eLearning in Maritime Envoronment

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Abstract:

Computer Mediated Communications and Distance Learning (CMC/CMDL), and particularly asynchronous learning through the Internet, are becoming major vehicles for fulfilling the needs of Lifelong Learning (LLL).
With the inception of computer technology in the 1980s and developments in communications technology in the 1990s, the potential for improving the quality and effectiveness of distance learning has grown.
This has resulted in the development of a variety of learning technologies and the incorporation of a number of new elements into distance learning: video films, multimedia courseware, and live lessons delivered to remote classrooms. Until the mid 1990s, the integration of such educational technologies was only partly successful, for methodological reasons, and due to considerations of cost and accessibility.
Today, we are at the threshold of a new era in which technological learning solutions are developing into effective applications. The Internet has become an essential communications platform and has new capabilities that can be utilized for distance learning. Various new models of education are described and discussed in this paper.

Throughout the world, the post-secondary learning market has become one of today's growing markets, both in developed nations and in developing ones. Increasing competition, the need to keep up-to-date professionally, along with a rising standard of living and more leisure time, have combined to make studying an ongoing process – lifelong learning (LLL).
The studying population has not only grown larger; it is becoming older, on average, and has additional obligations mainly work and family. As a result, there is an increasing demand for a flexible learning framework, one that does not tie the learner down to a specific time or place. Differences between individuals also require an adaptable pace and mode of study, suited to personal abilities and distinct learning styles. The adult learning market is becoming increasingly competitive and full of opportunities, both for existing institutions and for new entrants.
Hanna (1998) claims that: "throughout the industrial era, the system has focused upon serving the educational needs of youth to prepare for a lifetime of work. Today it is clear that the future will involve a lifetime of learning in order to work."

Emerging trends in the $670 billion world wide education market indicate growth of the higher education and corporate training . The total scope of the learning market in the US in 1995 was estimated at $262 billion, of which $189 billion (72%) was devoted to higher education, and $60 billion (23%) to corporate training.

Traditional studies

Traditional university studies offer an impressive array of advantages, both in theory and in practice. When these advantages are realized in the classroom in an encounter between an instructor who is also a first-rate scholar and bright students – an optimal learning situation can be obtained. However, traditional learning can no longer satisfy all learning needs, for the following reasons:

(1) High quality learning depends, to a large extent, on finding a sufficient number of lecturers;
(2) (2) Studies in public research universities are expensive; thus, accessibility is usually limited and subject to budget cuts and restrictions;
(3) (3) Traditional learning is limited to a particular place (the classroom on campus, which is also expensive to set up), a specific time, and a uniform pace.

Traditional Distance Learning

Distance learning provides answers to the problems of availability (accessibility and cost) and the demand for flexibility (time, place and pace) of learning.

For 150 years, correspondence education has been used to deliver instruction to students. The materials for the courses were printed and mailed to the students in outlying areas which would return assignments via the same method. In 1840, England started the earliest distance tutoring courses by teaching shorthand. Since World War I, distance education spread rapidly and is in one form or another all over the world. As media and technology advanced, education incorporated media into distance education: newspapers, radio, television, telephones, satellite transmission, and electronic publishing.
Many educators were critical of distance learning in early years because of the expense of technology, lack of student-teacher interaction, and questions over the quality of student learning. The most recent research, however, suggests that new technology has provided advances that enable students to learn as well with distance education as they might in traditional educational settings. Students and

teachers can interact in new and crucial ways to facilitate learning. In fact, distance learning has advantages over traditional instructional methods.

The method of distance education delivery is usually dependent on the cost of delivery and the students receiving the instruction. One study suggests that no matter how distance education is delivered—low-tech, high-tech, interactive, or not interactive—students learn equally well (Beller, 1997). Although, outcomes on tests may show little difference in knowledge gained, adaptation to learning styles and attitudes toward learning do vary among individuals based on their learning mode. Adult learners tend to need less interaction to remain motivated and challenged to learn. With the age of electronic games and videos, the younger learners seem to learn more efficiently—at a higher rate of speed—using the high-tech interactive methods of teaching distance education.

The oldest and simplest form of distance education are correspondence courses. Whether or not traditional correspondence courses are two-way communication is debatable, but students do have the opportunity to write or call the instructor.

Asynchronous learning

Asynchronous Learning Networks (ALNs) are on-line learning venues that emphasize people-to-people
communication combined with traditional and/or information-technology-delivered learning tools. The terms The purpose of ALNs is to enable people to learn anywhere and at anytime without the constraints of time and space. ALNs are useful in many educational arenas including on-campus education, off-campus education, and continuing education. Principle technologies involved in asynchronous learning are:

Conferencing

To provide asynchronous interaction between people, computer conferencing is widely used. Computer communication ranges from the use of email, listservs, newsgroups to threaded conferencing systems. The latter type of communication is particularly useful for organizing discussions around topics. A wide variety of computer conferencing systems are available; most have similar features, i.e., posting and replying to messages. Often, conferencing systems will provide the capabilities of editing and moving messages, posting multimedia, notifying participants of new message postings and organizing discussions.

On-line Materials

Currently most on-line materials are in the form of Web pages, often linked to discussion groups and places to try out examples. The enormous advantage of creating on-line materials is that it makes the materials easy to reuse and modify. For example, an on-line course typically employs a standard set of Web pages that an instructor can easily modify. In these materials it is straightforward to link to explanations in other courses (for remediation, for example) or link to authoritative sources on-line. All materials in an on-line course do not have to be on-line. Printed materials, including books and journal articles, are also perfectly suitable and can form a basis for assignment and submission of problems and discussions on-line.

Computer-based Training (CBT)

While CBT modules have not yet become widely used in ALN, it is expected that adoption of CBT modules will become commonplace as technology progresses. The generation of simulations that explicate difficult to understand points will help augment on-line reading materials. Simulations of the way machines work to visualizations complex systems can provide powerful demonstrations to assist in learning.

New student – teacher relations

Asynchronous courses require more students to be enrolled in order to sustain robust group
interactions since the students can be at different points in the course at the same time. This model requires different sorts of group exercises, ones that do not require the students to be at the same place in the course at the same time. Moore and Kearsley note that learner-learner interactions are a relatively new element in distance education [9], and so we must think in new ways about the course interactions we wish students to engage in. These group interactions can take the form of informal discussions, topical or other structured discussions, building projects or papers online, peer editing, brainstorming, and case study analysis, for example.

In collaborative learning, instruction is learner-centered rather than teacher-centered and knowledge is viewed as a social construct, facilitated by peer interaction, evaluation and cooperation. Therefore, the role of the teacher changes from transferring knowledge to students (the "sage on the stage") to being a facilitator in the students construction of their own knowledge (the "guide on the side"). Some examples of collaborative learning activities are seminar-style presentations and discussions, debates, group projects, simulation and role-playing exercises, and collaborative composition of essays, exam questions, stories or research plans. This new conception of learning shifts away the focus from the teacher-student interaction to the role of peer relationships in educational success .

Models of higher educations

Hana describes and analyzes several models of higher education:

- Extended traditional universities
- For-profit adult-centered universities
- Distance education/technology-based universities
- Corporate universities

- University/industry strategic alliances
- Degree/certification competency-based universities
- Global multinational universities

For extended traditional university operates as the parennt organization, serving as a sponsor for programs conducted for this "alternative or nontraditional" constituency or clientele. Such programs do not threaten the basic academic organization of the university, but they do serve a different market, one that is primarily external. Most efforts of extended traditional universities have centered on marketing and delivering existing on-campus courses and programs to adult audiences.
For profit adult centered universities change their programs and are focused on educational market. Programs are almost always career focused offering courses that enable students to either enter a technical career or to advance to new management responsibilities. The distance education/technology-based universities are all organized around a technology-based approach to learning that seeks to minimize the physical separation of the learner from the instructor or from other learners. They also tend to be more adult and workforce oriented, although the large national universities enroll substantial number of traditional college-age students largely due to the incapability of traditional universities, especially in countries with rapidly growing populations.
During the 1980's a number of corporations established umbrella organizations to provide for the corporation's comprehensive human resource development, education and training needs. Their reasons
for developing comprehensive training and educational programs included the need to develop basic educational competencies in the workforce, acculturate employees into the company, improve cooperation, communication and competencies of individual employees and teams of employees, and improve recruitment, advancement, and retention incentives.

Partnerships marry universities and for-profit organizations in ways that force contact and interaction between very different cultures, goals, and operating principles and assumptions. One potential benefit of this interaction is the opportunity for both organizations to acquire much needed information and knowledge from the other, and also to change some of the unexamined practices that may be inhibiting the organization from developing a successful strategy in a changed marketplace.
Organizations are also emerging to take advantage of recent changes in the labor market brought about by the increasing pace of change, especially in technology areas. With learning a requirement to stay current, and with workers changing both careers and employers more often than ever before, individuals need to certify and re-certify their competencies on a regular basis. In the professions, this has become a requirement known as mandatory continuing professional education.
The marketplace for learning is becoming global. With new technologies, neither language nor distance is a barrier to access, although cultural norms and patterns are among the formidable obstacles to learning across political and cultural boundaries. There are no problems for a university to become global, and indeed there are few universities that offer their courses in more than one country.

Computer mediated communications and lifelong learning in the maritime environment

To find opinions about possible use of the computer mediated communications for lifelong learning we have prepared a survey between students and seafarers. The survey has been divided in four parts. First part is used to define the bias of the participants, second to evaluate different tools and types of lectures, third to state the usage possibilities of new technologies in learning, and the last to convey the application of the computer mediated communications in the process of learning in the maritime environment.

First part had three questions, defining the bias in the knowledge and usage of the Internet and multimedia. The 79,17% of all participants are aware of the concept of Internet (93,75% of the students and 50% of the seafarers) , and 66,67% have any kind of the experience in Internet usage (50% of the seafarers, and 75% of the students). It is interesting that the multimedia have used only 62,50% of the participated population (68,75% of the students and 50% of the seafarers).

It has to be noted that the although the concept of the Internet is not in full known by all the participants, the utmost part of the population is aware of technology, and as will be shown later predict the principal use in the learning process.

In the second part the participants had to rate the classic lectures, video, CD-rom lecturing, Internet and interactive lectures with the grades from 1 to 5. The results are shown in the table 1.

	Total		Students		Seafarers	
	Avg	Std. dev	Avg	Std. dev	Avg	Std. dev
Classic lectures	3,86	0,83	3,93	0,68	3,62	1,06
Video	3,77	0,82	3,75	0,85	3,62	0,74
CDRom	3,59	0,72	3,62	0,71	3,62	0,74

Table 1. Rating the learning technologies

From the table it is evident that, although the total average grades for classic lectures, Internet and Interactive lectures are equal, the students have rated Internet with best grades, and seafarers have rated Interactive lectures as the best way of presenting the topics in the lectures. It is interesting

that the students grade classic lectures with better grades and smaller standard deviation than the seafarers, where the standard deviation is spread over one grade.

It is also interesting that 66,67%, of the population (75% of the seafarers) think that the classic lectures are more advantageous than computer mediated learning. Both students and seafarers in 95% think that in the future the computer mediated communications will be main means for learning.

91 % of the population demands any kind of connection (online or via e-mail) with the teacher for support.

The results show that even if the subjects do not know the principles of the computer mediated communications participants in the survey think that the future of the learning in the maritime environment resides in the wide usage of the computers. As expected the seafarer population is a little bit conservative but not in decisive way. By the presupposition of the participants the massive usage of the computers and networks for the teaching in maritime environment will be in a period between 5 and 7 years .

Conclusion:

The global marketplace and new technologies are contributing to the rapid globalization of higher education. Today's business environment draws its professional work force from all corners of the globe. This paper has presented various learning technologies used in the new concepts of computer mediated communications and distance learning. The new learning solutions are presented, especially ones using Internet as primary medium

The barriers to accessing learning opportunities are falling dramatically because of improved learning technologies. The number of providers of and approaches to education and training will continue to grow dramatically as access improves and as demand for lifelong learning increases globally. Universities of all types will increasingly focus on responsiveness to learner needs and desires such as convenience, timing, engagement, application of knowledge to the workplace, and learning by doing.

In the maritime environment as shown by the study reviewed in this article, the expectation is, that the massive use of the computers and communication networks will be dominant in the period from 5 to 7 years. The role of the teacher will be changed, giving him a different , much more responsible role. The teacher student relationship will be changed from teacher oriented to student oriented. Students and teachers have to interact in new and crucial ways to facilitate learning.

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