not significantly different in either the experimental or control group.

2. High pre-survey dependent variable scores provided by students in the FIRST group did not allow for significant gain in each of the seven-attitudinal categories.

3. There were significant attitudinal differences between students in the experimental group (FIRST), and students the control group (SMET) pre- and post-survey responses. Students in the FIRST group had statistically significant higher attitude means than students in the SMET group on both pre- and post-surveys in the seven-attitudinal categories.

The results expressed in percentages indicated that there were significant differences in respondent scores for the pre-survey versus the post-survey in the FIRST group.


“Examining the impact of an educational technology assessment on pre- and in-service educators’ attitudes and behaviours towards educational technology.”

(Published Ph.D. Dissertation, University of Connecticut.)

Purpose of the study:
This study examined the impact an educational technology assessment (the Husky Educational Technology Assessment Program: Level I) had on an individual's educational technology attitude and behaviours. Also of particular concern for this study are issues related to gender and educational training.

Conclusions:

Results from this study indicate that

1. There are significant differences between pre-service and in-service educators on educational technology knowledge, attitude, and behavior measures.

2. Training and professional development in educational technology have been found to be an effective means for increasing both educational technology attitudes and educational technology usage.


“Attitude toward Instructional Technology Following Required vs. Optional WebCT Usage.”

(Published Ph.D. Dissertation, University of Connecticut.)

Abstract:

The current study sought to understand the mechanisms that facilitate improvement in preservice teacher attitude toward instructional applications of computer technology. Participants comprised two groups: education students whose use of WebCT was required for completion of course assignments \( n = 42 \) and education students whose use of WebCT was entirely optional \( n = 82 \). All students made pre- and postcourse ratings of the perceived value of instructional technology.
Across groups, positive changes from pre to postcourse occurred on seven of the ten items that evaluated attitude toward instructional technology. Additionally, students required to use WebCT showed a greater overall change in attitude from pre to postcourse and made greater use of optional online course material relative to those whose use of WebCT was optional. Requiring the use of technology in course work may generate favorable attitudes toward technology and thereby foster greater utilization of other available computer-based applications.

39) Kuo, Chia-Ling. (2005)

“Wireless technology in higher education: The perceptions of faculty and students concerning the use of wireless laptops.”

(Published Ph.D. Dissertation, Ohio University.)

Purpose of the study:

This study was based on the hypothesis that gender differences and past experiences with computers and the Internet influence individuals’ perceptions of wireless laptops.

Conclusions

1. The overall perception of participants on the use of wireless laptops was positive.

2. A statistically significant difference in the perceptions of wireless laptops was found in the groups of graduate students and faculty members.
3. Faculty members showed lowest interest in trying wireless laptops, worried about security problems, and were concerned about the distraction that wireless laptops may bring to learning.

4. The relationship between the perceptions of wireless laptops to five predictors (gender, wireless laptop ownership, wireless laptop experience, attitude toward computers, and attitude toward the Internet) was significant.

5. In evaluating the contribution of each predictor, the attitude toward the Internet was found to be the most important factor in predicting the perceptions of wireless laptops, and was followed by gender, the computer attitude scale, wireless laptop ownership, and experience with wireless laptops.

40) **LORENZO, GEORGE; ITTELSON, JOHN (2005)**

   “An Overview of E-Portfolios”

   (Educause Learning Initiative)

**Purpose of the Study :**

This article points out that they also function as a tool for personal reflection since they often encourage feedback by others. Additionally, e-portfolios can be used as administrative tool in order to control work created with different applications and by different users.

**Conclusions :**
1. Teaching e-portfolios are used to showcase skills and accomplishments for the purpose of career advancement. The researchers may include the faculty’s instructional work, his or her teaching philosophy and lesson plans.

2. Institutional e-portfolios combine e-portfolios by faculty and students with those by programs and departments. They are relatively new and are seen to function as a possibility of institution-wide learning, reflection, and improvement.

3. They can therefore be used for accreditation as well as for marketing purposes.

4. E-Portfolios seem to be a promising means to promote life-long learning in institutions of higher education.

41) MARILEENA KOSKELA, PIIA KILTTI, INKA VILPOLA AND JANNE TERVONEN (2005)43

“Suitability of a Virtual Learning Environment for Higher Education.”

(Tampere University of Technology, Finland)

Abstract:

The number of virtual learning environments (VLEs) is increasing. Already a few case studies claim that VLEs are more effective as a learning method than traditional lecturing. Many of these case studies are in the area of information and communication technology (ICT). Therefore, the good learning results are not surprising.
The aim of this paper is to examine the suitability of a VLE for higher education by comparing earning with a VLE and learning in a traditional lecture on an occupational safety engineering course. We will compare the learning results and the students' opinions of their learning process.

Conclusion:

The results show that the VLE students outperformed the lecture students. On the basis of these results and previous case studies, the VLE is suitable for higher education. Nevertheless VLEs should be used with caution in higher education. They should add extra value to a course. One possible value would be to use the VLE self-study method to evaluate one's learning before a final exam.

42) MARTIN, FLORENCE (2005)44

“Effects of instructional elements in computer-based instruction.”

(Published Ph.D. Dissertation, Arizona State University.)

Purpose of the study:

This study examined the effects of instructional elements (information, objectives, practice with feedback and review) on achievement, attitude and time in a computer-
based, multimedia program. Undergraduate college students used the multimedia lesson to learn about artists and their painting styles.

**Conclusions:**

1. Results indicated that practice had a significant effect on achievement while objectives and review did not. Participants who used the program with practice performed significantly better than those who did not receive practice.

2. Student responses to the attitude survey showed that they were sensitive to the presence or absence of the instructional elements investigated in this study.

3. Participants who used the lean program (information only) had the lowest overall attitudes.

4. When the individual items on the attitude survey were analyzed, participants who received practice had significantly higher agreement with the item.


“Development of an environmental virtual field laboratory.”

(Computers & Education)

**Purpose of the study:**

The article describes the design and development of a virtual field laboratory in the area of environmental studies. The environment utilizes GIS technology, 2D and 3D
modelling as technological approaches, and aims for an integration of a variety of inquiry-based learning and overall more situated and student-centered learning approaches.

**Conclusion:**

Its quite unique contribution is the fieldwork component, where most virtual laboratories are literally laboratories with four walls and a set of available procedures and objects to manipulate.

44) **ALAN HILLIARD (2006)**

“Outline and Evaluation of a Joint European and Canadian Virtual Mobility: e-Learning Project.”

(University of Hertfordshire UK.)

**Purpose of the study:**

The aim of the project was to facilitate student learning of the cross-cultural differences in the delivery of healthcare within the disciplines of diagnostic radiography and radiotherapy.

Students from the participating institutions were selected on a voluntary basis, to work in "paired groups" and to consider and discuss the relevant issues in a given healthcare scenario, submitting a group written assignment at the project's conclusion.

**Conclusion:**

Students and faculty facilitators were encouraged to complete online evaluation forms, which were analysed and used to form recommendations for change in the future delivery of the project.
45) **DALSGAARD, CHRISTIAN (2006)**

“Social software: E-Learning beyond learning management systems”

(European Journal of Open, Distance and E-Learning)

**Purpose of the study:**

This article focuses on social software and its impact on learning management systems. Although universities across the world have implemented learning management systems (LMS) by now, the author argues that it is necessary to move beyond LMS in order to effectively use the internet as a teaching tool, especially within the framework of a social constructivist pedagogy.

**Conclusion:**

It is not necessary to use an expensive LMS for online collaboration; "small pieces loosely joined" could provide an adequate learning solution as well. In fact, social software might provide a starting point for the personalisation and individualisation of learning.

46) **BUENAFA R. ABDON, SEISHI NINOMIYA, ROBERT T. RAAB (2007)**


(The International Review of Research in Open and Distance Learning)

**Abstract:**
Developing countries face a number of challenges in their efforts to compete successfully in the new global economy. Perhaps the most critical resource needed to achieve these goals is trained human capital. While many developing countries are trying to address this need through traditional means, this may not be the most effective or efficient response. e-Learning has been suggested as an alternative approach that can overcome many of the challenges involved in reaching underserved students.

Conclusions:

1. Most educational institutions in developing countries are unfamiliar with e-Learning, have low levels of computer availability, access, familiarity and Internet penetration which leads to skepticism about the feasibility of this approach.

2. E-Learning was able to successfully deliver tertiary educational opportunities to underserved provincial students, Cambodian students were able to overcome serious challenges and that female Cambodian students demonstrated superior performance in online classes. These results suggest that e-Learning is an effective alternative for delivering tertiary education in Cambodia.

Purpose of the Study:

The purpose of this article is to identify and discuss the characteristics of a model to manage eLearning in a large, campus-based university. To set the context of managing quality assurance for eLearning by focusing on three questions:

1. What are the key aspects or stages of the course development and teaching process?
2. What strategies are built into the process that allows universities to continually review and improve current practice of integrating eLearning into a historically face-to-face experience?
3. What are some of the strategies used to maintain cohesion in the process so that there is continual review of eLearning in the redevelopment and teaching of courses?

Conclusions:

1. At the university level, issues to do with sustainability, cultural change, and infrastructure implications are emphasized.
2. At the faculty level, the implications for everyday academic activities, workload implications and strategies, and the classifications of teaching positions, such as on-line tutors, are emphasized.

48) JUNGHOON LEEM, BYUNGRO LIM (2007)

"The Current Status of e-Learning and Strategies to Enhance Educational Competitiveness in Korean Higher Education."

(The International Review of Research in Open and Distance Learning)
Abstract:

The purpose of this study was to examine the current status of e-Learning in Korean higher education and find ways to encourage the further use and development of e-Learning systems that aim to enhance Korea's academic competitiveness.

Findings:

1. Both teachers and learners alike, lacked meaningful support systems and opportunities to actively participate in e-Learning programs.
2. Although such lack of support was found to be endemic.
3. Such lack of support and opportunity was found to be more acute in private universities, private colleges, universities of education, than mid-sized, small-sized, and provincial universities and colleges.
4. Except for a few mid- and small-sized universities and colleges, most large universities and colleges were equipped with technical support such as infrastructure and operational platforms.
5. These same schools, however, did not provide institutional support, nor did they employ appropriate policies needed to further the quality and enhancement of e-Learning offerings.
6. There was no meaningful link found between schools and industry, nor was there adequate financial support in place for the implementation of e-Learning systems, simply because many universities failed to allocate sufficient funding for e-Learning.

Conclusions:

In conclusion, the strategies for enhancing university competitiveness through e-Learning are as follows:
1. Establishing support strategies according to the types of universities;
2. Developing quality assurance systems for e-Learning;
3. Enhancing support systems for professors and learners;
4. Developing knowledge sharing systems between schools and industry;
5. Enhancing international collaboration for e-Learning;
6. Developing and supporting e-communities of knowledge for research and education.

49) **JEREB, EVA & BRANISLAV SMITEK (2006)**

"Applying Multimedia Instruction in E-learning."

*(Innovations in Education and Teaching International)*

**Abstract:**

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.

**Conclusions:**

1. 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.
2. The use of multimedia instruction adds variety to the study and increases the quality of an individual’s work and the motivation of learners.


“The attitude of pupil teacher and teacher educator towards computer education in colleges of education in the universities of Vidarbha region of Maharashtra.”
(Ph. D. Edu., Unpublished Doctoral Dissertation, University of Sant Gadge Baba Amravati University, Amravati)

Purpose of the Study:
1. To study the attitude of pupil teachers and teacher educators.
2. To compare significance of attitude of male and female pupil teacher towards computer education.
3. To compare significance of attitude of male and female teacher educator towards computer education.
4. To compare the Self-efficacy of teacher educator and pupil teacher in computer technology.
5. To suggest a practical based curriculum useful for the colleges of education.

Conclusions:
1. The attitude of pupil teachers towards computer education in the colleges of education in the Universities of Vidarbha region of Maharashtra was found to be favourable.
2. The attitude of teacher educator towards computer education in the colleges of education in the Universities of Vidarbha region of Maharashtra was found to be favourable.
3. It was found that pupil teachers belonging to male and female category did not differ significantly with respect to their attitude towards computer education.

4. It was found that pupil teachers belonging to male and female category did not differ significantly with respect to their self-efficacy in computer technology.

5. It was found that teacher educators belonging to male and female category differs significantly in favour of male teacher educators with respect to their self-efficacy in computer technology.

2.2 Distinction of the Present Research Study

In order to know distinction of the research study, the present researcher goes through various websites, digital libraries on internet and literature from different libraries and collects near about 80 different research articles, Ph. D. researches, and report study material indirectly related to present study. Among them the 12 references used to describe need and importance and selection of the present study in first chapter. By studying the review of previous research and related literature the researcher observed that most of the studies related to E-learning technology, various Environment of E-learning, Various tools of E-learning, E-learning software, Students and teachers attitude towards E-learning (ICT) and Traditional learning, E-learning in Higher education, Models of E-learning etc. which helps the researcher to reach near to the specified study. Researcher observed that, not a single study directly related to the present study. Hence it is absolutely a new study in the field higher education of
Medical, Dental and Engineering towards traditional learning and E-learning and to find the efficacy on academic achievements.

2.3 Utility of Review of Literature to the Researcher

There are several benefits of Review of literature to the researcher mention below:

a) To avoid unfruitful and useless problem areas.
b) To enable how to define the limits of the research field.
c) To avoid unintentional duplication of well established findings.
d) To know an understanding of the research methodology.
e) To know previous recommendation.
f) To know an understanding of research tools used.
g) To know an insight into statistical method through which validity of results is established.
h) To get guidelines to do necessary modification and finally select the topic.
i) To know how to complete quality work to obtain good grades.
j) To draw the exact conclusion of the present study.
k) To help to give the necessary suggestions for the future study.

References


2) Ibid, 111.


21) CHANG, YU-TAI. (2004). “The impact of positive feedback and communication on attitudes and self-efficacy beliefs of adult learners in introductory computer courses in Taiwan (China).” EdD, Northern Illinois University.


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