CHAPTER 3

REVIEW OF RELATED LITERATURE

<table>
<thead>
<tr>
<th>Introduction</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studies relating to Computer Supported Education</td>
<td>51</td>
</tr>
<tr>
<td>Studies relating to Computer Mediated Medical Education</td>
<td>57</td>
</tr>
<tr>
<td>Studies relating to Multimedia in Education</td>
<td>62</td>
</tr>
<tr>
<td>Studies relating to Multimedia in Medical Education</td>
<td>65</td>
</tr>
<tr>
<td>Studies relating to Internet Based Education</td>
<td>66</td>
</tr>
<tr>
<td>Studies relating to Internet Based Medical Education</td>
<td>70</td>
</tr>
<tr>
<td>Studies relating to e-Learning in Education</td>
<td>80</td>
</tr>
<tr>
<td>Studies relating to e-Learning in Medical Education</td>
<td>84</td>
</tr>
<tr>
<td>Studies relating to Yoga for Diabetic Problems</td>
<td>91</td>
</tr>
<tr>
<td>Studies relating to Yoga for Heart Diseases</td>
<td>93</td>
</tr>
<tr>
<td>Studies relating to Yoga for Asthma Problems</td>
<td>97</td>
</tr>
<tr>
<td>Studies relating to e-Learning Based Education for Diabetic Problems</td>
<td>100</td>
</tr>
<tr>
<td>Studies relating to e-Learning Based Education for Heart Diseases</td>
<td>102</td>
</tr>
<tr>
<td>Studies relating to e-Learning Based Education for Asthma Problems</td>
<td>103</td>
</tr>
<tr>
<td>Discussion</td>
<td>104</td>
</tr>
</tbody>
</table>
INTRODUCTION

The literature review is one of the most important early steps in a research study. It provides the reader with an explanation of the theoretical rationale of the problem studied as well as what research has already been done and to know how the findings relate investigated, and where the focus of further enquiry should lie. At a more detailed level, information gained from a review of the literature can also help in the formation of research questions to the problem at hand. A thorough literature review can also help to identify gaps in current knowledge. It can help to clarify what has not so far been systematically, to clarify and limit the scope of a study. In addition, the literature review will provide the reader with a conceptual frame for the study.

Traditionally, most of the decisions were taken from personal experience, expert opinion, commonsense, intuition and belief. Sometime each of these resources may be inadequate for making a decision. Recently, there are many resources that are increasingly available for making a decision. Generally, the purpose of a review is to analyse a segment of a published body of knowledge through summary, classification, and comparison of prior research studies, review of literature and theoretical articles. Another important resource of review of some studies provides systematic way of detailed information by Journal articles, Books, Conferences, Government / Corporate reports, Newspapers, Theses, Internet, CD-ROMs and Magazines. Finally, the literature review will help you to anticipate common problems in your research context. You can use the prior experiences of others to avoid common traps and pitfalls.
Porinchak (1984) conducted a study on impact of Computer Assisted Instruction (CAI) on the development of reading skill at the secondary level. The results of the study indicated that there was a significant difference with regards to learner preference and the mode of instruction wherein the computer was preferred. This study concluded that CAI and Lecture Method appeared to be equally effective for the average learners.

Lowery (1988) attempted to compare the two teaching strategies Viz. CAI and Traditional Lecture Discussion (TLD). This study found that CAI saved time for student and the faculty. It also identified that CAI promoted mastery of course content regardless of student’s cognitive style.

Purushothaman & Stella (1991) studied on effectiveness of Computer Assisted Instruction (CAI) programme on learning Set Theory at the eighth standard level. They found that the CAI is better than the Traditional Method irrespective of sex. It is concluded that CAI was more effective method than the conventional method.

Ko, Chih-En (1992) conducted a study on interactive effects of timing of feedback and learners’ prior knowledge on the achievement and retention of a computer-based mathematical work. This study concluded that the immediate feedback was superior to delayed feedback for immediate achievement but not delayed retention.

Tsai (1992) studied the effects of different systems of positive reinforcement on computer-based training. The investigator found that the computer-based learning made an impact in improving student achievement.

Rangaraj (1995) evaluated the effectiveness of Computer Assisted Instruction (CAI) in teaching physics at higher secondary stage. This experimental study concluded that CAI as a support system to teacher in the classroom instruction was more effective when compared to conventional lecture method and CAI as individualized instruction.

Christmann et al. (1997) investigated the effects of Computer Assisted Instruction (CAI) on the academic achievements of secondary students to the traditional approach. It was found that the CAI attained higher academic achievement than traditional instruction alone.
Holsbrink-Engels (1997) studied the effect of the use of conversational model and opportunity for reflection in Computer Based Role Playing (CBRP). It was found that the technology could be used to assist in realizing effective gradual lead into interpersonal skills learning and instruction. This study concluded that CBRP might improve interpersonal skill training for novices.

Anandhan (1998) made an attempt to study the effectiveness of Computer Assisted Instruction (CAI) in Indian Economics at Eleventh standard. This study found that the CAI method helps achievement of a student when compared to traditional method. It was also found that significant difference achievement between CAI and traditional methods even after controlling the intelligence and socio-economic status of the students.

Muhammad & Al-Jabri (1998) studied the relationship between computer attitude and its components viz. anxiety, confidence, linking and perceived usefulness and utilization of computers with the context of a major Educational Institution in Saudi Arabia. This study found that the there is a strong relationship between the overall attitude of a learner and the utilization of a computer. It was also found that all the four attitude components were significantly correlated with computer utilization.

Nicol & Anderson (1999) evaluated by comparing Computer Assisted and Teaching Implemented Instruction (CATII) in numeric with the population, with a third group acting as a control group. It was found that the computer group was improved more scores when compared with control group.

Kadhiravan (1999) studied the effectiveness of Computer Assisted Instruction (CAI) in relation to students’ use of Self Regulated Learning (SRL) strategies. It was found that there is significant difference among different instructional strategies viz. Lecture Method, Computer Assisted Instruction and Computer Assisted Instruction with Peer Interaction. This study concluded that CAIPI is more effective when compared to the Lecture Method and CAI in enhancing the retention at knowledge, understanding and application level.
Balasubramanian and Jayaraman (2000) investigated the relative effectiveness among different modes of computer-based instruction viz. Tutorial, Drill and Practice and Simulation. This study concluded that the Simulation is more effective than Tutorial, and Drill and Practice modes. It is also concluded that Tutorial and Drill and Practice are equally effective in realizing as well as retaining the instructional objectives in Physics at Higher Secondary Level.

Carl & Holly (2000) studied the educational effectiveness of computer-based instruction. The investigator reviewed an alternative evaluation strategy whereby the student's mastery of a specific cognitive skill is directly assessed both before and after participating in a computer-based exercise. Methodologies for assessing cognitive skill are based on recent advances in the fields of cognitive science. Results from two studies show that computer-based exercises can positively impact the higher-order cognitive skills of some students.

Jayakanthan (2002) made an attempt to study the application of computer games in the field of education. The computer gaming industry has today become bigger than the world music and movie industries, the influence of computer games over the youth of today is akin to that of the cultural influence of music, political movements and even religion on youth culture of the past. It has become increasingly important for game developers and educators to study the application of computers for enhancing the education offered to the next generation of students, Computer games can be used to give a better form of education and can even make computers become the unique tools of learning. The study presented the current scenarios of computer games being used for the purposes of education and training. It will also dwell on areas in which the tremendous capabilities of computer games as an education medium can be utilized in educating a new generation of students weaned on computer games. New possibilities for computer games as tools of knowledge will also be projected.

Wenli Tsou et al. (2002) carried out a study on how computers facilitate foreign language learners to acquire English abstract words. This study investigated computer assisted foreign language abstract word learning. A total of 13 commonly encountered abstract words at the elementary school level were chosen to study in the abstract word learning system. According to the theories in CAL., the abstract word learning system
was designed to provide context for language learning as well as flexibility in learning time, paths, and modes. A total of 38 sixth graders engaged in learning with the system. It was found that students learning with the system learned significantly more abstract words than students in regular language learning class.

John Milliken & Philip Barnes (2002) studied on teaching and technology in higher education: student perceptions and personal reflections. In this study the investigator concluded that possible areas of development in the use of computer technology as a means of improving the quality of learning and teaching.

Barbara Monroe (2002) investigated the Internet in Indian Country. Three main patterns of technology use emerge: (1) technology for communications and information-sharing is widely used at the tribal government level; (2) multimedia and presentational technologies are favoured in tribal schools or small public schools with Indian majorities; and (3) stand-alone computer drills are exploited in large public schools with non-Indian student majorities. Despite the different patterns of use in these different contexts, most support a common agenda: to support Native ways of knowing and interacting in the world.

Annie Magnan & Jean Ecalle (2004) studied an Audio-visual training program in children with reading disabilities. This study tested the effectiveness of audio-visual training in the discrimination of the phonetic feature of voicing on the recognition of written words by young children deemed to at risk of dyslexia (experiment 1) as well as on dyslexic children’s phonological skills (experiment 2). In addition, the third experiment studied the effectiveness of this word recognition training in dyslexic children who regularly used a computer at home. A traditional pre-test training, post-test design including comparison groups (experimental vs. control) provided a base-line for assessing the training effects. It investigated the impact of the audio-visual training about voicing on performances of reading-disabled children. Such type of training leads children to connect print and phonology. Phonological representations could be specified by training, which involves both phonological and orthographic units. The mapping between these two units could be easier in a computerized remedial program.
Yuen-kuang Cliff Liao (2005) evaluated the effects of computer-assisted instruction on students’ achievement in Taiwan: A meta-analysis. This study was performed to synthesise existing research comparing the effects of computer-assisted instruction (CAI) versus traditional instruction (TI) on students’ achievement in Taiwan. Fifty-two studies were located from our sources, and their quantitative data was transformed into effect size (ES). The overall grand mean of the study-weighted ES for all 52 studies was 0.55. The results suggest that CAI is more effective than TI in Taiwan. The results from this study suggest that the effects of CAI in instruction are positive over TI. The results also shed light on the debate of learning from media between Clark and Kozma.

Winslow Burleson (2005) studied on developing creativity, motivation, and self-actualization with learning systems. In this study, the investigator concluded that the computer in Education develops a meta-cognitive ability to make conscious and unconscious decisions about engagement that will ultimately enhance learning, expertise, creativity, and self-actualisation.

Wright & Lawson (2005) evaluated the computer mediated communication and student learning in large introductory sociology classes. Over the past several years, scholars of teaching and learning have demonstrated the potential of collaborative learning strategies for improving student learning. This paper examines the use of computer-mediated communication to promote collaborative student learning in large introductory sociology courses. Specifically, we summarize a project that we conducted during the academic year 2000-2001 in which we added online collaborative learning activities to the curriculum of two large sections of introductory sociology. The results suggest that student engagement in the online group learning activities was strongly predictive of better student academic achievement on the biweekly quizzes, cumulative final exam, and course paper. These findings highlight the potential value of online group work for fostering collaborative learning environments in large lecture courses as well as for enhancing student learning.

Basturk (2005) examined the effectiveness of computer-assisted instruction in teaching introductory statistics. The focus of this study is to demonstrate and discuss the educational advantages of Computer Assisted Instruction (CAI). A quasi-experimental
design compared the learning outcomes of participants in an introductory statistics course that integrated CAI to participants in a Lecture-only introductory statistics course. Findings of this suggested that the participants' learning capacity of the introductory statistics could be improved successfully when CAI was used as a supplement to regular lecture in teaching introductory statistics course.
Ramirez & Mondragon (2002) carried out a study on computer-based education for patients with cancer at Latino Border Hospital. This study examined the use and utility of computer-based education interventions among Latinos. It was conducted using the CancerHelp(TM) software survey in a Texas institution on the US-Mexico border. Nonparametric test statistics were used to test the hypothesized relationships and the usefulness of CancerHelp(TM) software. The following statistic hypotheses were not rejected: (1) CancerHelp(TM) use is independent of age group, (2) use of CancerHelp(TM) is equally distributed among patients and family members, (3) among Latinos, CancerHelp(TM) use is independent of education, and (4) CancerHelp(TM) usefulness for patients with cancer is independent of ethnicity.

Marilyn et al. (2002) conducted a study on development and evaluation of an interactive web-based breast imaging game for medical students. The purpose of this study was to develop and evaluate by student survey, an interactive computer tool for teaching breast imaging to 4th-year medical students. This study concluded that the Students surveyed found the Web site to be worthwhile, convenient, and applicable to other specialties.

McAllister & Mitchell (2002) studied the effectiveness of enriching learning using Web and computer technologies: how not to throw caution to the wind. This study aims to describe the project as well as the teaching and learning approaches taken. In this, the investigator concluded that many of the ideas and lessons learned may be relevant to nursing educators interested in enhancing the quality and richness of their curriculum processes with computer and web-based activities.

IzquierdoPorrera et al. (2002) examined the factors influencing the use of computer technology in the collection of clinical data in a predominantly African-American population. This study determines the cognitive and demographic factors that affect the performance of a predominantly African-American population in the use of a computerized version of the Center for Epidemiologic Studies Depression Scale (CES-D). This study found that there was no difference between the scores from the paper and the
computer CES-D or between the two computer forms. Computer experience predicted
Time 1 (partial correlation R = 15%, P = .017) and delta-time (partial correlation R =
10%, P = .048). Age, education, and cognitive function did not affect performance.
Finally the investigator concluded that computerized assessment techniques are valid and
unaffected by age, education level, or cognitive factors in healthy individuals.

Jha et al. (2002) V, Widdowson S, and Duffy S made an attempt to study on
development and evaluation of an interactive computer-assisted learning program - a
novel approach to teaching gynaecological surgery. The objective of this study was to
develop an interactive Computer Assisted Learning (CAL) program on CD-ROM,
combining video, illustrations and three-dimensional images to enhance understanding of
vaginal hysterectomy in terms of the anatomy and steps of the surgical procedure. The
three-dimensional image was included to enhance understanding of the complex
relationships between the uterus, bladder and rectum. There is an interactive self-
assessment section with multiple-choice questions and an anatomy self-test. 12
undergraduate students and, 16 trainees in Gynecology have evaluated the CD-ROM as
an educational tool. Most were satisfied with the program. A need for development of
further similar educational software has been identified. The CD-ROM has identified an
innovative and useful approach to teaching operative surgery. the results from the
evaluation have been positive in terms of the need for similar programs in future.

Bruce et al. (2003) carried out a study on RadioGraphics: a web-based model for
radiology resident self-education. The residency review committee (RRC) for diagnostic
radiology of the Accreditation Council for Graduate Medical Education mandates core
competencies including computer-aided applications in medicine. The purpose of this
review was to evaluate the use of RadioGraphics’ on-line CME to satisfy the RRC
requirements. The investigator concluded that RadioGraphics’ on-line CME provides an
effective method to teach residents skills required by the RRC.

Guerandel et al. (2003) made an attempt to study on Computer-Assisted
Learning in Undergraduate Psychiatry (CAL-PSYCH): evaluation of a pilot programme.
This study introduced and evaluated a computer assisted learning programme in
undergraduate psychiatry (CAL-PSYCH). An interactive e-learning environment was
created within the University College Dublin portal to assist students in acquiring the
necessary skills in undergraduate psychiatry. This study concludes that the Computer-assisted learning environments such as CAL-PSYCH provide the opportunity to bring modern e-learning techniques to medical education, and may provide a new model for life-long learning in medicine.

Matthew & Biller (2004) carried out a study on Essential Neurology: Audiovisual Patient Vignettes on CD-ROM as a Teaching Aid for Medical Students. The amount of time devoted to neurological education during medical school is limited. To expand the range of neurological problems to which students are exposed, we have compiled an archive of 100 audiovisual case vignettes on CD-ROM which students view during their neurology clerkship. The vignettes served as a tool for our former Departmental Chairman (Dr Biller) to discuss diagnosis, ancillary testing, and basic patient management skills with third- and fourth-year medical students during interactive case conferences. A survey conducted among students regarding the vignettes reflects a high degree of approval. This study found that ninety-two percent of the students rated the overall experience with the case vignettes as either “excellent” or “good.” CD-ROM case vignettes were felt to represent a novel way of expanding students’ experience during a brief neurology clerkship.

Gupta et al. (2004) studied the attitudes of undergraduate students and staff to the use of electronic learning. The aim of this study was to determine the attitudes of third year dental students and members of staff about the E.course website. A questionnaire was produced and piloted before being distributed to all 65 third year dental students to obtain their opinions about the E.course website. The views of E.course were sought from four members of staff by performing qualitative, semi-structured interviews. The majority of the students (79%) wanted the course to be used, as a supplement to the undergraduate programme and 7% wanted it to replace formal lectures. Students consider the Ecourse as a positive method of supplementing traditional methods of learning in the dental undergraduate programme.

Griffith et al. (2005) conducted a study on development of an interactive computer-assisted instruction (ICAI) program for patient prenatal genetic screening and carrier testing for use in clinical settings. This study described the use of cognitive response interviews (CRI) and usability testing (UT) in the development of an interactive
computer assisted instruction (ICAI) program for use by prenatal patients in clinical settings. In this study the investigator concluded the ICAI program by considering rephrasing of content to fit patient understanding, and adding navigational features to help further facilitate effective program use.

Hohne & Schumann (2004) studied on Computer Assisted Learning (CAL) in human and dental medicine. This article describes the development and application of new didactic methods for use in computer-assisted teaching and learning systems for training doctors and dentists. In conclusion, potential and visions for the wide use of electronic learning in the German and European universities in the future are discussed. Self-directed learning (SDL) is a key component in both undergraduate education and lifelong learning for medical practitioners. E learning can already be used to promote SDL at undergraduate level. The Meducase project uses self-directed, constructive, case- and problem-oriented learning within a learning platform for medical and dental students. In the long run, e-learning programs can only be successful in education if there is consistent analysis and implementation of value-added factors and the development and use of media-didactic concepts matched to electronic learning. The use of innovative forms of licensing - open source licenses for software and similar licenses for content - facilitates continuous, free access to these programs for all students and teachers. These legal concepts offer the possibility of innovative knowledge distribution, quality assurance and standardization across specializations, university departments, and possibly even national borders.

Michael et al. (2005) studied on Computer and World Wide Web Accessibility by Visually Disabled Patients: Problems and Solutions. Computers and the World Wide Web are increasingly required for education and employment, as well as for many activities of daily living. Although these changes have improved society in many respects, they present an obstacle for visually disabled patients who may have significant difficulty processing the visual cues presented by modern graphical user interfaces. In this study, the investigator concluded that the computer and Web access faced by visually disabled patients, describes clinical evaluation methods, summarizes traditional low vision methods as well as newer more assisting computer technologies for universal accessibility, and discusses emerging technologies and future directions in this area.
Wofford et al. (2005) conducted that the multimedia computer for office-based patient education: a systematic review. Use of the multimedia computer for education is widespread in schools and businesses, and yet computer-assisted patient education is rare. The investigator concluded that the potential for improving the efficiency of the office through computer-assisted patient education has been demonstrated, but better proof of the impact on clinical outcomes is warranted before this strategy is accepted in the office setting.
STUDIES RELATING TO MULTIMEDIA IN EDUCATION

**Feeney (2003)** conducted a study using interactive multimedia for dyslexic students in geographic education. This study was conducted to assess interactive multimedia for aiding students with dyslexia to learn geography. Guided by the National Geography Standards, four sections of a lesson were created in two formats: traditional text and interactive multimedia. Forty-six eighth grade students (dyslexic and non-dyslexic) participated. They took a pretest and then proceeded with the lesson, alternating each section with each format and answering multiple choices content questions after each section. The results indicate that multimedia helped both groups of students in terms of accuracy, response times, and enthusiasm, with a slight decrease in the performance gap between the two groups.

**Asan (2003)** carried out a study on school experience course with multimedia in teacher education. This paper describes an interactive and self-paced multimedia tutorial programme that provides pre-service teachers with a complete range of school system and teaching strategies. This study concluded that using multimedia in teacher education enriches pre-service teachers' learning and provides them with an opportunity to view and critique various teaching methods and classroom activities collectively.

**Green et al, (2003)** evaluated the use of streaming video to support student learning in a first-year life sciences course for student nurses. Streaming video was used to support the learning of first year student nurses on a Life Sciences module, as one of many innovations designed to increase the range of resources and support available to students. This study described the background to this innovation, the procedures adopted and the results of extensive evaluation. The use of streaming video was evaluated in three applications in the module. This study suggested that streamed video can contribute to useful resources to support learning by student nurses but, for a variety of reasons, it may not appeal or be adequately accessible to all students at present.

**Mayer (2003)** studied the promise of multimedia learning: using the same instructional design methods across different media. Multimedia learning occurs when students build mental representations from words and pictures that are presented to them (e.g., printed text and illustrations or narration and animation). The promise of
multimedia learning is that students can learn more deeply from well-designed multimedia messages consisting of words and pictures than from more traditional modes of communication involving words alone. The results provided four examples in which the same instructional design methods are effective across different media.

Karen (2003) studied on interactive multimedia for library-user education. Library educators at four academic libraries are using distance-education technologies to learn how to design and build web-based interactive multimedia sites for library-user education. They will then test library users before and after using these multimedia sites to determine whether interactive multimedia is an effective approach to teaching library users about library research.

Kearney (2004) made an attempt to study on classroom use of multimedia-supported predict-observe-explain tasks in a social constructivist-learning environment. This study focused on the use of multimedia-based predict-observe-explain (POE) tasks to facilitate small group learning conversations. Although the tasks were given to pairs of students as a diagnostic tool to elicit their pre-instructional physics conceptions, they also provided a peer learning opportunity for students. Findings of this study indicated that the computer-based POE tasks supported students' peer learning conversations, particularly during the prediction, reasoning and observation stages of the POE strategy. The increased level of student control of the POE tasks, combined with the multimedia nature of the program, initiated quality peer discussions. The findings have implications for authentic, technology-mediated learning in science.

Gentry, Chinn & Moulton (2004) studied on the effectiveness of multimedia reading materials when used with children who are deaf. The purpose of the study was to assess the relative effectiveness of print, sign, and pictures in the transfer of reading-related information to children who are deaf, by means of personal computers, deaf children were presented CD-ROM-generated stories in four different formats: print only, print plus pictures, print plus sign language, and print plus pictures plus sign. The study findings suggested that presenting stories on CD-ROM with multiple modes of reading cues, such as print, pictures, and sign language, might be an enjoyable and interesting supplement to standard reading practices.
Glang et al. (2005) carried out a study using interactive multimedia to teach pedestrian safety: An exploratory study. The main objective of this study is to evaluate an interactive multimedia (IMM) program that teaches young children safe pedestrian skills. The program uses IMM (animation and video) to teach children critical skills for crossing streets safely. A computer-delivered video assessment and a real-life street simulation were used to measure the effectiveness of the program in teaching safe street-crossing skills. This study found that the significant effects were found in the computer-delivered and behavioral measures. It is also concluded that the children can learn to discriminate dangerous elements in traffic situations using the IMM program and transfer that knowledge to real-life environments.
Mahoney et al. (2002) studied the effects of a multimedia project on users' knowledge about normal forgetting and serious memory loss. The aim of this study was to develop and evaluate the effectiveness of a CD-ROM-based multimedia program as a tool to increase user's knowledge about the differences between "normal" forgetfulness and more serious memory loss associated with Alzheimer's disease. This study controlled randomised study conducted with 113 adults who were recruited from the community and who expressed a concern about memory loss in a family member. It was found that there was highly significant difference (p < 0.001) corresponds to a very large effect size. This program was most effective for participants with a lower level of self-reported prior knowledge about memory loss and Alzheimer's disease (p = 0.02). This multimedia CD-ROM technology program provides an efficient and effective means of teaching older adults about memory loss and ways to distinguish benign from serious memory loss. It uniquely balances public community outreach education and personal privacy.

Margaret & Agnes (2003) studied the use of computer-assisted technology to enhance student psychiatric nurses learning during a practice placement. The purpose of this study was involving the use of a computer assisted learning (CAL) interactive multimedia (IMM) package called 'Admissions,' as a self-directed learning tool with two-second year psychiatric nursing students. The investigated concluded that the CAL package is easy to use, informative and promoted independence and self-directed study.

Tsai et al. (2004) Evaluated the Computer Assisted Multimedia Instruction (CAMI) in intravenous injection. The purpose of this study was to develop a computer-assisted multimedia-training course for intravenous injection and evaluate its effect on the knowledge and self-perceived performance of intravenous injection for novice nurses. From the study it could be concluded that the training course had a significant effect on the intravenous injection's knowledge. Besides, a high rate of satisfaction for the multimedia program showed the self-developed program was successful.
Grabe & Sigler (2002) carried out a study on studying online: evaluation of an online study environment. This study evaluates student use of an online study environment. Its purposes were to (1) determine if college students would voluntarily use on-line study tools, (2) identify characteristics of users and nonusers of the tools, and (3) determine if the use of online study tools relates to course achievement. Approximately 25% of students used the online tools for more than one hour before each of three examinations. In comparing use of the study tools provided, the largest number of students made use of the online lecture notes and the greatest amount of online study time was devoted to reviewing multiple-choice questions. The perceived ease of access to the Internet differentiated tool users from nonusers. Study tool users scored higher on course examinations after accounting for measures of ability and study skill.

Liaw (2002) made an attempt to study on understanding user perceptions of worldwide web environments. The purpose of this study was to develop and test a conceptual model of individual perceptions of Web technology as a use and training tool. The model presents a perspective of users' attitudes toward Web environments. This model integrates the Technical Acceptance Model, Social Cognitive Theory, individual attitudes, motivation and self-efficacy perspectives to develop a new aspect of users' perceptions toward Web technology acceptance and use. The study provides some evidence that the conceptual model helps the understanding of user perceptions to Web environments. In addition, training and educational programmes on computers may foster a positive feeling towards the Web. Furthermore, the more individuals have self-efficacy towards Web technology, the more individuals have motivation to use the Web.

GalEzer & Lupo (2002) studied on integrating internet tools into traditional CS distance education: students' attitudes. This study conducted on the attitudes of students towards the integration of the Web as a channel of communication and a study tool in traditional distance teaching of Computer Science (CS) at the Open University of Israel (OUI). The result of the study described that the use of the Web increases as students advance in their studies, although even in this case the Web is not used as much as it could be, either as a communication channel or as a study tool. This study concludes that the Web cannot substitute entirely for face-to-face learning, but it can serve as a
reasonable alternative when the latter is unavailable. Using the Web to its full pedagogical potential requires a high level of self-study ability; the more distance-based the learning is, the more the Web is used and accepted by the students, and the more it serves them as a communication channel and as a study tool.

**Lin et al. (2002)** studied on the use of internet-based learning in biology. The study described here implemented an Internet-based project in a biology class and investigated its effect on the cognitive preferences held by students and on their performance. The data showed an effect on students' cognitive preferences, with a shift from disfavour to favour of questioning. It was also found that students who did the Internet-based project had higher scores for short-answer questions than those who had experienced more traditional teaching, while students who experienced the latter had higher scores in multiple-choice tests.

**Selim (2003)** attempted to study the empirical investigation of student acceptance of course websites. The World Wide Web (WWW) is the future in teaching and learning. This study used the Technology Acceptance Model (TAM) constructs of usefulness and ease of use to assess university students' acceptance of course websites as an effective learning tool. A structural equation model was used to fit and validate the Course Website Acceptance Model (CWAM) and the results indicated good fit to the data. Course website usefulness and ease of use proved to be key determinants of the acceptance and usage of course website as an effective and efficient learning technology. The causal relationships between the constructs considered by the CWAM were well supported, accounting for 83% of the total variance in the course website acceptance and usage.

**Ployhart et al. (2003)** conducted a study on Web-based and paper-and-pencil testing of applicants in a proctored setting are personality, biodata, and situational judgment tests comparable? This quasi-experimental study compares the equivalence of proctored Web-based tests to paper-and-pencil tests in a selection setting. The predictor battery was composed of measures of Conscientiousness, Agreeableness, Emotional Stability, a biodata form, and a situational judgment test. The results found effects for both context and test format. Relative to the applicants completing the paper-and-pencil measures, the Web-based measures showed (a) better distributional properties, (b) lower means, (c) more variance, (d) higher internal consistency reliabilities, and (e) stronger
intercorrelations. This study concluded that proctored Web-based testing has some positive benefits relative to paper-and-pencil measures, and we identify several implications of these findings for research and practice.

Li et al. (2003) studied on the effectiveness of adapted web pages on the learning performance of students with severe mental retardation. Learning to use computers and/or using computers to learn has become a part of everyday life for most students. Unfortunately, students with mental retardation in Taiwan, especially those with moderate or severe mental retardation, are often not considered capable of utilizing computers and online learning. Web pages mostly displayed in text form have therefore become the major obstacle for students with mental retardation when they try to learn online. This study found that the learning by integrating pictures, communication symbols, voices and animations are the most effective on learning for mental retardation learner.

Mary Silver (2004) made an attempt to study on E-learning for the pump industry. Internet-based training is increasingly seen as the solution for providing professional-level education in a cost-effective and time-effective manner.

Meichun et al. (2004) studied on cognitive–metacognitive and content-technical aspects of constructivist Internet -based learning environments: a LISREL analysis. Through a LISREL analysis, this study validated the Constructivist Internet-based Learning Environment Survey (CILES). This study concluded that the Internet could have rich connections with numerous resources and a variety of perspectives, thus constructing appropriate learning environments to provide different kinds of challenges for learners.

Robert (2005) has undertaken a study of the effects of home computers on school enrollment. Approximately 9 out of 10 high school students who have access to a home computer use that computer to complete school assignments. Computer and Internet Use Supplement to the 2001 Current Population Survey, I explored whether access to home computers increases the likelihood of school enrollment among teenagers who have not graduated from high school. A comparison of school enrollment rates revealed that 95.2% of children who have home computers are enrolled in school, whereas only 85.4% of children who do not have home computers are enrolled in school. Controlling for family income, parental education, parental occupation and other observable characteristics in
profit regressions for the probability of school enrollment, I found a difference of 1.4 percentage points. The investigated found that the Use of computers and the Internet by the child's mother and father are used as exclusion restrictions. The estimates are not sensitive to alternative combinations of exclusion restrictions and alternative samples.

Escoffery et al. (2005) investigated on internet use for health information among college students. Use of the Internet to retrieve health information is increasingly common. The authors surveyed 743 undergraduate students at 2 academic institutions to examine their Internet use, health-seeking behaviors, and attitudes related to the use of the Internet to obtain health information. Fifty-three percent of the respondents indicated that they would like to get health information online, and 28% reported that they would like to attend a health program online. This study found differences in Internet use for health information by gender and by level of Internet experience.

Buzhardt, & Semb. (2005) studied on integrating online instruction in a college classroom to improve cost effectiveness. This study compared online study guides to pen-and-paper study guides in terms of academic performance, the amount of time instructors spent grading study guides, and student Preferences. Results of this study suggested that integrating online study guides saved labor costs and increased student satisfaction while maintaining student performance.
STUDIES RELATING TO INTERNET BASED MEDICAL EDUCATION

Lum & Gross (1999) studied on telemedical education: teaching spirometry on the internet advances in portable equipment have led to routine spirometry testing outside formal pulmonary function laboratories. Practitioners ordering these tests are not formally trained in spirometry interpretation. Providing effective off-site training can be challenging. Our objective was to develop a remotely accessible computer-based tutorial for teaching spirometry interpretation to nonpulmonologists. We designed an educational module that was accessible via the Internet and was tested by 65 medical trainees at a major university medical center. In addition, the module was posted within the Virtual Hospital on the World Wide Web. Increases in spirometry interpretative skills were assessed using pre- and post-tests submitted electronically. The spirometry module significantly improved spirometry interpretation by nonspecialist trainees. This improvement included a broad increase in knowledge base and was observed independent of training level and prior spirometry reading experience. We conclude that computer-based tutorials can effectively train off-site practitioners in spirometry interpretation. This technology allows for the dissemination of educational material from a central site of expertise and provides a valuable adjunct to limited teaching resources.

Ariel Weissman (2000) evaluated the use of internet by infertile couples. This study evaluated and compared the extent of Internet use by infertile couples attending a government-funded and a private assisted reproductive technology clinic. A prospective study was conducted from one private and one public tertiary care fertility clinic in Toronto. 250 patients were approached, and 150 (60%) responded. This study made a self-administered questionnaire on socioeconomic status, fertility history, and computer and Internet use. Finally the investigated concluded that the considerable proportion of infertile couples from all socioeconomic levels are actively using the Internet with regard to their fertility problems. Health care providers should consider the Internet an important tool for all aspects of their interaction with infertile persons.

Clark (2001) studied on Education problems and Web-based teaching: how it impacts dental educators?. This article looks at six problems that sex educators encounter
and how web-based teaching might help solve them. This study suggested that when a poorly organized course with inaccurate and irrelevant content is placed online, it solves no problems. It was also reviewed the literature investigating the efficacy of off-site education as compared to that provided on-site. The conclusion of this review is that teleconference-based and web-based delivery of educational content can be as effective as traditional classroom-based teaching assuming the technologic problems sometimes associated with delivering teaching content to off-site locations do not interfere in the learning process. A suggested hierarchy for rating and comparing e-learning concepts and methods is presented for consideration.

Rossi et al. (2002) studied on the development of a website for clinical microbiology in Brazil. The quality of Brazilian health services, including clinical microbiology laboratories, varies enormously. We established a Website to provide different professionals with up-to-date information and to create a virtual Brazilian microbiology community. The Website became operational in February 2000 and had 198,976 hits in the subsequent 20 months. There were 1031 user registrations in its virtual community. Different microbiology topics were discussed and three virtual training courses (representing about 300 printed pages of information) were given. The e-learning centre and the Brazilian virtual community created by this Website have facilitated distance learning, and have encouraged professional integration within Brazilian clinical microbiology.

Harden & Hart (2002) studied on an international virtual medical school (IVIMEDS): the future for medical education? The introduction of new learning technologies, the exponential growth of Internet usage and the advent of the World Wide Web have the potential of changing the face of higher education. An international virtual medical school (IVIMEDS) with a high-quality education programme embodying a hybrid model of a blended curriculum of innovative e-learning approaches and the best of traditional face-to-face teaching is one response to these challenges. Fifty leading international medical schools and institutions are participating in a feasibility study. This is exploring: innovative thinking and approaches to the new learning technologies including e-learning and virtual reality; new approaches to curriculum planning and mapping and advanced instructional design based on the use of 'reusable learning objects'; an international perspective on medical education which takes into account the trend to
globalization; a flexible curriculum which meets the needs of different students and has the potential of increasing access to medicine.

**Short (2002)** investigated the use of information and communication technology in veterinary education. The Internet provides new opportunities to deliver distance and e-Learning to the veterinary profession both at undergraduate and postgraduate levels. There are now numerous examples of successful computer-based educational projects in UK higher education, which provide useful models for veterinary science. This will present challenges for academics who will need to adapt their teaching methodologies and students who will have to develop new ways of learning. The future of Information and Communication Technologies (ICT) in the veterinary sector is difficult to predict but it is likely to have far reaching effects on the profession.

**Kennedy (2002)** studied on dimensions of distance: a comparison of classroom education and distance education. Distance is obviously a core issue in distance education, but distance is a. factor in classroom-based education as well. Classroom-based teachers and distance educators have a common interest in the dynamics of distance. The focus of much discussion in distance education is on geographical distance and how it may be bridged. However, this focus obscures the more fundamental issue of educational distance. Educational distance includes cognitive distance, role distance and access distance. This form of distance is as potent in the classroom environment as it is in a virtual learning environment. This study found that the most significant feature of the communication pattern is the greater quantity of individual communication between student and teacher in the distance education format. Both the quantity and type of the communication in each of these modes suggest that the more communication-rich distance education format has greater potential for overcoming the problems of educational distance within this module.

**Sankar (2002)** studied on Breast cancer information on the web. In the UK breast cancer is one of the leading cancers in women. It is estimated that one in nine women may develop breast cancer at some time in their lives, and it is the commonest cause of death in women in the UK. It is vital that everyone should be aware of this disease. In the 21st century, the Internet has become an important source for information and it is predicted that 75% of the UK population will use the Internet within three years.
Shaw & Gant (2002) studied the Defences of the Internet: The relationship between Internet communication and depression, loneliness, self-esteem, and perceived social support. As more people connect to the Internet, researchers are beginning to examine the effects of Internet use on users' psychological health. This study found that Internet use was found to decrease loneliness and depression significantly, while perceived social support and self-esteem increased significantly.

Cook & Doyle (2002) carried out a study on working alliance in online therapy as compared to face-to-face therapy: Preliminary results. Online therapy, defined as the provision of mental health services through the Internet, is a growing field that has sparked an abundance of interest and controversy. A primary concern in the practice of online therapy is whether a working alliance, considered a central component of successful therapy, can develop when participants are geographically separated. Results revealed significantly higher means on the goal subscale and composite score of the Working Alliance Inventory in the online sample, suggesting that a working alliance can be adequately established in therapy delivered online. No significant differences in the level of working alliance were found within the online therapy sample with respect to modality of communication, client presenting problem, or therapist. Themes from comments suggest the importance for participants of the disinheriting effects of the medium.

Brutlag et al. (2003) studied the Advanced Immunization Management (AIM) e-Learning Project. New tools to educate immunization managers in developing countries are needed to keep these health policy makers current on the latest vaccines and procedures, and to provide support in decision-making. The goal of the AIM e-Learning Project is to deliver up-to-date and engaging web-delivered media, with solid instructional design, to an audience relatively new to web-based learning. Accuracy of information and accessibility drive our design. Our ultimate objective is to aid immunization managers in developing timely, effective and sustainable policy.

Wiecha et al. (2003) made an attempt to study on collaborative e-learning using streaming video and asynchronous discussion boards to teach the cognitive foundation of medical interviewing: a case study. This study found that the qualitative evaluations, learners reported improvements in self-awareness; increased understanding of
interviewing concepts; and benefits of online learning vs. face to face learning. Participants reported high levels of satisfaction with online learning and with achievement of course objectives. Self-reported knowledge scores increased significantly from pre-course completion to post-course completion. This study also concluded that the online education has significant potential to augment curriculum on the medical interview, particularly among students trained in community settings geographically distant from their academic medical centre.

Nelson (2003) studied on E-learning, a practical solution for training and tracking in patient-care settings. E-learning, online computer (Web)-based educational training, may be the solution to keeping health care staff abreast of new technologies, information, and regulations. Compared with traditional classroom teaching, e-learning can deliver content faster to the entire staff, be individualized to meet pace, language, and reading level. Additionally, an e-learning system provides accurate and automatic tracking. Although some teaching methodologies are key to ensuring learning (i.e., skills' demonstration or practicing negotiation skills), e-learning can decrease time away from work by providing essential information and content.

Houlihan et al. (2003) studied the impact of Internet access for people with spinal cord injuries: a descriptive analysis of a pilot study. A pilot study was undertaken regarding the effect of Internet access on health-related quality of life (HRQoL) and self-reported impact for people with spinal cord injuries (SCI). This study is unique in providing free Internet access and looking at benefits for people with disabilities. This study concluded that the study's persuasive qualitative results suggest the Internet has particular benefit to people with disabilities and that rehabilitation goals should include leisure.

Glykas & Chytas (2004) carried out a study on team work based care in speech and language therapy through web-based tools and methods. This study described the first web-based tool for diagnosis, treatment and e-Learning in the field of Language and Speech therapy. The system has been tested and piloted by potential users in Greece and the UK. This study concluded that the new introduction of methodologies, reference models of work and tools, which significantly improve the effectiveness of therapy, are particularly welcome.
Nujunkaew et al. (2004), studied on e-Learning of faculty of medicine Chulalongkorn University. The world-wide, available contemporary technology, information and communication technology (ICT), is considered to utilize their ability. Learning and teaching by these technological trends are increasing in recent years in many developed and developing countries. Students, trainees and educators can access this new modern technology in anytime and anywhere by connecting internet network, and also by this way, they can continue their medical learning, training and gaining up-to-date medical technique and knowledge till their life. The process of utilizing and incorporating these available programme techniques, such as, hypertext, web board, chat room and e-mails, for education purpose, is named as e-learning, or some may called it, e-education, e-school, etc.

Monica et al. (2004) studied on controlled trial of Internet-based treatment with telephone support for chronic back pain. The purpose of this study was to investigate the effects of an Internet-based cognitive-behavioural intervention with telephone support for chronic back pain. This study found that Internet-based self-help with telephone support, based on established psychological treatment methods, holds promise as an effective approach for treating disability in association with pain.

Winefield et al. (2004) carried out a study on setting up a health education website: practical advice for health professionals. Recently, both popular and professional publications about health care have begun to express enthusiasm for the Internet as a source of medical information and possibly of psychological support for those with serious illnesses. It is concluded that the Internet is a valuable form for their patients and supports.

Domzal-Drzewicka et al. (2004) studied on Health education and teleinformatics. In the course of the last years, the development of teleinformatics caused that the Internet services have become more and more popular. The Internet means reaching new possibilities, which are provided by fast, easy and two-direction access to the required information. These features make the Internet one of the most important tools applied in health education increasing the knowledge, skill and motivation of an individual for health self-care.
Smith & Rupp (2004) investigated on managerial implications of computer-based online/face-to-face business education: a case study. Online business education is becoming increasingly common in tertiary education in response to the growing needs of a changing student population. E-learning and teaching online business have unique challenges when compared to their more traditional classroom counterparts, which promotes the concepts of a nimble organisation from the managers' perspective. The results of this study essentially designed a profile of the typical online business education student. As increases in technology require careful consideration of its effects in the classroom for both students and practitioners, the major purpose of this research is to gauge the popularity and convenience of online education as a viable choice among students. The majority of respondents considered themselves to be either intermediate or advanced computer users; 80 percent of the respondents work either full or part-time; 68 percent of the respondents were 25 years of age or older and all were participating in their first online business education class.

Skinner & Zack (2004) carried out a study on counselling and the internet Online counselling is the latest entry in a class of indirect therapy methods that extends back to Freud's work with "Little Hans." This study recounted the history of indirect counselling in general and online counselling in particular explores the effectiveness of online counselling as a mode of therapy, deals with ethical issues, and examines the feasibility of online counselling as a business. This study concluded that online counselling is an effective and ethical form of counselling that can, with effort and care, become a feasible business.

Campbell (2004) studied on older women and the Internet. This study was designed to explore the effects that training had on older adults' willingness to use the Internet to manage their health caring. The most interesting result was that out of 70 self-volunteers, 58 were women. Results show that highly educated women who either own a computer or have access to one, and have low levels of anxiety toward computers, with strong feelings of self-efficacy toward computers and the Internet, and an internal locus of control, are more willing than men to use the Internet to find medical information to manage a chronic health problem.
Wyatt et al. (2004) made an attempt to study on extending patient's world: the Internet, health information and everyday life. Investigator of this study intended to confront the euphoric discourses of medical Internet promoters with an analysis of the actual practices of information seeking for patients confronted with aging effects (menopause, impotence). It was concluded on the idea that a comprehensive analysis of Internet use must be conceptualised and take into account situated practices within this context.

Huong (2005) carried out a study on Internet-based support for dyspnoea self-management in patients with chronic obstructive pulmonary disease possible. The purpose of this study was to determine the feasibility and preliminary efficacy of an Internet-based dyspnoea self-management program (iDSMP) for people with chronic obstructive pulmonary disease. Two groups (n = 16) were evaluated at baseline and at 3 months after completing the iDSMP, which included education, exercise, self-monitoring, and support. Dyspnoea, self-efficacy, perception of available support, and exercise behaviour were measured. Paired, independent *t* tests and Mann-Whitney *U* tests were used. This study concluded that the additional investigations of Internet-based interventions to promote self-management in patients with chronic obstructive pulmonary disease are warranted.

Romanov & Nevgi (2006) carried out a study on learning outcomes in medical informatics: Comparison of a WebCT course with ordinary web site learning material, The purpose of this study is to compare whether students' learning outcomes would be better in a designed learning environment (WebCT) than in a conventional web site (WWW) with similar course material but without special learning tools. The students of the WebCT group also experienced significantly more improvement in collaboration with the use of computers than the students in the WWW group. Based on our results, web-based learning seems to be more effective when students are provided with specially designed learning tools.

Lashley (2005) studied on teaching health assessment in the virtual classroom. Health assessment skills are vital to professional nursing practice. Health assessment has traditionally been taught using lecture, teacher-developed tests, practice and live demonstration, and interactive and computer-based learning materials. Rapid advances in
information technology during the past decade have greatly expanded distance-learning options in higher education. This study concluded that the students were able to master the technical skills of working online with minimal difficulty and reported that working online was no more stressful than attending class. The most helpful aspect of the online course was the instructor-developed video that was digitally streamed online.

Jang et al. (2005) studied on effects of a web-based teaching method on undergraduate nursing students' learning of electrocardiography. This study examined the effects of a Web-based teaching method (versus a traditional lecture method) on undergraduate nursing students' learning of electrocardiography (ECG). The Web-based learning program was developed by the authors and implemented for 4 weeks. The study used a pretest-posttest experimental design. A total of 105 senior nursing students were recruited at a university in Korea. This study found that the self-directed, Web-based ECG learning program appears to be effective in helping nursing students to interpret ECG recordings.

Schneider et al. (2005) carried out a study on internet-guided self-help with or without exposure therapy for phobic and panic disorders - A randomised controlled trial. As many sufferers from phobic and panic (phobia/panic) disorders cannot get to suitable therapists, routine aspects of therapy were delegated to internet-accessed computer-aided self-help with or without exposure instructions. Phobia/panic referrals were randomised to computer-aided self-help via the internet at home in a 2:1 ratio either by self-exposure cognitive behaviour therapy (CBT) [FearFighter (FF), n = 45] or by minimal CBT without exposure [Managing Anxiety (MA), n = 23]. Results of this study described that on self-ratings and blinded assessor ratings, patients improved equally with each form of self-help over 10 treatment weeks but significantly more on 5 out of 10 measures by week 14 (1-month follow-up) when the self-help included self-exposure instructions than when it did not. This study concluded that at the end of treatment, computer-aided CBT self-help at home via the Internet plus brief live help line support was effective with or without exposure instructions, and at 1-month follow-up it was more effective on some measures if exposure instructions had been included.
Di MariaGhalili et al. (2005) studied on webcasting: A new instructional technology in distance graduate nursing education. Webcasting is a new instructional technology used to deliver audio and video presentations via the Internet, enabling learners to participate in a live class via a personal computer. This study identified the problems encountered with implementation of Webcasting and methods used to resolve them.

Schonfeld (2005) investigated reflections on teaching health care ethics on the web. As web instruction becomes more and more prevalent at universities across the country, instructors of ethics are being encouraged to develop online courses to meet the needs of a diverse array of students. Web instruction is often viewed as a cost-saving technique, where large numbers of students can be reached by distance education in an effort to conserve classroom and instructor resources. In practice, however, the reverse is often true: online courses require more of faculty time and effort than do many traditional classes. Based on personal experience teaching an online course in health care ethics for students in the Allied Health Professions, it is evident that there are both benefits and challenges in teaching online courses, particularly in ethics. This study found that building an online community is another good way to increase the interaction of students and their engagement with the material.

Hoybye et al. (2005) made an attempt to study on online interaction. Effects of storytelling in an Internet breast cancer support group. The Internet provides new ways of forming social relationships among people with breast cancer and is increasingly used for this purpose. The results showed that the women were empowered by the exchanges of knowledge and experience within the support group. The Internet was considered a means for finding ways of living with breast cancer. Our study suggests that Internet support groups have important potential for the rehabilitation of cancer patients.
STUDIES RELATING TO E-LEARNING IN EDUCATION

Bouras et al. (2001) studied on e-Learning through distributed virtual environments. E-Learning is one of the emerging needs of the information age. Access to education is going to become crucial for the success of our information society, and therefore a lot of potential is seen in distance learning and distributed virtual environments. The communicative character of the distributed virtual environments would allow students and staff to meet in social shared spaces and engage in on-line real-time seminars and tutorials.

Garrison (2001) made an attempt to study on Video streaming into the mainstream. Changes in Internet technology are making possible the delivery of a richer mixture of media through data streaming. High-quality, dynamic content, such as video and audio, can be incorporated into Websites simply, flexibly and interactively. This study concluded that the Learning Development Centre at the University of Portsmouth have used streaming technologies together with e-learning tools such as dynamic HTML, Flash, 3D objects and online assessment successfully to deliver on-line course content in economics and earth science.

Chang-Jiun et al. (2002) made an attempt to study on building a CAL expert system based upon two-phase knowledge acquisition. With the fast growing and globally accepted e-learning technology, Computer-Assisted Learning (CAL) system, which can provide the individualized materials, becomes a matter of great importance. The CAL-ES concluded that this study is useful for student learning and easy for teachers maintaining.

Dawn Forman et al. (2002) studied on e-Learning and educational diversity. This article discusses the nature of electronic learning (E-learning) and argues for its centrality to educational diversity and the shift from teaching to learning. It is argued that E-learning is the new wave strategy that sits comfortably with other strategies developed for the 21st century. The study concluded by asserting that adequate resources, particularly learner support, will distinguish quality or good programmes from bad ones.
Gabriela Kennedy (2002), studied on intellectual property issues in e-Learning. The growth in the distance education market is leading to the co-modification of education. Education is nowadays available beyond school, college and university, on CD-ROM or online (Cochrane, 1999). Private sector partners in joint ventures with traditional universities are entering the distance education /e-learning market and are competing with traditional universities. Several types of intellectual property rights are bundled in distance learning courses. Written texts or drawings attract copyright; special technology or business methods for the course may attract patent protection. Finally, the ultimate packaging and branding of a distance/e-learning course is an essential factor on which the effective marketing of the course depends.

Wright & Betts (2002) studied on Virtual universities--the reality of e-learning?. With the growth of the internet and world wide web new ways of exchanging information are emerging, barriers are being overcome, new partnerships and ways of working are emerging.

KekkonenMoneta & Moneta (2003) carried out a study on E-Learning in Hong Kong comparing learning outcomes in online multimedia and lecture versions of an introductory computing course. This study evaluated the effectiveness of Web-based highly interactive and multimedia-rich e-learning materials by comparing students learning outcomes in the lecture and online versions of an introductory computing course. The lecture and online students achieved comparable factual learning outcomes and the online students outperformed the lecture students in applied-conceptual learning. Findings suggest that the use of carefully designed interactive e-learning modules fosters higher-order learning outcomes.

Keenan & Yao-kueiLee (2006) studied the influence of system characteristics on e-learning use. The investigator proposed and tested alternative models that seek to explain student intention to use an e-learning system when the system is used as a supplementary learning tool within a traditional class or a stand-alone distance education method. Data were collected from 259 college students. This study concluded that the Structural equation modelling provided better support for a model that hypothesized stronger effects of system characteristics on e-learning system use.
Wong et al. (2004) carried out a study on enhancement of prosthetics and orthotics learning and teaching through e-Learning technology and methodology. A Write-Once Publish-Everywhere model was used to create and deliver on-line clinical training and education for undergraduate prosthetics and orthodontic students. This project consisted of three phases: developing multimedia learning and teaching tools, integrating these tools into the curriculum (combination of e-Learning and live practical sessions), and evaluating the outcomes. Video-based multimedia contents were captured and integrated with graphic, audio and text into a PowerPoint presentation software format. The web-based content was integrated into the WebCT platform for course management. This study found that the qualitative feedback indicated that students appreciated the easy access, integrated and interactive approach of the text material, concise PowerPoint presentation, demonstration video and the on-line case discussion via the WebCT platform. The Educators appreciated the ability to easily maintain contents and publish the modules across multiple media without recreating the contents.

Virginio et al. (2004) studied on perspectives and challenges in e-Learning: towards natural interaction paradigms. The role of Information and Communication Technologies (ICTs) in educational development has been world-wide recognized as a priority in order "to reinforce academic development, to widen access, to attain universal scope and to extend knowledge, as well as to facilitate education throughout life" (Council of Ministers of Education, Canada, Report of the Canadian Delegation to the UNESCO World Conference on Higher Education, Paris, October 5–9, 1998. It is concluded that the visual component of the e-learning experience is emphasized as a significant feature for effective content development and delivery, while the adoption of new interaction paradigms based on multi-dimensional metaphors and perceptive interfaces is presented as a promising direction towards more natural and effective learning experiences.
Browne et al. (2004) studied on Comparing lecture and e-learning as pedagogies for new and experienced professionals in dentistry. OBJECTIVE: To evaluate the relative effectiveness of e-learning versus lecture learning in VDPs and trainers. The results of the study was significantly greater retention for the trainees occurred from lecturing rather than e-learning, and for the trainers e-learning was significantly more successful than lecturing. Finally this study concluded that the small numbers in this study preclude wide generalisation. However, the results point to the benefits of face-to-face interaction for inexperienced staff, and the benefits of the speed and manageability of e-Learning for busy, more experienced staff. The need for a discussion facility to be incorporated into ICT innovations to CPD (via, for example, online 'chat rooms') is also highlighted, with the potential of greatly enhancing e-learning efficacy.

DeRouin et al. (2004) made an attempt to study on Optimising e-Learning: Research-based guidelines for learner-controlled training. The widespread availability of the Internet has revolutionized the way organizations train their workforces. With e-learning methods, learning can take place on-demand, and trainees can be given greater control over their learning than ever before. This study offered guidelines for preparing trainees for learner-led instruction, the design of learner-controlled training, and the creation of workplace conditions that facilitate successful learner-led training.

Chih-Ming Chen (2005) carried out a study on Personalized e-learning system using Item Response Theory. Personalized service is important on the Internet, especially in Web-based learning. This study personalized e-Learning system based on Item Response Theory (PEL-IRT), which considers both course material difficulty and learner ability to provide individual learning paths for learners. This study concluded that applying Item Response Theory (IRT) to Web-based learning could achieve personalized learning and help learners to learn more effectively and efficiently.
Michael et al. (2000) found out the effectiveness of Interactive health communication in preventive medicine Internet-based strategies in teaching and research. Interactive health communication using Internet technologies is expanding the range and flexibility of intervention and teaching options available in preventive medicine and the health sciences. Advantages of interactive health communication include the enhanced convenience, novelty, and appeal of computer-mediated communication; its flexibility and interactivity; and automated processing. The investigator concluded that the Innovative and thoughtful applications of this new technology could increase the consistency, reliability, and quality of information delivered.

Forman et al. (2002) studied the nature of electronic learning (E-learning) and argue for its centrality to educational diversity and the shift from teaching to learning. It is also argued that E-learning is the new wave strategy that sits comfortably with other strategies developed for the 21st century. As such it challenges the traditional 'banking concept' of education, where the teacher is seen as the front of knowledge as long as students acknowledge this and are eager to absorb the teacher's vital knowledge. This study found that the adequate resources, particularly learner support, would distinguish quality or good programmes from bad ones.

Di Lieto et al. (2002) carried out a study on Prenatal telemedicine and teledidactic networking. A report is on the TOCOMAT project. Teledidactic networking, both as e-Learning and e-teaching, represents a new integrated system of computer-aided education for the development and management of distance learning programs. Our study evaluated the effectiveness of teledidactic applications in the first Italian project in conventional and computerized telecardiotocography (TOCOMAT). The findings also show that a well-structured distance-learning course can improve clinical, technical and managerial skills and behaviour of healthcare operators by promoting the kind of professional continuing education a modern medical school should provide.

Reis et al. (2003) made an attempt to study on an e-learning care giving program for prostate cancer patients and family members. E-health interventions have the potential
to augment care-giving training for management of chronic disease. This study concluded that the best designed for a hybrid delivery utilizing is both web-based resources and a CD-ROM. Feedback from 45 prostate patients and family members from a Midwest cancer centre on perceived needs for care giving training underscores the potential value of a computer supported intervention for some patients and families.

**Stevenson & Ibe (2003)** studied on devising an e-learning package for vital signs monitoring. Nursing and midwifery pre registration students start their placements early in their first semester. Although they quickly become proficient at performing a particular skill, they often have a limited knowledge of the physiological changes and specific applications associated with that skill. An electronic learning package was therefore developed to help students apply their knowledge and to prepare for their skills assessment in vital signs monitoring.

**Schultze-Mosgau et al. (2004)** studied the concept of a clinical round as a virtual, interactive web-based, e-learning model for interdisciplinary teaching. The objective of establishing a web-based, virtual e-learning concept for demonstrating case reports independent of time and place, with the possibility of an interactive examination, diagnosis, and interdisciplinary therapy decision making for medical and dental students. Anonymzed case reports of diseases in the oral and maxillofacial region and the interdisciplinary treatment were digitised and prepared in a web-based format. The technical aspect was based on connecting flash modules with videos and animation, and monitoring through HTML and JavaScript. To conclude the virtual clinical round, a check on learning success was conducted in the form of a multimedia multiple choice test.

**Duplaga et al. (2004)** studied on telelearning standards and their application in medical education. Medial education, both on the graduate and postgraduate levels, has become a real challenge nowadays. The volume of information in medical sciences grows so rapidly that many health professionals experience essential problems in keeping track of the state of the art in this domain. e-learning offers important advantages to medical education continuation due to its universal availability and opportunity for implementation of flexible patterns of training. This study concluded that the era of growing health consumer awareness, patients are also perceived as the target audience for
medical digital libraries. As a case study of Computer-Based Training systems, the Medical Digital Video Library is presented.


Yang (2004) carried out a study on a novel self-organizing E-Learner community model with award and exchange mechanisms. How to share experience and resources among learners is becoming one of the hottest topics in the field of E-Learning collaborative techniques. An intuitive way to achieve this objective is to group learners, which can help each other into the same community and help them learn collaboratively. This study concluded that this mechanism can organize learner communities properly and efficiently; and that it has sustainable improved efficiency and scalability.

Naidr et al. (2004) carried out a study on long-term retention of knowledge after a distance course in medical informatics at Charles University Prague. Distance education is instructional delivery that does not constrain the student to be physically present in the same location as the instructor. The electronic distance learning called e-learning has evolved with the development of computer technologies and electronic communication. This study found that e-Learning can expect a better retention of knowledge from independent, responsible, and positively motivated students who can easily operate information technologies.

Mutter et al. (2005) conducted a study on digital technologies and quality improvement in cancer surgery. The study describes computer technology products and services allow unlimited cross sharing of information. Education taught through multimedia methods, and through the Internet, is available anywhere and any time just like surgical simulation, robotics and virtual reality. The Internet eventually offers uninterrupted communication links between healthcare providers (teaching, training or multidisciplinary telementoring included). Computer and IT technologies will
undoubtedly contribute to standardized cancer treatment modalities and determined guidelines for good clinical practice worldwide.

**Javier & David (2005)** carried out a study on use of a computer-assisted program to improve Meta cognition in persons with severe intellectual disabilities. Meta cognition and self-regulation are processes extremely relevant to education of persons with intellectual disabilities computer-assisted training has shown to be successful in training specific abilities and general cognitive processes, interventions of this nature centering on metacognitive development are rare. A computer-assisted program aimed in this direction is presented. It was applied to 21 adolescents and young adults with a mean IQ of 36. This study concluded that the metacognitive scores improved for this group at post-test relative to pre-test to a degree significantly different from gains found in an equivalent control group. Improvement was clear from the first sessions of the intervention and was maintained at a 6-month follow-up.

**Pridemore et al. (2005)** studied obtaining sensitive information from a wary population: A comparison of telephone and face-to-face surveys of welfare recipients in the United States. These studies reveal the benefits of technological developments such as audio computer assisted self-interviewing (A-CASI) in interview methodology, especially for surveys of sensitive behaviour and information. Assess survey mode effects on reported rates of alcohol and drug use among welfare recipients, an especially important group for scholars and public health agencies.

**Wautier et al. (2005)** studied on electronic learning: interactive learning in medicine or Socrates in electronic guise. E-learning has been widely used for training in different fields. More recently, it was introduced during medical studies or for continuous medical education. The Canadian Universities are pioneers in e-learning creating special departments dedicated to pedagogy. Developing countries like Brazil or Central Europe have made some pilot experiments, which were successful. Several electronic companies have given a free access to the programmes and sites. The use of electronic media leads to an adaptation of teaching methods making them more interactive.

**Stausberg et al. (2005)** studied on trends in free WWW-based E-learning Modules seen from the Learning Resource Server Medicine (LRSMed). E-learning a lot
of material is available on the World Wide Web (WWW) free of charge. E-learning modules are made available for medical students by means of a metadata description that can be used for a catalogue search. The number of resources included has risen enormously from 100 in 1999 up to 805 today. Especially in 2004 there was an exponential increase in the content of Learning Resource Server Medicine (LRSMed). This study concluded that the scene of free E-learning modules on the WWW is ready to meet current challenges for efficient training of students and continuing education in medicine.

Jeffries (2005) made an attempt to study the development and testing of a Hyperlearning Model for design of an online critical care course. Many U.S. colleges and universities are discovering innovative and exciting ways of using information technology to promote the process of teaching and learning and to extend education to new populations of students. Nurse educators in academia and service settings are developing interactive e-learning programs or courses to meet this need, and to either enhance practice concepts and basic skills or orient new associates to the clinical organization. In continuing education programs, students need flexibility and convenience to concurrently meet their personal and academic goals, and consumer demand for online instruction is increasing. The challenge is to prepare a comprehensive, high-quality, cost-effective e-learning course to meet educational standards and competencies.

Aitken & Tabakov (2005) studied on evaluation of the e-Learning material developed by EMERALD and EMIT for diagnostic imaging and radiotherapy. e-Learning materials in X-ray diagnostic radiology, nuclear medicine, radiotherapy, ultrasound and magnetic resonance imaging for medical physics graduates and other healthcare professionals. To assess the effectiveness and relevance of the e-Learning material, a series of evaluations by student users groups plus experts in medical physics education and training were undertaken. This study concluded that the e-Learning material appears promising and provides a framework for further developments in the field. Insight into users and providers views is important if developers are to provide relevant and worthwhile educational learning opportunities.

Della et al. (2005) studied on E-learning as educational tool in emergency and disaster medicine teaching. E-learning is a new project for education based on the
adoption of new computerised, multimedia and telematic technologies. Its application has deeply changed the concept of a teacher-based teaching to a student-centred educational project. It offers a great flexibility in the educational methodology, in the administration of contents, in the synchronous and/or asynchronous interaction between teachers and students, in the organisation and in the structure of the course, in the educational plans, in the support, the tracking and the evaluation of the student. E-learning could represent a great resource and a possible revolution in the concept of education and in the field of medical education as well. In some specific fields of application, as Emergency and Disaster Medicine, where the interaction between the student, the teacher and the patient, even if of great importance, are difficult to obtain in a quiet setting and have a lot of organizing, technical and economic troubles, e-learning approach could find a fertile field of application.

Riveros et al. (2005) carried out a study on e-Learning experience: a teaching model with undergraduate surgery students in a developing country. Colombian medical students do not have an effective approach to electronic facilities in site or at home, in contrast with most of American and European medical programs. This study found that the model implemented as a pilot study had a good acceptance amongst undergraduate surgery students and faculty.

Stoeva & Cvetkov (2005) studied on e-Learning system ERM for medical radiation physics education. The objective of this paper is to present the Education for Radiation in Medicine (ERM) e-Learning System. The system was developed, tested and piloted in the Inter-University Medical Physics Centre, Plovdiv, Bulgaria. The ERM e-Learning System is an integrated on-line system for remote education covering aspects of Medical Radiation Physics education (M.Sc. level). It provides user-friendly interface and optimised functionality with three different access levels: trainee, professor and administrator. The minimum server requirements and the standard client side working environment turn the system into a good, cost effective and easy to support solution for remote education.
Varga-Atkins & Cooper (2005) carried out a study on developing e-Learning for inter professional education. An evidence-based, inter professional educational course involving first-year undergraduate students studying medicine, nursing, physiotherapy and occupational therapy has been piloted at the University of Liverpool. Part of the content was developed in an online format. These were grouped under six themes, corresponding to the developmental stages of e-learning. This study found that the highest number of comments fell under the theme of preparation, followed by content development, evaluation, general design and structure, and finally delivery.
STUDIES RELATING TO YOGA FOR DIABETIC PROBLEMS

Jain et al. (1993) investigated on the response pattern of non-insulin dependent diabetics to yoga therapy. One hundred and four patients showed a fair to good response to the yoga therapy. Finally this study concluded that yoga, a simple and economical therapy, might be considered a beneficial adjuvant for non-insulin-dependent diabetic’s patients.

Malhotra et al. (2002) carried out a study on effect of Yoga asanas on nerve conduction in type 2 diabetes. The result of this study found that the Yoga asanas have a beneficial effect on glycaemic control and improve nerve function in mild to moderate Type 2 diabetes with sub-clinical neuropathy.

Sahay et al. (2002) made an attempt to study on lifestyle modification in management of diabetes mellitus. This study concluded that the exercise improves the condition of a diabetic patient. Exercise includes yoga practices, which have a role to play in the prevention of type 2 diabetes.

Bharshankar et al. (2003) studied on the effect of Yoga on cardiovascular system in subjects above 40 years. This study was conducted to examine the effect of yoga on cardiovascular function in subjects above 40 yrs of age. This results of the study indicated that yoga reduces the age related deterioration in cardiovascular functions.

Khalsa (2004) studied on Yoga as a therapeutic intervention: a bibliometric analysis of published research studies. Although yoga is historically a spiritual discipline, it has also been used clinically as a therapeutic intervention. A bibliometric analysis on the biomedical journal literature involving research on the clinical application of yoga has revealed an increase in publication frequency over the past 3 decades with a substantial and growing use of randomized controlled trials. Types of medical conditions have included psychopathological (e.g. depression, anxiety), cardiovascular (e.g. hypertension, heart disease), respiratory (e.g. asthma), diabetes and a variety of others. A majority of this research has been conducted by Indian investigators and published in Indian journals, particularly yoga specialty journals, although recent trends indicate increasing contributions from investigators in the U.S. and England. Yoga therapy is a relatively...
novel and emerging clinical discipline within the broad category of mind-body medicine, whose growth is consistent with the burgeoning popularity of yoga in the West and the increasing worldwide use of alternative medicine.

Jayasinghe (2004) studied on Yoga in cardiac health (a review). Yoga is an unconventional form of physical exercise that has been practised over a long period of time in the Indian sub-continent. It has gained immense popularity as a form of recreational activity all over the world. This study found that the majority of the rehabilitation workers believe that incorporating non conventional forms of physical exercise such as yoga definitely would enhance efficacy and add value.

Singh (2004) carried out a study on role of Yoga in modifying certain cardiovascular functions in type 2 diabetic patients. This study found that better glycaemic control and stable autonomic functions could be obtained in Type 2 DM cases with yoga asanas and pranayama.

Madanmohan et al. (2004) evaluated the modulation of cardiovascular response to exercise by yoga training. This study reports the effects of yoga training on cardiovascular response to exercise and the time course of recovery after the exercise. After two months of yoga training, exercise-induced changes in these parameters were significantly reduced. It is concluded that after yoga training a given level of exercise leads to a milder cardiovascular response, suggesting better exercise tolerance.

Bijlani et al. (2005) made an attempt to study the comprehensive lifestyle education program based on yoga that reduces risk factors for cardiovascular disease and diabetes mellitus. This study observation suggested that a short lifestyle modification and stress management education program leads to favorable metabolic effects within a period of 9 days.
STUDIES RELATING TO YOGA FOR HEART DISEASES

Mohan et al. (1986) investigated the effect of yoga type breathing on heart rate and cardiac axis of normal subjects. This study concluded that the changes in heart rate and QRS axis during the inspiratory and expiratory phases of Pranayama type breathing were similar to the changes observed during the corresponding phases of deep breathing.

Shannahoff-Khalsa & Kennedy (1993) evaluated the effects of unilateral forced nostril breathing on the heart. Three experiments are described that employ impedance cardiography to monitor the effects of Unilateral Forced Nostril Breathing (UFNB) on the heart. These results demonstrated a unique unilateral effect on sympathetic stimulation of the heart that may have therapeutic value.

Telles et al. (1995) studied on autonomic changes during "OM" meditation. The autonomic and respiratory variables were studied in seven experienced meditators (with experience ranging from 5 to 20 years). The meditators showed a statistically significant reduction in heart rate during meditation compared to the control period (paired 't' test). The investigator interpreted a sign of increased mental alertness, even while being physiologically relaxed (as shown by the reduced heart rate).

Raghuraj et al. (1998) investigated the effect of two selected yogic breathing techniques of heart rate variability. The heart rate variability (HRV) is an indicator of the cardiac autonomic control. The results suggest that kapalabhati modifies the autonomic status by increasing sympathetic activity with reduced vagal activity. The study also suggests that HRV is a more useful psycho physiological measure than heart rate alone.

Peng et al. (1999) studied on exaggerated heart rate oscillations during two meditation techniques. We report extremely prominent heart rate oscillations associated with slow breathing during specific traditional forms of Chinese Chi and Kundalini Yoga meditation techniques in healthy young adults. This study found that the marked variability of the beat-to-beat heart rate dynamics during such profound meditative states challenges the notion of meditation as only an autonomically quiescent state.
Manchanda et al. (2000) investigated the retardation of coronary arteriosclerosis with yoga lifestyle intervention. Yoga has potential for benefit for patients with coronary artery disease though objective, angiographic studies are lacking. This study concluded that the Yoga lifestyle intervention retards progression and increases regression of coronary arteriosclerosis in patients with severe coronary artery disease. It also improves symptomatic status, functional class and risk factor profile.

Bernardi et al. (2001) carried out a study on breathing patterns and cardiovascular autonomic modulation during hypoxia induced by simulated altitude. To assess the influence of different breathing patterns is on autonomic cardiovascular modulation during acute exposure to altitude-induced hypoxia. Well-performed slow yogic breathing maintains better blood oxygenation without increasing ventilation (VE) (i.e. seems to be a more efficient breathing) and reduces sympathetic activation during altitude-induced hypoxia.

Vyas & Dikshit (2002) evaluated the effect of meditation on respiratory system, cardiovascular system and lipid profile. In this study, respiratory functions, cardiovascular parameters and lipid profile of those practicing Raja Yoga meditation (short and long term meditators) were compared with those of non meditators. Vital capacity, tidal volume and breath holding capacity were significantly higher in short and long term meditators than non meditators. The results shows that Raja Yoga meditation provides significant improvements in respiratory functions, cardiovascular parameters and lipid profile.

Madanmohan et al. (2002) studied on modulation of cold pressor-induced stress by shavasan in normal adult volunteers. Shavasan is known to enhance one's ability to combat stressful situations. It is concluded that Shavasan can enhance one's ability to withstand stress induced by CPT and this ability can be achieved even with seven days of shavasan training.

Telles et al. (2004) studied on an evaluation of the ability to voluntarily reduce the heart rate after a month of yoga practice. The study aimed at determining whether novices to yoga would be able to reduce their heart rate voluntarily and whether the magnitude of reduction would be more after 30 days of yoga training. The results suggest
that yoga training can enable practitioners to use their own strategies to reduce the heart rate, which has possible therapeutic applications.

**Shannahoff-Khalsa et al. (2004)** studied on hemodynamic observations on a yogic breathing technique claimed to help eliminate and prevent heart attacks: a pilot study. This study concluded that the Preclinical studies are warranted to examine the possible long-term effects of this technique that appear to reset a cardio respiratory brain-stem pacemaker. We postulate that this effect may be the basis for the purported yogic health claim.

**Yogendra et al. (2004)** carried out a study on beneficial effects of yoga lifestyle on reversibility of ischaemic heart disease: caring heart project of International Board of Yoga. Yoga based lifestyle modifications have been earlier shown to be beneficial in coronary artery disease in a small number of patients. This study concluded that the Yoga based lifestyle modifications help in regression of coronary lesions and in improving myocardial perfusion. This is translated into clinical benefits and symptomatic improvement.

**Harinath et al. (2004)** studied on effects of Hatha yoga and Omkar meditation on cardio respiratory performance, psychological profile, and melatonin secretion. This study concluded that the these observations suggest that yogic practices can be used as psycho physiologic stimuli to increase endogenous secretion of melatonin, which, in turn, might be responsible for improved sense of well-being.

**Taneja et al. (2004)** made an attempt to study on yogic versus conventional treatment in diarrhoea-predominant irritable bowel syndrome: a randomized control study. This study was conducted to evaluate the comparative effect of yogic and conventional treatment in diarrhoea-predominant irritable bowel syndrome (IBS) in a randomised control design. This was accompanied by an increase in electro physiologically recorded gastric activity in the conventional intervention group and enhanced parasympathetic reactivity, as measured by heart rate parameters, in yogic intervention group. The study indicates a beneficial effect of yogic intervention over conventional treatment in diarrhoea-predominant IBS.
Peng et al. (2004) studied on heart rate dynamics during three forms of meditation. This study was designed to quantify and compare the instantaneous heart rate dynamics and cardiopulmonary interactions during sequential performance of three meditation protocols with different breathing patterns. The results support the concept of a "meditation paradox," since a variety of relaxation and meditative techniques may produce active rather than quiescent cardiac dynamics, associated with prominent low frequency heart rate oscillations or increases in mean resting heart rate.

Vijayalakshmi et al. (2004) carried out a study on modulation of stress induced by isometric handgrip test in hypertensive patients following yogic relaxation training. The results of this study showed that yoga training optimises the sympathetic response to stressful stimuli like isometric handgrip test and restores the autonomic regulatory reflex mechanisms in hypertensive patients.

Clay et al. (2005) studied on the metabolic cost of hatha yoga. To determine the metabolic and heart rate (HR) responses of hatha yoga, 26 women (19-40 years old) performed a 30-minute hatha yoga routine of supine lying, sitting, and standing asanas (i.e., postures). The intensity of hatha yoga may be too low to provide a training stimulus for improving cardiovascular fitness. Although previous research suggests that hatha yoga is an acceptable form of physical activity for enhancing muscular fitness and flexibility, these data demonstrate that hatha yoga may have little, if any, cardiovascular benefit.
Goyeche (1982) carried out a study on Asthma: the yoga perspective. Part II: Yoga therapy in the treatment of asthma. The result of this study concluded that yoga therapy is most effective with asthma.

Nagarathna & Nagendra (1985) studied on Yoga for bronchial asthma: a controlled study. Fifty-three patients with asthma underwent training for two weeks in an integrated set of yoga exercises, including breathing exercises, suryanamaskar, yogasana (physical postures), pranayama (breath slowing techniques), dhyana (meditation), and a devotional session, and were told to practise these exercises for 65 minutes daily. This study shows the efficacy of yoga in the long-term management of bronchial asthma.

Nagendra & Nagarathna (1986) carried out a study on an integrated approach of yoga therapy for bronchial asthma: a 3-54-month prospective study. The results of this study established the long-term efficacy of the integrated approach of yoga therapy in the management of bronchial asthma.

Tamarin et al. (1988) studied on increased muscle enzyme activity after yoga breathing during an exacerbation of asthma. This was related to his yoga breathing exercises, which he used to enhance the delivery of aerosolised bronchodilators. As his condition improved and the use of these yoga manoeuvres diminished, the muscle enzyme levels fell to normal.

Jain et al. (1991) investigated the effect of yoga training on exercise tolerance in adolescents with childhood asthma. Forty-six young asthmatics with a history of childhood asthma were admitted for yoga training. It was concluded that yoga training is beneficial for young asthmatics.

Jain & Talukdar (1993) evaluated the yoga therapy programme for patients of bronchial asthma. A study of the effect of yoga therapy programme on 46 indoor patients of chronic bronchial asthma on exercise capacity, pulmonary functions and blood gases was conducted. A one-year follow-up study showed a good to fair response with reduced
symptoms score and drug requirements in these subjects. It is concluded that yoga therapy is beneficial for bronchial asthma.

Fluge et al. (1994) studied on long-term effects of breathing exercises and yoga in patients with bronchial asthma. To compare the effects of breathing exercises (BE) or Yoga (Y) on the course of bronchial asthma we studied 36 subjects with a mild disease. The study found that both, BE and Y, caused a significant amelioration of the mental state but only the BE induced a significant improvement of lung function parameters compared to the individual baseline values.

Khanam et al. (1996) investigated the pulmonary and autonomic functions of asthma patients after yoga training. "The concept of yoga is helpful for the treatment of Bronchial Asthma", has created a great interest in the medical research field. This study found that the "comprehensive yogic life style change programme for patients of Bronchial Asthma" have shown significant benefit even within a short period.

Vedanthan et al. (1998) studied on clinical study of yoga techniques in University students with asthma: a controlled study. Adult asthmatics, ranging from 19 to 52 years from an asthma and allergy clinic in a university setting volunteered to participate in the study. This study concluded that the Yoga techniques seem beneficial as an adjunct to the medical management of asthma.

Birkel & Edgren (2000) carried out a study on Hatha yoga: improved vital capacity of college students. The vital capacity of the lungs is a critical component of good health. Vital capacity is an important concern for those with asthma, heart conditions, and lung ailments; those who smoke; and those who have no known lung problems. The main objective of this study was to determine the effects of yoga postures and breathing exercises on vital capacity. These findings were consistent with other research studies reporting the positive effect of yoga on the vital capacity of the lungs.

Sathyaprabha et al. (2001) investigated the efficacy of naturopathy and yoga in bronchial asthma--a self-controlled matched scientific study. Asthma is one of the common psychosomatic illnesses influenced by many factors. This study concluded that the patients reported a feeling of well being, freshness and comfortable breathing.
Naturopathy and yoga helps in inducing positive health, alleviating the symptoms of disease by acting at physical and mental levels.

**Manocha et al. (2002)** studied on Sahaja yoga in the management of moderate to severe asthma: a randomised controlled trial. Sahaja Yoga is a traditional system of meditation based on yogic principles which may be used for therapeutic purposes. This study concluded that this randomised controlled trial has shown that the practice of Sahaja yoga does have limited beneficial effects on some objective and subjective measures of the impact of asthma.

**Cooper et al. (2003)** investigated the effect of two breathing exercises (Buteyko and pranayama) in asthma: a randomised controlled trial. The background of this study was Patients with asthma who were interested in the use of breathing exercises but their role is uncertain. The study concluded that the Buteyko breathing techniques can improve symptoms and reduce bronchodilator use but does not appear to change bronchial responsiveness or lung function in patients with asthma.

**Sabina et al. (2005)** made an attempt to study on Yoga intervention for adults with mild-to-moderate asthma: a pilot study. The background of this study was preliminary studies investigating yoga and breath works for treating asthma have been promising. This study advances the field by providing an active control. The objective of this study was to determine the effectiveness and feasibility of a yoga and breath work intervention for improving clinical indices and quality of life in adults with mild-to-moderate asthma. The study concluded that the Iyengar yoga conferred no appreciable benefit in mild-to-moderate asthma. Circumstances, under which yoga is of benefit in asthma management, if any, remain to be determined.
Berridge et al. (2000) studied on Computer Aided Learning (CAL) for the education of patients and family practice professionals in the personal care of diabetes. The investigator made a computer-aided learning (CAL) system that was developed for the education of both patients and practitioners concerning diabetes and its care. This interactive system employs multimedia technology to teach practical skills and promote and consolidate theoretical understanding. The investigated concluded that the system would improve patient self-care, and in the long-term reduce the incidence of diabetic complications and their associated costs.

Istvan-Tibor Nebel (2002) evaluated a computer based interactive diabetes education program designed to train the estimation of the energy or carbohydrate contents of foods. Evaluation of a computer based interactive diabetes education program designed to train the estimation of the energy or carbohydrate contents of foods. The training success was calculated for each user from the data sets after multiple repetitions of the same exercise. Age, weight, type of diabetes, previous training and computer experience of 126 patients with type 1 or 2 diabetes from three different German diabetes centres were documented. In this study, the investigator concluded that the computer program indicated a good acceptance and operator convenience. Moreover, there was a significant training success in patients who have never used a structured diabetes education program before. Therefore, the potential impact of the program is to support but not to replace structured diabetes education programs and to further motivate and attract patients to diabetes education programs.

Berridge & Roudsari (2003) made an attempt to study on diabCAL: evaluating computer-aided learning for diabetes patient education. The design and development of a computer-aided learning tool for the education of patients with diabetes and for the training and support of practice nurses providing diabetes care have been previously reported. DiabCAL is a broad and comprehensive learning tool, which can be accessed as a modular course or a desktop quick-reference. A final hybrid formative-summative evaluation assessed usability and acceptability of the system. Evaluations were conducted by technical experts and users, and findings of the final evaluation study, conducted by
patents, confirmed that diabCAL was acceptable to most users - that is, interesting and perceived to be useful - even to those with little previous computer experience.

Prasad et al. (2004) evaluated the quality and contents of diabetes mellitus patient education on Internet. Internet is an extremely useful medium in this respect. Web-based information is seldom the subject of systematic investigation for its accuracy and appropriateness for patients. The main objective of this study was to evaluate the of web-based diabetes patient education material for well-accepted evaluation criteria and core education concepts. The result of the study concluded that the Considerable variability in quality of diabetes patient education web sites was found with respect to core educational concepts and HSWG criteria. Inclusion of evidence-based medicine concepts, role of family support, and enhancement in customized content and easier feedback mechanism in the web-sites can be a significant development in the direction of patient-centered diabetes care.

Thakurdesai et al. (2004) evaluated the quality and contents of diabetes mellitus patient education on Internet. This study was to evaluate web-based diabetes patient education material for well-accepted evaluation criteria and core education concepts. This study found that the inclusion of evidence-based medicine concepts, role of family support, and enhancement in customized content and easier feedback mechanism in the web-sites can be a significant development in the direction of patient-centered diabetes care.
Anna Stromberg (2002a) evaluated the educating nurses and patients to manage heart failure. Patients with heart failure need education in order to adapt to their chronic syndrome and perform self-care. Computer-based education has been found to be a preferred and effective compliment to the education provided by health care professionals. The effect of new materials and methods needs to be evaluated in order to improve the overall effectiveness of the education provided. The patient with heart failure should have an active role in this development and evaluation. This study found that the computer-based education is needed for people with heart failure and the overall effectiveness of heart failure nurses.

Anna Stromberg (2002b) conducted a study on interactive education on CD-ROM—a new tool in the education of heart failure patients. The study aimed to develop and evaluate whether a computer-based program for patients with heart failure was user-friendly, could be operated by elderly patients and gave sufficient information about heart failure. A total of 42 patients aged 51–92 years tested the program and completed afterwards a questionnaire. Three heart failure nurses evaluated how the patients used the program and their attitudes towards the computer. All patients could use the program, despite the fact that only six had used a computer before. The patients were satisfied with the computer-based information and appreciated that the program was interactive, flexible and contained a self-test. They thought it was a better way of receiving information than reading a booklet or watching a video about heart failure. The nurses reported that the patients were positive towards the computer and seemed to understand the information and that the patient education was less time-consuming, when the patients could seek knowledge on their own.
Dennis et al. (2004) investigated the dissemination of the British guideline on the management of Asthma 2003. This study reported that the dissemination activities undertaken during the 18 weeks following the guideline launch. To facilitate implementation a range of educational materials were produced reflecting the key messages from the guideline. In addition to postal mailing of the guidelines to appropriate healthcare professionals, both educational materials and the guidelines were made freely available from the BTS and SIGN websites. In this study the investigator concluded that the most respondents rated the materials as useful or very useful. Using websites to disseminate guidelines is a cost-effective method of informing health professionals of their content and is a more active process than the passive receipt of mailed copies. The availability of interactive educational materials for use in teaching appears to have been popular.

Amy et al. (2005) studied on educational interventions – computers for delivering education to children with respiratory illness and to their parents. Educational interventions for children with asthma can result in both clinical and psychological improvements. However, traditional education programs have been hampered by lack of resources and doubts concerning long-term benefits. Researchers have looked to computer technology to overcome some of these obstacles and respiratory conditions. It has been the focus for a number of educational computer programs. In this study, the investigator concluded that Computer technology is flexible, can be tailored to individuals’ information needs, provides ongoing educational support and promotes active learning. However, there can be problems around accessibility, both in terms of computer ownership and technological literacy. Furthermore, Internet sites are largely unregulated and of variable quality. It is essential that educational computer interventions are evidence-based and rigorously evaluated to identify who will benefit most from these packages.
DISCUSSION

Various studies around the world have confirmed that computer technology allows flexibility, inclusiveness, collaboration, authenticity, relevance and extended institutional boundaries. From the review of the studies on “Computer Assisted Instruction (CAI)”, it was found that the CAI helps to develop reading skills effectively and saves time for student and faculty ((Porinchak, 1984 and Lowery, 1988). Further studies on CAI revealed that it is an effective strategy for academic achievement in various subjects viz., Set Theory, Numeracy with the population, Statistics, mathematical work, Teaching Physics, Indian Economics, English and computer-based training (Purushothaman and Stella, 1991; Nicol and Anderson, 1999; Basturk, 2005; Ko, Chih-En, 1992; Christmann, et. al., 1997; Yuen-kuang Cliff Liao, 2005; Rangaraj, 1995; Balasubramanian and Jayaraman 2000; Anandhan, 1998; Shindle, 1998; Wenli Tsou, 2002 and Tsai, 1992). CAI with Peer Interaction is used as a means of improving the quality of teaching and learning process effectively and made a strong relationship between the overall attitude of a learner and the utilization of a computer when compared to the Lecture Method (Muhammad and Al-Jabri, 1998; Kadhiravan, 1999 and John Milliken, 2002). CAI helps children with reading disabilities and enhances expertise, creativity, motivation and self-actualization among the learners (Annie Magnan, Jean Ecalle, 2004 and Winslow Burleson, 2005).

Computer-assisted learning is a hot topic and is evolving parallel with the rapidly growing computer technology. Today, modern computers with sophisticated software are able to create a new dimension in the application of many important pedagogical principles and philosophies. Modern computers with excellent multimedia applications are capable of simulating a realistic situation that enriches the educational environment, improves the learning process, and brings new challenges to the process of “learning by doing.” Some of the studies revealed that the Computer-based education is useful for patients with cancer (Ramirez 2002). CAI is not only useful for patients but also more effective method of learning for students in Medical College. Various studies from Medical Education revealed that the Computer Assisted Learning (CAL) is a useful approach for teaching different subjects viz. gynaecological surgery, Undergraduate
Psychiatry, RadioGraphics and Dental Medicine for Medical student (Jha, 2002; Guerandel, Felle Malone, 2003; Bruce, 2003; Gupta, 2004 and Hohne, 2004). CAL is also easy to use, informative and promoted independence and self-directed study in psychiatric nurses learning (Margaret Denny and Agnes Higgins, 2003).

A computer-based system, which includes different media, has great potential for delivering learning material in Education. Multimedia technology permits the user to combine digital still images, video, animation, graphics, and audio. Multimedia creates interest learners by helping them in understanding a concept easily. Interactive Multimedia and Multimedia-supported predict-observe-explain tasks have increased the level of student control, quality of peer discussions, accuracy, response times, and enthusiasm in geographic and environmental education (Feeney, 2003 and Kearney, 2004). Streamed video is a useful resource to support learning for various people viz. nurses’ student, teaching library users and pedestrian safety teaching (Green, et. al. 2003; Drabenstott, 2003 and Glang, 2005). Multimedia based stories on CD-ROM with multiple modes of reading cues, such as print, pictures, and sign language, might be an enjoyable and interesting supplement to standard reading practices (Gentry, Chinn and Moulton, 2004). Interactive computer-based patient prenatal genetic screening and testing education tool increased patient knowledge and did not increase patient anxiety (Griffith, et. al., 2005).

The convergence of media fostered by the rise of the Internet is reshaping international teaching learning process and changing relations between teachers and learners. The tripartite relationship of Teacher, Learner, and Media is made tighter by the convergence powers of the Web. Beyond materials and other communicational functions, the Internet presents new challenges to systems of international relationship between the teacher and learners. Many studies proved that the information revolution is proceeding on numerous fronts, redefining the role and power of the learning media and presenting policy-makers with a tool that they must contend with as well as use for their own purposes. In worldwide web environments the individual have more self-efficacy, motivation and self-study ability (Liaw, 2002 and GalEzer and Lupo, 2002). College students are increasingly interested to retrieve health information through Internet (Escoffery, et. al. 2005). Students from Universities and Colleges, who experienced
Internet-based learning in different subjects, have also accepted that the course websites are well supported as well as an effective learning tool for getting higher scores in multiple-choice tests (Lin, et al. 2002 and Selim, 2003). Unfortunately, students with mental retardation in Taiwan were often not considered capable of utilizing computers and online learning but later they found that the learning by integrating pictures, communication symbols, voices and animations are the most effective on learning for mental retardation learner (Li, et al. 2003). Internet-based Learning Environment has rich connections with numerous resources and a variety of perspectives, thus constructing appropriate learning environments to provide different kinds of challenges for learners (Meichun, 2004). Integrating online study guides saved labor costs and increased student satisfaction while maintaining student performance (Buzhardt and Semb, 2005).

Internet is an extremely useful medium and an essential component of chronic disease care and effective health promotion. Web-based information is seldom the subject of systematic investigation for its accuracy and appropriateness for patients. Many studies found that the people all over the world and willingness to use the Internet to manage their health care. Defense of the Internet found that the use of Internet decreased loneliness and depression (Shaw and Gant, 2002). Particularly Internet has been therapeutically beneficial for various people with physically and mentally handicapped (Houlihan, et al., 2003 and Glykas, 2004). Internet-based treatment with telephone support for chronic back pain is an effective approach for treating disability in association with pain (Monica Buhrman, 2004). Internet support groups have important potential for the rehabilitation of cancer patients (Hoybye, et al., 2005). Internet is a valuable form for their patients and supports as a source of medical information and psychological support (Winefield, Coventry and Lambert, 2004). Many features of the Internet makes it as one of the most important tools applied in health education increasing the knowledge, skill and motivation of an individual for health self-care (Domzal-Drzewicka, 2004). Internet based counseling is an effective and ethical form of counseling that can, with effort and care, become a feasible business (Skinner and Zack, 2004). Older adults' show willingness to use the Internet to manage their health care (Campbell, 2004). Internet-based interventions promote self-management in patients with chronic obstructive pulmonary disease (Huong, 2005). Internet based learning of electrocardiography (ECG)
at University of Korea found that the web based learning programmes appears to be self-directed and effective in helping nursing students to interpret ECG recordings (Jang, et. al., 2005). Webcasting is a new instructional technology used to deliver audio and video presentations via the Internet, enabling learners to participate in a live class via a personal computer (DiMariaGhalili, Ostrow and Rodney, 2005).

Worldwide, electronic learning (E-learning) has become an important part of the education agenda in the last decade. New developments in e-learning and increasingly sophisticated learning technologies are beginning to make a major impact in U. K. Universities. With the rapid change in all types of working environment, there is a need to implement electronic learning (e-learning) systems to train people in new technologies, products, and services. A number of pedagogic approaches are often quoted in the e-learning literature - constructivism, communities of practice, and collaboration but many studies found that much of what is described could more easily be explained in terms of didactic and behaviourist approaches to learning. E-Learning is one of the emerging needs of the information age (Bouras, 2001) that allow students and staff to meet in social shared spaces and engage in on-line real-time seminars and tutorials. University of Portsmouth have used streaming technologies together with e-learning tools such as dynamic HTML, Flash, 3D objects and online assessment successfully to deliver on-line course content in economics and earth science (Garrison, 2001). Carefully designed interactive e-learning modules have fostered higher-order learning outcomes (KekkonenMoneta and Moneta, 2003). Visual component of the e-learning experience is emphasized as a significant feature for effective content development and delivery, while the adoption of new interaction paradigms based on multi-dimensional metaphors and perceptive interfaces is presented as a promising direction towards more natural and effective learning experiences (Virginio, 2004). Trainees can be controlled over their learning through e-Learning methods than ever before (DeRouin, Fritzsche and Salas, 2004).

Medical education has witnessed recently an accelerated and worldwide trend of change. The race is on for curricula that are relevant, appropriate and accountable. There has been a great deal of interest in educational strategies in the last decade. This has been associated with the development of new concepts such as "problem-based learning", 

103d
"student-centered learning", and "integrated teaching". Learning activities and course design in the new context of e-Learning, such as in web-based courses involves a change both for teachers and students. The system is expected to enhance the acceptance and efficiency of conventional ways of learning by supplementing and supporting them and creating new methods for imparting knowledge. Many studies on e-Learning in Medical Education concluded that the Computer-assisted instruction (CAI) programs based on Internet technologies, especially on the World Wide Web (WWW), provide new opportunities in medical education. Innovative and thoughtful applications of this new technology could increase the consistency, reliability, and quality of information delivered (Michael, 2000). Adequate resources, particularly learner support, would distinguish quality or good programmes from bad ones (Forman, 2002). An electronic learning package was developed to help students apply their knowledge and to prepare for their skills assessment in vital signs monitoring (Stevenson, 2003). E-Learning methods for nurses' education significantly reduces medical errors by providing "just-in-time" reference and device training (Knapp, 2004). Distance course in medical informatics at Charles University of Prague found that e-Learning can expect a better retention of knowledge from independent, responsible, and positively motivated students who can easily operate information technologies (Naidr, 2004). The scene of free E-learning modules on the WWW is ready to meet current challenges for efficient training of students and continuing education in medicine (Stausberg, 2005). E-Learning have been successfully applicable for the training of medical, nursing or engineering students and continuing professional development in various areas (Jonsson, 2005). E-Learning represented a great resource and a possible revolution in the concept of education and in the field of medical education (Della, 2005).

Yoga is the union occurring between mind, body and spirit. It is very popular today all over the world. Yoga offers man, a conscious process to solve the menacing problems of unhappiness, restlessness, emotional upset, hyper-activity and different physiological stress processes, in the society and helps to evoke the hidden potentialities of man in systematic and scientific way by which man becomes a fuller individual. Yoga Education in the classroom was monitored, a marked improvement in their responses, creativity, receptivity, memory, willpower and behaviour was found. Different studies
found that the Yoga is an alternative simple and economical therapy for many diseases such as Diabetes, Asthma, Chronic pains, Heart Problems, and other Psychological problems (Jain, 1993 and Khalsa et. al., 2004). Yogasanas plays a major role in the prevention of type 2 diabetes (Malhotra, et. al., 2002 and Sahay, et. al., 2002). Yoga reduces the age related deterioration in cardiovascular functions (Bharshankar, et. al., 2003). Yogasanas and Pranayamas improved the glycaemic control and stable autonomic functions (Singh, 2004). Comprehensive lifestyle education program based on Yoga reduces risk factors for cardiovascular disease and diabetes mellitus (Madanmohan, 2004 and Bijlani, et. al., 2005).

Yoga reduces anxiety, promotes well-being and improves quality of life. Many studies concluded that Yoga has been useful and effective improvement to patients with heart disease and hypertension. Effects of yoga type breathing and unilateral forced nostril breathing (Mohan, et. al., 1986 and Shannahoff-Khalsa and Kennedy, 1993) on heart rate and cardiac axis of normal subjects have effects on sympathetic stimulation of the heart that may have therapeutic value. "OM" and "Raja Yoga" meditation improves mental alertness, respiratory functions, cardiovascular parameters and lipid profile (Telles, et. al., 1995 and Vyas, et. al., 2002). The heart rate variability (HRV) is an indicator of the cardiac autonomic control. Yoga modified the autonomic status by increasing sympathetic activity with reduced vagal activity (Raghuraj, et. al., 1998). Yoga lifestyle intervention retards progression and increases regression of coronary atherosclerosis in patients with severe coronary artery disease. It also improves symptomatic status, functional class and risk factor profile (Manchanda, et. al., 2000). Well-performed slow yogic breathing maintains better blood oxygenation without increasing ventilation and reduces sympathetic activation during altitude-induced hypoxia (Bernardi et. al., 2001). Shavasan can enhance one's ability to withstand stress induced by CPT (Madanmohan et. al., 2002). Yoga based lifestyle modifications help in regression of coronary lesions and in improving myocardial perfusion (Yogendra, et. al., 2004). Yogic practices such as Hatha yoga and Omkar meditation can be used as psychophysiologic stimuli to increase endogenous secretion of melatonin, which, in turn, might be responsible for improved sense of well-being (Harinath, et. al., 2004). Meditative techniques may produce active rather than quiescent cardiac dynamics,
associated with prominent low frequency heart rate oscillations or increases in mean resting heart rate (Peng, et. al., 2004). Yoga training optimises the sympathetic response to stressful stimuli like isometric handgrip test and restores the autonomic regulatory reflex mechanisms in hypertensive patients (Vijayalakshmi, et. al., 2004). Hatha yoga is an acceptable form of physical activity for enhancing muscular fitness & flexibility, and cardiovascular benefit (Clay et. al., 2005).

There is growing interest on the part of both patients and providers in the use of complementary and alternative medicine (CAM) therapies to treat allergy, otitis media, and asthma. Although yoga is historically a spiritual discipline, it has also been used clinically as a therapeutic intervention. Clinical application of yoga has revealed an increase in publication frequency over the past 3 decades with a substantial and growing use of randomized controlled trials. Types of medical conditions have included psychopathological (e.g. depression, anxiety), cardiovascular (e.g. hypertension, heart disease), respiratory (e.g. asthma) (Goyeche, 1982), diabetes and a variety of others (Khalsa et. al., 2004). Various studies from Indian and European countries found that the Yoga therapy is a relatively novel and emerging clinical discipline within the broad category of mind-body medicine, whose growth is consistent with the burgeoning popularity of yoga in the West and the increasing worldwide use of alternative medicine. Yoga exercises, including breathing exercises, suryanamaskar, yogasana (physical postures), pranayama (breath slowing techniques), dhyana (meditation) show the efficacy of yoga in the long term management of bronchial asthma (Nagarathna, et. al., 1985; 1986; Birkel, et. al., 2000; and Manocha, et. al., 2002). Tamarin (1998) found that breathing exercise enhanced the delivery of aerosolized bronchodilators in realising in the muscle enzyme levels felling to normal. Yoga training is also beneficial for young asthmatics (Jain, et. al., 1991). Yoga therapy is beneficial for chronic bronchial asthma (Jain, et. al., 1993, Fluge, et. al., 1994, Khanam, et. al., 1996). Yoga techniques seem beneficial as an adjunct to the medical management of asthma (Vedanthan, et. al., 1998). Vital capacity is an important concern for those with asthma, heart conditions, and lung ailments; those who smoke; and those who have not known lung problems.

The main focus of the e-Learning is on creation of an open and flexible Internet platform for delivering multimedia-based learning units and the development of adaptive
and intelligent authoring systems. Different studies from Medical Education have proved that the e-Learning is the best method of learning environment for people with various diseases viz. Diabetics problems, Heart Diseases and Asthma problems. Computer-aided learning (CAL) system is being able to improve patient self-care, and in the long-term reduce the incidence of diabetic complications and their associated costs (Emma-Jane Berridge, 2000). Computer based interactive diabetes educational program with easier feedback is potential impact to support, motivate, interesting and attract people with diseases (Istvan-Tibor Nebel, 2002; Berridge and Roudsari 2003 and Thakurdesai, Kole and Pareek 2004). Patients with heart failure need education in order to adapt to their chronic syndrome and perform self-care. Computer-based Interactive educational tools have been found to be a preferred and effective compliment to the education provided by health care professionals (Dennis, 2004 and Anna and Strömberg 2002).
CONCLUSION

The changing global context represents real challenges to the future growth of educational instructions. Recent developments in Information Technology establishes a new education paradigm, for which self-directed learning is a foundation strategy. Lifestyles are changing as learning is taking place throughout the life. e-Learning is one of the emerging needs of the information age. Access to education is going to become crucial for the success of our information society, and therefore a lot of potential is seen in distance learning and distributed virtual environments. Face to face classroom instruction is not feasible for creating a life long learning environment. Web-related techniques and equipment grow, the Internet has become popular as a major channel for providing a wide variety of information. Web-based learning, which has the potential to effect fundamental changes in the design of learning processes and the education system, has been gaining momentum with an irreversible trend. Patient education is widely regarded as an essential component of chronic disease care and effective health promotion. Internet is extremely useful medium in this respect. Web-based information is seldom the subject of systematic investigation for its accuracy and appropriateness for patients. In the present study an attempt was made to study on "EFFECTS OF DIFFERENT STRATEGIES OF WEB-BASED INSTRUCTION IN THE CONTEXT OF PRACTISING YOGA ONLINE".