

# Is E-Learning the Solution and Substitute for Conventional Learning?

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## ABSTRACT

*In this information age, knowledge plays an important role to improve people's standard and quality. Therefore e-learning has become increasingly important as instruments for organizations as it supports the attributes of knowledge sharing and dissemination. Conventional learning that applied nowadays in most universities has been assumed, by educators to restrict learners from accessing knowledge and information from outside world. This condition has bound the learners from improving their education standard. So e-learning has become the best solution to all organizations in conducting their training effectively. Problems faced by universities also can be solved with e-learning that educators and students from around the world can communicate together without boundary. This study was conducted to assess that substitution of conventional learning with e-learning can improve the education standard and knowledge of people especially in this information world. This paper was conducted mainly among students and lecturers in educational learning. It starts with a definition on e-learning and conventional learning to provide a basic knowledge about e-learning and conventional learning. It continues with the introduction, the objectives, limitations and the scope of the topic as the guidelines to guide the research to be conducted thoroughly and precisely. This is followed by explanation of opinions and comments about the topic based on some additional sources or articles. A combination of procedures such as questionnaire and interview are used as instrument tool for this survey. The data gathered from the survey were analyzed to determine that e-learning provide more benefits than conventional learning. We conclude the research by saying that e-learning is the best solution for the conventional learning to solve the problems existed in conventional learning.*

**Keywords:** E-learning, Conventional learning, knowledge sharing,

## 1.0 INTRODUCTION

E-Learning is becoming a recent phenomenon. Due to the vast improvement of computer technologies, more and more schools and institutions are applying this concept. "It is now feasible to offer remote students full, interactive participation in a class that would previously have been restricted to students who were attending locally. These technologies include such alternatives as two-way interactive, compressed video and electronic mail. One of the advantages of these technologies is a greater ability to support collaboration among students as well as between student and professor."(Bricken, 1990; Shneiderman, 1993) It made up of several methods of learning and use network technology to create, deliver and to enhance learning capabilities through Internet. It has been applied in school, college and business widely.

This online learning enable people around the world access for information they needed and this enable knowledge to be distributed widely.

## E-LEARNING

E-Learning is an online education that is delivered in a synchronous or asynchronous format. Synchronous format is a condition where lessons are carried out in real-time and led by instructor, while asynchronous format is self-paced whereby each individual progress according to ones pace. E-Learning requires the use of a network environment, also known as "cyberspace".

E-Learning is meant to reach students who encounter difficulties in attending traditional classes. This may due to distance, personal difficulties and responsibilities, or even time constraints. "Students who enroll in distance education courses tend to be aged 20-40, employed at least part-time, and sometimes unable to meet the entrance requirements to regular programs" (Faibisoff & Willis, 1987).

## VIRTUAL CLASSROOM

The concept of Virtual Classroom is an extension from E-Learning, which occurs when there is a physical separation of instructor and student. "In the near future, it will become apparent that computers and other forms of technology are heavily used in classrooms and their objectives and results of those objectives will be heavily monitored and scrutinized."(Goals 2000; Texas Education Agency 2000)

Virtual Classroom makes use of live broadcast, interactive video and electronic mail (e-mail). This electronic networking provides access to various resources, and e-mail enables student to communicate with friends, instructors, and even technical experts easily. This provides student with the opportunity to personally communicate with relevant parties and exchanging ideas.

To implement Virtual Classroom successfully, there are a few criteria to be followed:

- Appropriate to the technology
- Consistent with the instructor's philosophy and style of teaching
- Convenient, accessible and relevant to students
- Highly interactive
- Well-organized and well presented.

## BENEFIT OF E-LEARNING

1. Convenience and Flexibility

2. Offers Individualized Instruction
3. Self-paced
4. Broader Range of Opinions
5. Greater Range of Feedback
6. More Direct Control
7. High Level of Interaction
8. High Levels of Participation, Engagement and Concentration

#### **DRAWBACK OF E-LEARNING**

1. Technology Issue  
There are uncertainties in this subject. For instance, it is unsure that the existing technology infrastructure can accomplish the learning or training goals.
2. Inappropriate Content  
Though limited, there are possibilities that certain E-Learning materials might contain inappropriate content. Such contents might be materials that include sensitive issues or materials that are not suitable for students.
3. Cultural Acceptance  
There might be possibilities that student demographics and psychographics may predispose them against using computers. Therefore E-Learning will not be a suitable medium of education for them.

#### **CONVENTIONAL LEARNING**

There is an argument that conventional learning is the best way in maintaining a learning process. Other learning methods include e-learning is considered to be less efficient. Universities have a proud tradition of combining learning, research, teaching, and professional development (Peter Cheese, 2003). This caused by the reason that conventional learning is more efficient than e-learning in some aspects. Some professors and researchers believe that face-to-face instruction able to convey the meaning of the lecturer than using distance learning. Conventional learning also gives more chance to students to meet their lecturer and discuss with them directly. Distance learning through Internet widens the gap between lecturers and students and this may lead to message being interpreted wrongly by students.

A second reason higher education resists e-learning is the absence of many of the technical skills needed as well as the experience in marketing and customer service necessary to support and develop this new market (Peter Cheese, 2003). From this field, can see that e-learning only provide the learning skills but do not provide the technical skills. Students can learn many from the e-learning but they don't know basic knowledge for the technical skills. Technical skills only can develop when student involves themselves and take experience from it. Besides that, many universities are attempting some e-learning initiatives, but on a very limited scale (Peter Cheese, 2003). This happen because funding for such initiatives at the university level is another challenge and need right base of the skills. University also

needs to deliberate the outcome for establish and introducing the e-learning direct to the students. To make the e-learning successful introduce in the universities area needed a great deal of time and resources to become sustainable.

E-learning still do not used widely in educational as many universities are resisted to apply e-learning as their learning method. This is because many professors insist that e-learning is ineffective and reluctant to accept e-learning. They usually afraid to use computer and do not have enough experience in high technology. They may needs a long time in training sessions if e-learning is applied and this may waste their time as they felt. This make them decided that online learning wasn't the way to go – not as effective as classroom (George Siemens, 2002). Some professor afraid their role as main instructor has been replaced by computer. This condition made them feel that they are not needed anymore in university.

The other challenge that is faced by universities is the cost involved. Views that e-learning reduces the expense of delivering learning are false (George Siemens, 2002). Cost that involved in developing e-learning is enormous that many universities cannot afford it. This is because e-learning is an Internet enabled learning that uses a wide range of network technology to design, deliver and administer it. Also, university may need high technical skill of personnel in providing training to lecturers and the salary involved to hire a group experienced personnel is extremely high. This way has increased the burden of the university.

However, it has been found that the use of technology in learning give a positive effect to the learning process as committed by students. There are a few ways that may be applied to solve the problems that faced by universities. Government support is very important in education. The great benefit of governmental support is that it can provide sponsorship and commitment (Peter Cheese, 2003). We need government sponsorship as a mean to sponsor the cost in introducing e-learning into universities. Universities need a development model that provides a common capability backed by government, allowing universities to exploit e-learning and focus on content and teaching. Within the sponsor from government, the universities can provide an inclusive e-learning platform for the students. Besides that, the universities also can support e-learning-based degree courses and modules for the entire student around the world. Government also can encourage other private companies to participate and support for the funding needed by universities. These private companies may able to hire for personnel that specific technical skills and technical infrastructure that needed in bringing e-learning into universities. Collaboration with other university also can develop a strong and skillful

management team that can design an effective and compelling plan in managing the process of e-learning efficiently.

The greatest asset to e-learning is its ability to allow the student to control the learning process by offering the student an immediate, action oriented, practical learning experience (Vernon Pursley, 2002). The most important for the e-learning process is the flexibility. This means that students are free to skip the material which they already familiar with and focus on the other new material. Students are also able to review the information as often as they want, depend to their interest, needs and skill level. However, the conventional learning makes the progress learning too slow or too fast, this makes the student lose interest to learn it. Besides that, e-learning is convenience. Students are free to set their own schedules and not bound by time. It makes the process learning can happen at anywhere, anytime and save much of the time. But for conventional learning, the students can't set the schedules by themselves. The timetable is fit by lecturer or teacher. The student must follow the timetable to gain the knowledge. It also wastes the time for the student who stays far from school because they need to travel to and from class.

Besides that, e-learning also provides some advantages which are not found in traditional learning. The benefits that held in e-learning can be a competitive advantage for a higher education against other private education. In e-learning, all the notes and tutorials are updated online, online courses are offered and this enables knowledge to be spread widely to students around the world. Learning design expertise (Peter Cheese, 2003). Various multimedia tools and software are used in administering the e-learning like video conferencing, collaboration, online discussion forums and authoring tools. With web based learning, communication among learners from remote place are enhanced, knowledge being acquired and transferred among the learners, the ability to conduct an open discussion and students can learn based on their own schedule. All these facilities create creative abilities that can not be seen in conventional learning.

## **2.0 METHODOLOGY**

### **PARTICIPANTS**

Participants were 78 students, 1 female lecturer from the University of Malaya and 1 male High School teacher from Catholic High School, Petaling Jaya. Majority of the student participants are from the Faculty of Computer Science and Information Technology while the rest were from Faculty of Engineering, Faculty of Education, Faculty of Arts and Social Science, Faculty of Business and Faculty of Science. Most of the student participants are currently or previously involved in some sort of e-Learning, therefore are capable of understanding the

concepts of e-Learning and most of all suitable for our research.

### **DATA COLLECTION**

A survey was conducted for the students. Survey questions were distributed to them while they are hanging around in the lobby or in the studying room. Each piece of survey question was given out one by one to avoid duplication of the results collected. This is because if there were a whole lot of students doing the survey questions together, the possibility of getting the same answers from them are quite high due to their peer influence and this will affect our research very much. The survey consisted of 16 short questions which took the students the fastest 10 minutes and the slowest 20 minutes to complete. Before the survey questions were given to the students, we had made sure the student taking part in the survey has a personal computer and somehow or other been involved in e-Learning before. This is to make sure that they comprehend fully what e-Learning is about and its pros and cons. Participants were informed that the content of the survey question would not be disclosed to the public in any manner.

Other than conducting a survey for the students, we have also conducted interviews with a lecturer of University of Malaya and an experienced High School teacher. The experience of both would be of the best interest of us and by sharing them with us, would enlighten us about the view of e-Learning from a teacher or a lecturer's point of view. As we have planned, both the candidates represent some contrasts with regard to background and demographic characteristics. As mentioned above, the female lecturer is in a position which has a high degree of exposure in e-Learning. In contrast, the male teacher has been teaching his classes for over ten years with limited experience in e-Learning.

The design of the questions was open-ended and non-directive as possible. Overall, the questions provided some consistency of structure in each interview while also allowing the participants to add their opinion whatever they felt was worthy data to the study. Below are some examples of the interview questions:

- What is lecturer's opinion about E-learning?
- Have you been involved in any type of e-learning before? (If yes, for how long? if not, why not?)
- In your opinion, by implementing e-Learning, does or would it affect the outcome of the classes conducted? (In a positive way or negative way?)
- Would you suggest substituting e-Learning for conventional learning? (Why do you think so? Please explain.)
- Could you visualize our country's education system in 5 years time based on the changes made recently?

Follow-up questions were used when applicable to probe the participant for more than a yes or no answer and to elaborate on a particular theme when it arose.

Questions were asked for the individual to explain why the feelings accompanied the circumstance. In all, interviewees were asked more of their personal opinions, knowledge and experience rather than the technical view of e-Learning.

#### **DATA ANALYSIS**

Survey questions were collected on the spot and checked for completeness. If there were any unfilled questions, further approach was done to make sure the particular candidate could complete the survey questions. There were some survey questions which we overlooked when collecting and therefore resulted the particular survey question to be voided from our result. Other than completeness, we also carried out analysis on each survey question collected. We were very caution about the attitude of the candidates while they were filling in the survey questions. This to prevent them to simply fill in the questions provided. Secondly, we also analyzed the answers answered to prevent any contradicting answers from them. For example: **1.** e-Learning is better than conventional learning methods. (Answer: **Strongly agrees.**) **2.** In your opinion, e-Learning has the below mentioned benefits: (Answer: **None**).

There were amazingly high number of cases similar to the above mentioned situation occurred. There was nothing we could do but to void their answers from out research.

As for the interviews, reports of the interview were generated and were checked by the interviewee for validity and reliability of the report prior to be analyzed by us.

### **3.0 RESULTS**

#### **QUESTIONNAIRE**

For the survey, our group has chosen forty members (students) from around University Malaya. The survey samples are taken from six different faculties, ranging from the Faculty of Computer Science and Information Technology, which made up the largest number of students being surveyed here, at 63% or 41 students out of sixty five, the Faculty of Arts and Social Science, Faculty of Business and Faculty of Education, with 6 students each, the Faculty of Engineering with 3 students and the Faculty of Science, with only 2 representative. More samples had been taken from the Faculty of Computer Science and Information Technology because assumptions are made that their degree are more related to the e-learning system.

#### **KNOWLEDGE OF E-LEARNING**

From the survey, we found that 73.8% of those surveyed, or 48 out of the 65 students, have heard and proclaimed to have a clear idea of the e-learning concepts, while 26.5%, or the remaining 17 students, stated not sure. None of them stated having no idea. Therefore, it can be concluded that e-learning is no

longer something foreign or new to the community nowadays. At the survey form we also added a definition for e-learning as a short briefing about it. Thus, they can keeps on answering the remaining questions.

#### **PEOPLES EXPERIENCED IN E-LEARNING**

From the 65 students who filled the survey form, 36 students or 55.4% of them admitted to not having any first hand experience on any kind of e-learning methods before. The rest, 29 students said that they did have experienced at least one time with e-learning methods such as reading e-book, CCNA text and etc. Most of them who did experience it are the FSKTM students. It is because they had attended a course called Network Technology which needs all the students to do every chapter and tests on-line based on the CCNA qualification.

#### **PEOPLE'S OPINION OF E-LEARNING CAN ENHANCE LEARNING SKILL**

When they were questioned on whether they think that the e-learning system could enhance their learning skills better compared to the conventional way, 40% or 26 of them stated yes. Meanwhile, 39 of them said no. From the 39 students who said no, related to the question before this, we can conclude that 10 students were spoke from assumption, remain 29 of them were spoke from experience.

#### **PEOPLE AGREEABLENESS OF E-LEARNING BENEFIT**

60% of them agreed that e-learning system saves money. 95.4% or majority of them choose the paperless environment as a benefit, while 61.5% are looking forward to enjoy the interactive that e-learning provides for its participants. 36.9% think that mobility is a benefit, a 29.2% think e-learning would be easier to understand, with 41.5% presuming e-learning lessons are easier to store. The lowest is 10% who pick high availability as a benefit while the 21% stated other benefits.

#### **PEOPLE'S OPINION OF E-LEARNING CAN CONTRIBUTE TO MALAYSIA**

When they were asked to state their opinion on the possibility of e-learning making any contribution to the national education system's growth, 55.4% or 36 students, answered no. Meanwhile, 26.1% or 17 students are claiming that they are not sure and 18.5% or 12 persons saying.

#### **PEOPLE AGREEABLENESS OF E-LEARNING SHORT COMING**

After a more in depth analysis, we found that highest percentage of the students which are 45 persons of them or 69.2%, think that e-learning is only available to personal computer owners, and 36 persons out of those surveyed, or 55.4% of the total, agreed that there are other short comings in the e-learning system. Apart from that, 40 students or 61.5% did not acknowledge that poor interactivity among the

participants is an e-learning turnoff. Meanwhile, the lowest percentage is 35.4% out of the grand total had claimed the e-learning is more expensive than the conventional education system.

#### **PEOPLE RECOMMEND THE E-LEARNING AS A PART OF COUNTRY EDUCATION SYSTEM**

From the survey, we found that a huge majority or 87.5% of the students supported the motion of implementing e-learning into our country's education system, while 5 of the respondents disagreed. This means that more people are viewing e-learning as beneficiary than not. One of the reason why such results can be occurs is the impact of continues improving of ICT in our country.

#### **COMPARISON OF E-LEARNING AND CONVENTIONAL LEARNING**

A comparison was made between e- learning and the conventional learning method and it was found that the conventional system held an edge over the e-learning method; with 67.5% of them preferring conventional learning and 60% think conventional learning is better. However, there are 65% think e-learning is more interesting.

#### **PEOPLE'S OPINION OF E-LEARNING CAN SUBSTITUTE CONVENTIONAL LEARNING**

Regarding the future of e- learning, the respondents were asked if they think e- learning would one day being able to substitute the conventional way of learning in schools in the future, 57% think it would not and remaining 43% who do not. Therefore, from this survey we ca concluded that conventional learning is being more accepted than not, even though a higher sum of people agreeing that e-learning provides more advantages over the conventional learning method.

#### **4.0 DISCUSSION**

What degree of e-learning can deliver benefits for student? What is the short coming of e-Learning? Can e-learning be a substitute for conventional learning? These are the major questions asked in the research.

#### **THE BENEFITS OF E-LEARNING**

There are a lot of benefits for e-learning. According to our research, e-learning have the following benefits:

- E-learning can save money
- E-learning can provide a paperless environment.
- E-learning has more mobility and portable.
- The teaching materials of e-learning are easy to be store.
- The contents of e-learning are easier to understand.
- There is higher accessibility of e-learning contents.

**Does e-learning really save money?** According to our research, there were 39 students disagreed and 26

students agreed for this statement. Before our group members start this survey, we expect that students mostly will agree that e-learning can save money for the process of teaching and learning. The survey result showed an opposite way that e-learning can't save money. Our group thought that this is not a successive survey because the sample of this survey are too small, in additional, the students are mostly from the Faculty of Computer Science and Information Technology (FSKTM). Therefore, the result from this survey maybe bias and are not accurate. Even though this survey may not be accurate in some way, this survey is still considered to be able to provide some guide line for us to gain more understanding of students' view of e-learning.

According to Kevin Kruse (2002), e-learning could actually reduce overall cost. It is because e-learning can eliminate the cost of instructor's salaries, meeting room and class room rentals, the travel fees, lodging, and meals are directly quantifiable.

But in other perspective, the cost of implementing and monitoring an e-learning environment is also expensive. The fees of yearly licensing, hardware maintenance and purchases also will burden the budget of e-learning. As a conclusion, we need to do further research if we want to know whether e-learning can save money if compare with conventional learning.

#### **Does e-learning provide a paperless environment?**

According to our survey, it is clearly showed that e-learning can provide a paperless environment. The benefits are also related with the first benefits that we have discussed. Students and teachers need not spend money to photocopy notes and buy books to study or reference.

Again, all the material can be store automatically and systematically. But there are still weaknesses, even though there are a lot of study resources available in the Internet, sometimes, it is not as good as a printed notes and book, which we can simply write down our comments and important point at the page of the book.

#### **E-learning is more convenient than conventional learning because it is portable.**

According to our survey, there are 55% of students agree that e-learning is mobility which students can use their PDA , notebook when they are traveling everywhere.

According to a sample survey of University of Edinburgh, "Student Views of E-Learning-WebCT user 2004", a similar question had been asked, it goes "Do students view ICT as a benefits for their study". The table below shows a very large majority stating that ICT is a benefit to their studies, and remarkably few seeing it as a distraction. This emphasizes the degree to which students have.

	Total	Percent (%)	
		Female	Male
a very considerable benefit	78.9	78.4	79.4
something of a benefit	19.3	19.2	19.7
something of a distraction	1.6	2.1	0.9
a very considerable distraction	0.2	0.3	0.0

(Depicted from a survey from University of Edinburgh WebCT users 2004)

This table of survey shows that e-learning has a very considerable benefit and it is not a distraction. From this table, we can conclude that the existing e-learning can give more benefits to students.

**E-LEARNING DISADVANTAGE**

E-learning also has some short coming, among them are:

- E-learning has poor interactivity between students and teacher or lecturer compare with conventional learning.
- E-learning is only available to PC users.
- E-learning is more expensive.

According to our study, there are 38% of students disagree that e-learning has poor interactivity if compare with conventional learning. The communication level of e-learning also can be enhanced with the advanced technology, for example, the using the application of video camera, multimedia and sound. The only short coming of e-learning is lacking of “human touch”. For example, students can only see an online course mates through a video camera or some through texts at one time and the lacking of eye-contact and touches between them are crucial in building a humane society. If compared with conventional learning, students can share their emotion, have human contacts, smile and even cry together. These kinds of life experience can only be acquired from conventional learning.

**Can E-Learning Substitute Conventional Learning?**

According to our survey analysis, there are 57% of the students accepted that e-learning can substitute conventional learning. There are still 43% of students who does not agree that e-learning can substitute conventional learning.

Meanwhile, Kevin Kruse (2002) also stated that: “e-learning does have its limitations, among them are:

- **Technology issues** of the learners: most commonly technophobia and the unavailability of required technologies.
- **Reduced social and cultural interaction** can be a drawback. The impersonality, suppression of communication mechanisms such as body language, and elimination of peer-to-peer learning that are part of this potential disadvantage are lessening with advances in communications technologies.

For the overall conclusion, the existing of e-learning is really good to improve current education culture, but it is still lacking of some features to substitute conventional learning. It will be a problem for our society if the students graduate from schools and universities lacking in communication techniques and most important of all being humane, and producing uneducated experts in the future. Imagine if the future of our education is fully based on e-Learning, what would be of our society? No doubt, because of the rapid advancement of our technology, e-Learning will gain more acceptances from the public. But we have to be very careful in adopting the “correct” methodology. E-learning is better to be as a supplement for a real class room and the degree of e-learning as a supplement of real class room can be determined according to the abilities of the institutes and developer and the users’ ability to adapt.

**5.0 CONCLUSION**

It clearly shows that e-learning has more benefit that conventional learning. Problems that exist within conventional learning can be solved partly through e-learning. By utilizing e-learning effectively, university’s ability to transfer knowledge and expertise to society can be enhanced. Also we are able to predict the future of learning in order to meet the needs of the changing world through continuous e-Learning activities. Before that, we must understand the problems that may happen within e-learning. Integration of high technology with multimedia tools must be emphasized because e-learning relies heavily on technologies. Also, collaboration with government, private organizations and other universities is important to overcome the high cost involved in develop e-learning. We also need to provide experienced personnel with technical skill needed to implement e-learning. So, we could say that e-learning is a good solution to conventional learning as it is able to solve most of the problems that exist in conventional learning. However, e-learning has its own disadvantages and problems that needs to be solved before it can be implemented successfully. So e-learning can not substitute conventional learning wholly as there are still many aspects that must be considered before e-learning can replace conventional learning.

## REFERENCES

- Bricken, W. (1990). *Training in virtual reality*. Unpublished paper. Retrieved July 29, 2004, from anonymous ftp archive ftp.u.washington.edu.
- Deborah Barreau, Cheryl Eslinger, Kim McGoff, Cynthia Tonnesen. Group Collaboration in the virtual classroom: an evaluation of collaboration learning in the virtual classroom of CMSC 818s and the technology that supports it.
- Dori Digeni, (2000), Building a Learning Strategy for Leaders Retrieved August 10, 2004 from <http://www.linezine.com/7.2/articles/ddbls41.htm>
- Faibisoff, S.G. and Willis, D.J. (1987). Distance education: definition and overview. *Journal of Education for Library and Information Science*, 27, 223-232.
- Ferdinand Kraus, (2004) *IDEAS: Instructional Design for Elearning Approaches*, Retrieved April 29, 2004 from <http://ideas.blogs.com/lo/>
- George Siemens, (2002) *elearnspace. everything elearning*, Retrieved August 25, 2004 from [http://www.elearnspace.org/Articles/Week1\\_Elearning vs.Classrooms.htm](http://www.elearnspace.org/Articles/Week1_Elearning_vs.Classrooms.htm)
- Giuseppe Chiazzese, Claudia Cortopassi, Maria Rita Laganà, *Virtual secondary school classroom* Retrieved August 21, 2004 from <http://www.lmu.ac.uk/ies/conferences/Chiazzese.html>
- Hsinchu, Starr Roxanne Hiltz, (1995), *Designing a Virtual Classroom* Retrieved July 23, 2004 from <http://www.njit.edu/old/CCCC/VC/Papers/Teaching.html>
- Jeff Haywood, Hamish Macleod, Denise Haywood, Nora Mogy, Wilma Alexander. (2004). A Survey of University of Edinburgh WebCT Users 2004: *Student View of E-learning*. Online resource. [www.flp.ed.ac.uk/ALTC2004/studentviews.pdf](http://www.flp.ed.ac.uk/ALTC2004/studentviews.pdf)
- Kevin Kruse. (2002-2004). *The benefits and drawbacks of e-learning*. Online article.
- Marcia Conner, (2002) *Global Implications of eLearning*, Retrieved August 10, 2004 from <http://www.linezine.com/7.2/articles/mcgie.htm>
- Mark Cavender, (2000) *eLearning ShmeeLearning*, Retrieved August 10, 2004 from <http://www.linezine.com/7.2/articles/mces.htm>
- Peter Cheese, (2003) *What Keeps Universities from Embracing e-Learning?* Retrieved August 24, 2004 from <http://www.elearningmag.com/ltimagazine/article/articleDetail.jsp?id=74867>
- Seo Jee-yeon, (2004). *E-Learning to Become Strategic Industry*, Retrieved July 30 from <http://times.hankooki.com/lpage/tech/200407/kt2004072918404411790.htm>
- Shneiderman, B. (1993). Education by engagement and construction: *experiences in the AT&T teaching theater*. Keynote speech for ED-MEDIA '93, June 1993, Orlando, Florida.
- "*Student Views of E-Learning: A Survey of University of Edinburgh WebCT Users 2004*", Jeff Haywood, Hamish Macleod, Denise Haywood, Nora Mogy & Wilma Alexander
- Texas Education Agency. (2000). Ch.126 texas essential knowledge skills for technology (prek-12). Austin, TX. TEA: Author.
- Vernon Pursley (2002) *E-learning Courses - Self Investment* Retrieved August 24, 2004 from <http://www.pcjournal.com/modules.php?name=News&file=print&sid=212>