

The Advantages and Disadvantages of the Virtual Classroom and the Role of the Teacher

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ABSTRACT

The Internet offers such advantages as flexible access and new ways of communicating and assessing for students and teachers. The Internet also has some disadvantages such as reliance of information service providers, credibility, viruses and in some cases, low speed of connections. However, for the teacher, creating Internet resources that are stimulating, appealing, effective, user friendly and educationally sound is time consuming. A new paradigm of education has developed, one that integrates the technology of computers and the Internet in education. With the introduction of sites such as YouTube and Facebook, we have many technological tools available to us. The use of computers, and the Internet, opens a new world of potential.

INTRODUCTION

Following the emergence of the Internet in the early 1990s, many new tools and products have been developed to exploit its benefits fully. Since the mid-1990s the Virtual Learning Environments (VLEs) have appeared with the aim of supporting learning and teaching activities across the Internet.

Traditionally the school has been the place where teachers and pupils meet each other. It has been the setting where the institutional teaching/learning process takes place. However, various forms of computer-mediated communication are adding interesting new dimensions to regular school learning.

The Internet offers such advantages as flexible access and new ways of communicating and assessing for students and teachers. The Internet also has some disadvantages such as reliance of information service providers, viruses and low speed of connections. However, for the teacher, creating Internet resources that are stimulating, appealing, easy to use and educationally sound is time consuming. The VLEs allow teachers to create resources quickly and without the need to develop technical skills. VLEs provide an integrated set of Internet tools, allow easy upload of materials and offer a consistent look and feel that can be customized by the user.

PURPOSE

Our society is changing. A new paradigm of education is developing, one that integrates the technology of computers and the Internet in education. We do not only learn from books. We have many technological tools available to us. The use of computers, and especially the Internet, opens a new world of potential. With the use of technology, education can surpass the physical boundaries of the classroom and provide students the opportunity to experience more.

Since Gutenberg, the Internet represents the largest transfer of information to occur in history. According to Robert B. Cummings, Director Learning Resources Center, SHRP-SON at University of Alabama at Birmingham market research indicates that we can make the following assumptions:

- 50% of learning will continue to be "in person", involving things only available in person, although most of this activity will be facilitation
- 50% of learning will take place on the Internet, which is a better vehicle for cognitive learning due to the extent of information, low cost, and convenience
- Employers will expect to hire people who know how to learn on-line
- Education will become more student oriented (convenient), rather than faculty oriented
- Internet will dominate teleconferencing, because it's cheaper (lower technological investment) than video codecs, offers universal access, and has a high level of interactivity
- Personal computers will be ubiquitous

The Internet is a huge resource, which is made more overwhelming by its disorganized state; however, it offers so many significant learning opportunities which are delivered in a sensory way that is appealing and exciting to most students. Teachers who have delayed their training in this medium are now finding that their students have overtaken them in expertise and attitude toward the Internet from a very early age, and the teachers are finding it difficult to fit their own training and learning into an already busy time frame.

One of the most important contributions of the Internet to teachers is the opportunity for global cooperation and International teaching and learning. By using the internet tools, students from different parts of the world, learning together, reading each other's ideas and views, discussing common concerns and understanding the differences in their attitudes.

The purpose of this paper is to discuss the advantages and disadvantages of using computers and the Internet in education and also to discuss the role of teachers in Internet education.

PROBLEM

Digital technology permeates the lives of students and teachers almost everywhere: school systems typically have at least one computer for every 15 students, teachers participate in on-line computer conferences with colleagues, schools are clamoring to be linked worldwide with the Internet, and video games and home computers are increasingly a routine part of students' experiences.

A large percentage of teachers remain reluctant and skeptical about the Internet, with Becker in 2000 stating that up to 70% of American teachers fall into the reluctant or late adopter categories when it comes to new technologies. Less than 25% of all teachers have integrated technology-based tools into regular classroom programs. (Becker 2000) The same study by Becker showed that only 20% of teachers are at an advanced skill level to integrate technology use into the classroom. Possible reasons for this giant chasm in technology skills amongst teachers:

1. Teachers have skills with people. In many cases computers do not interest people persons, as the interaction is predominantly one-sided.
2. Teachers need to know that the time they spend on learning a new skill will result in better student performance. They need to see value for time invested. (McKenzie 1999)
3. Most teachers are not pioneers in the computer field. They want products that are finished and have been tested, refined and perfected so they can see the finished product and then make a decision as to how it can be implemented into their program.
4. Teachers are busy people; they do not have time to mess around. (McKenzie 1999)
5. Teachers do not like surprises or disappointments in the classroom - when they have planned for something, it needs to be there. Technology is still an unstable commodity. (McKenzie 1999)
6. The language of technology can be overwhelming and confusing to a non-user. (McKenzie 1999)
7. Lack of support within the school system prevents people from asking questions and moving forward beyond the survival or mastery stages. (McKenzie 1999)
8. Some Teachers are uncomfortable with the changing role of facilitating learning rather than directing or being in control. (McKenzie 1995)
9. Not knowing where to begin (Williams 1993)
10. Suspicion of technology or change. (Williams 1993)
11. Not knowing how to fix small glitches when they occur, hence do not like the possibility of this happening in the classroom and not knowing how to fix the problem. (Tipton et al 1998)
12. Reluctance to take the time to introduce an Internet based activity when there are so many other methods of instruction which are initially more efficient. (Tipton et al 1998)
13. The risk that students may wander into inappropriate sites, and create a

- problem for the teacher. (Tipton et al 1998)
14. Instructional goals, teacher experience, subject matter or curriculum area, available resources and support, and student needs are all factors that affect teacher's technology use. If they are in the mindset of incorporating technology when they plan a unit, it will not happen. (U.S. Congress 1995)

While computers are an important part of education, they cannot replace the natural world. Computer technology may enable us to see an example of how a stream's ecosystem works, but to get a full and authentic understanding, students must take a trip to a stream, and perform their own observations and tests. The hypothetical cyber-realistic demonstrates only a limited view of natural life.

Advantages

The use of the Internet in education is a topic that has received extensive attention. There are some obvious advantages when compared to traditional in-class education. The advantages affect the students and teachers in different ways. The students are the people enrolled in the learning course. The teacher/instructor is the person who will be in charge of teaching the class. The teacher will send out materials, e-mail's, ect, instructing the students of what they need to be doing. The discussion that follows lists some of the advantages that have been found in previous research.

Several advantages for using the Internet have been found. One significant advantage is that the virtual classroom can help with instructor organization. Areas for course documents, assignments, class notes and other information can be readily categorized. The creation of a "virtual notebook" can make locating documents easier for both instructor and student. Having this information on the Internet can provide faculty with a method for quickly updating and revising course content.

A case study was done in order to evaluate the use of virtual classroom in 2001. According to Jason (2001), students view the use of the virtual classroom as an ease of accessibility. It is much easier with the information posted on the Web because it is available 24 hours a day. Distance learning courses can be done anywhere and at any time. Students can view this information without having to contact the instructor.

Of the educational advantages of the virtual classroom, the notion of distance acting as an actual aid to the teaching and learning is central and perhaps surprising. Instead of the technology solely acting as a barrier, it simultaneously seemed to force the users to be pragmatic in their actions and alter their behavior accordingly. Teachers and pupils who normally had difficulties in controlling their teaching and studying acts gradually found that the new learning environment required them to develop novel ways of teaching and learning. They found that they patiently had to wait their turn, speak more clearly, moderate their accents and plan more carefully what they were going to present. Both teachers and pupils had to adapt to the mediated interactions that required everyone to present their points quickly, precisely and audibly for the benefit of everyone and not just for the local classroom (Husu, 2000).

A second educational advantage lies in the intellectual and social partnership created by technology of the virtual classroom. Pupils using the equipment engaged additional social skills when they spontaneously took leadership roles in relation to other pupils (Husu, 2000). The technology used increased group cohesion and mutual support especially in the remote classroom. Its suitability for small-group work and its interactive mode both contributed to the development of skills using information and communication technologies. The virtual classroom also developed a range of communication and social skills that allowed the pupils to overcome their relative isolation by communicating with pupils in similar situations.

Cost is also considered to be an advantage. Students save money by not having to commute to class thus saving time, gasoline, childcare and travel expenses. Another advantage of the virtual classroom is time. Students who are motivated and/or quick learners may be permitted to move ahead at a faster rate than in a normal in-class setting. Communication is considered a benefit because most contact with instructors will be done via email, messages can be sent at any time day or night.

To the teacher the fact of everything being digital is an advantage. Since all work is sent over e-mail, instructions are able to deal with students work in an easy manner. Since everything is typed the teacher no longer is faced with the challenge of deciphering handwriting. Another advantage found to be considered by teachers is reusability. Teachers can reuse their own material or easily get material from others.

Disadvantages

Distance learning on the Internet has its advantages however unfortunately it also has some disadvantages. One of the most persistent problems has been the factor of time. Professors have expressed their disgust about not having too much demand on their time. The use of the Internet causes many professors to step out of their comfort zones because; Internet teaching goes against the traditional method of teaching. In order to capitalize on the benefits of the Internet, the professors must first structure their material to fit the layout of the Internet. This process does not occur overnight, it requires time, dedication, and some patience. They are required to adjust their curriculum to meet the standard requirement for providing the right resources for the users (students). It can require more time than teachers want exert or afford to give up. According to Robert Tinker, many teachers who have tried online classes were overcome by the enrollment of ten to twelve students. An email account had to be formed for each individual student, which was ultimately the responsibility of the professor. One teacher stated "It is like having unlimited office hours." (Tinker 1998). Traditionally, professors have the flexibility of making their own office hours to fit their schedule. Online courses cause professors to be on call twenty-four hours a day because students expect a prompt response or feedback when they send email.

Professors who have not reached their tenure are faced with greater time constraints than their peers who have their tenure. Patricia Shapley, a chemist at the

University of Illinois, stated, “I would never recommend that assistant professors try to do this, because they need to be publishing” (Brown 2001). Her statement was confirmed by a non-tenure employee who stated “my suggestion to a tenure-track employee is not to do it right now, but to concentrate on research and teaching” (Brown 2001). Professors have high demands on their time and they often do not have it to give to developing Internet courses.

Another time related issue deals with training. Training is obligatory especially to professors who are not comfortable with computers or the Internet. In order for the college to be represented professionally, professors must undergo training. The more familiar the professor is with the online service, the more effective and efficient their curriculum will be.

Adapting non-online course to online courses can be arduous or challenging. Although many classes have performed well with the online course, there are other courses that has not. An example is the lab portion of a science class. Lab classes require a great amount of hands-on work. Online courses cannot offer the hands-on experience that an in class lab could offer. This is not to say that some of the lab exercises can be done by the computer, because it can. However, Internet cannot duplicate the hands on approach students experience with an in class lab (Brown 2001).

The lack of face-to-face interactions with other peers and the instructor can be a disadvantage for the students and professors. For instance, some students desire the immediate feedback from the professor, which they do not get online. When in class a simple homework problem can be resolved one-on-one easily with the professor, however online that option is not available. Mail and bulletin boards can also cause confusion to Internet learners. Some students often create the problem because they do not read emails and class bulletins. An abundance of emails can cause students to get behind in their course work.

Students can create problems themselves by signing up for online classes without having the basics such as an email address or an account with an Internet Service Provider (ISP). An of example of this problem occurred in Casper College, where a majority of the geography class needed email accounts and a training sessions before beginning the class (Nelson 1997). New Jersey Institute of Technology had about 13 percent of its Internet based students had problems getting access to a computer (Hiltz 1997).

Internet students are put at a disadvantage when it comes to networking and forming new relationships. Students can get to know each other over the net however it does not replace the bond that is formed from face-to-face meetings. Ambiguous instructions are also a fallacy of Internet based learning. These issues are often easier to resolve in person rather than over the Internet. Procrastination is another problem that occurs with Internet based learning because the individual is not forced to stick with a set schedule. Therefore a routine is often not developed and work is not completed in a timely manner. (Hiltz 1997).

Higher prices for Internet based learning can discourage students from this method of learning. Actually comparisons of different colleges have proven that some institutions are charging students twice the tuition to do Internet courses. Stanford University is known for charging its online students \$45,000 in tuition compared to \$26,000 for an engineering master's degree. (Weber 1999).

Instructors

New technologies could take over many of the instructional duties that now define professors' jobs, according to faculty members who are peering into the future. Some of them are alarmed by what they see, while others are encouraged.

Distance learning poses new challenges for teachers. In some cases, achieving student success can be as simple as preventing student withdrawals from distance learning courses. Distance learning gives teachers the opportunity to teach their students both course content and how to become lifelong learners.

Technological advancements are changing the role of teacher to that of educator. Management sage, Peter Drucker, has confidently predicted the demise of the university within 30 years. He sees this mainly as a consequence of such new technologies as telecommunication, multimedia, information processing and virtual reality. The scenario of teachers following structured lesson plans is fading, as students are no longer engaged by lectures or excited by textbooks. Videoconferencing makes it possible for students to learn firsthand from "visiting" scientists, business people, writers, mathematicians, or anyone else they can imagine. Teachers in rural areas are gaining access to experts in their specialty fields, and students are gaining access to classes that are not currently available in their schools.

Technology has become an indispensable part of the world we live in. It plays a greater role with every passing day. When technology is incorporated into the classroom, miraculous transformations can occur in the ways teachers teach and students learn. Both the educator and the student are inspired and captivated, new ideas are sparked, and barriers crumble. Knowledge is not only understood, but also instantly applied in the search for more, and creativity soars.

The high-tech classroom of the future isn't years away--it's already beginning to develop in countless classrooms across the country and throughout the Greater New Orleans area, where teachers have access to current technology--and the training to make it come to life. Teachers are becoming "enablers," guiding students in the right directions. Energy and enthusiasm are coming from students who structure their own projects. Although teachers still facilitate education, students are beginning to "own their learning," creating and actively participating in projects.

Without any doubt, technology will replace teaching that merely conveys facts. When it comes to presenting facts in a high-impact, entertaining, complete and accurate fashion, it's hard to beat multimedia presentations, especially those using advanced "game" techniques. And, increasingly, these are becoming available over the Internet. It is even possible that certain theories can be taught using multimedia, especially when they can be expressed as simple rules.

Without face-to-face interaction with students, online educators find they must overhaul their teaching strategies. "Online teaching is a different mentality," says Becky Huggins, the lead teacher for seeUonline, a public online school program based in Palmer, Alaska, and sponsored by the Matanuska-Susitna school district. "There are lots of teachers that are fabulous face to face, and until they get online, they don't even realize how much they do theatrically [in regular classrooms]." What's more, because so much work is done by e-mail, a teacher's ability to write clearly and concisely is at least as important as his or her verbal communication skills, according to some online educators. "A lot of times, something might have a double meaning or can be misinterpreted," Huggins says, referring to the written instructions online teachers send to their students.

Online educators say they make use of threaded discussions to prompt critical thinking, especially when they include students from around the country or the world, which happens often at online schools. In one of Kristin Fife Johnson, a history teacher at Christa McAuliffe Academy, a private online high school based in Yakima, Wash., that caters to more than 400 students., such a dialogue between students living in the United States and Japan about the validity of the 2000 presidential election quickly turned to a talk about the importance of safeguarding democracy.

Ubiquitous access to the Internet would mean that teachers and schools would forever lose the lock on information. Teachers need to be prepared for students who discover new research resources on their own. Since information is not knowledge, and Net information requires careful scrutiny, school curricula must shift to provide students with the skills they need to sort, process and synthesize. Teachers must embrace the idea that their classrooms are for modeling, guiding, coaching and discussing--not the transfer of information.

Recent research on learning indicates that technology can play a critical role in changing classroom environments and restructuring schools to promote more engaged and powerful learning. Indeed, some evidence suggests that technology may even accelerate the restructuring process, especially if it focuses on using learning resources outside the classroom (Pisapla, Schlessinger, & Parks, 1993; Jones, Valdez, Nowakowski, & Rasmussen, 1994).

Thus, the Internet is an important tool both for school restructuring and promoting engaged learning. The Internet provides educators with access to many resources beyond the boundaries of their classrooms and offers them opportunities to integrate technology

into their lesson plans. By using the Internet, teachers can motivate students to learn while preparing them for work outside of school.

Education has much less to do with information gathering than with developing an individual's thinking and reasoning so that he or she can appraise that information, and separate the relevant from the irrelevant and the important from the trivial. This requires that individuals develop useful models for absorbing or rejecting this mass of information, critically appraising its validity. Those who help people do this are educators, and they 'will be required in the future as never before, simply because of the excessive amount of information that will bombard students.

Findings

Investors are pouring millions, soon to be billions, into the online education market. Conservative figures from analysts at Thomas Weisel Partners, a merchant bank in San Francisco, estimate a \$10 billion virtual higher-ed market by 2003 and an \$11 billion corporate-learning market by the same year. That's \$21 billion from almost nothing and it's the kind of market that makes venturesome investors drool. John Chambers, the highly esteemed CEO of Cisco Systems, calls online education the "killer app" of the Internet.

In December 1999, the National Center for Education Statistics (NCES) of the U.S. Department of Education (USDE) released a new national survey on what it calls "distance learning" in higher education. In 1997-98, almost 34% of all higher education institutions offered distance courses. Larger institutions are moving fastest: 87% of those with more than 10,000 students offered distance classes, while only 19% of institutions with fewer than 3,000 students did so.

Total enrollment in postsecondary, credit-granting distance learning courses in 1997-98 was 1,363,670; the number has grown considerably since, although as yet there are no firm figures. Some suggested forces that appear to be major reason for investing in a virtual classroom are shown in the figure below.

Figure 1: Interest and Investment in Online Learning



Harasim (1990) points out the reasons that on-line teaching would encourage active learning. First, collaborative work and research prompt active seeking and sharing of information and knowledge (Wolcott & Robertson, 1997). Second, equitable participation ensures that each learner is highly necessary to group work, and active contributions of knowledge assist the progress of each member. Third, the asynchronous mode of on-line activity allows learners to input information at their own convenience and from an unspecified location; therefore, the frequency of interactivity increases. Shy learners were found to be interacting more frequently than in the face-to-face mode, according to a study by Montgomerie and Harapnuik (1997). They found that students became more open in discussions and reflected their thoughts in depth while in the online course. Last, active learning is also produced by the text-based nature of the Internet. Although the Internet allows loading of movie clips, sounds and graphics, text is used dominantly (through e-mail, gopher, ftp and veronica). Reading encourages learners to construct meaning of the information they are to share and to verbalize the information structurally, thus encouraging active learning.

The virtual classroom requires tremendous effort to navigate on the part of the instructor, Stephens of the Kentucky Virtual High School says. She must load the assignment, save it, place it into a file, write comments, locate rubrics in the system to grade the work, save the assignment for a second time, grade it, write additional comments, then save it again, all before sending it back to a student. It seems every online teacher has at least one good horror story about a computer crash

To better understand the benefits and drawbacks of online teaching, Technology Counts interviewed several teachers, all of whom teach online full time. Technology Requirements for Teacher Licensure: In 2002, 26 states, plus the District of Columbia, require technology training or coursework for students at all in-state teacher-preparation

institutions. Currently, 13 states provide incentives to teachers, and 22 states provide incentives to administrators to use technology in schools. These states typically provide laptop computers, continuing education units, or stipends to educators who participate in technology training.

Searcy and Others (1993) and Nixon (1992) conducted studies to determine whether students learn as well via distance education as traditional education. Both Searcy (1993) and Nixon (1992) found no significant difference in average GPAs between telecourse and traditional formats. However, Searcy did find that student completion rates might be higher in the traditional sections than in the telecourse sections. This finding raises other questions concerning the factors that may impede student course completion.

Vicky Phillips, founder of Geteducated.com, a consulting agency for distance educators, estimates the online student dropout rate at around 35%. The average attrition rate for college freshman at U.S. universities is around 20%, Phillips says. The fact is, much of what passes for online education today would put most of us to sleep.

Internet based distance learning popularity is growing at an astounding rate. Professional students are finding distance learning much more attractive than the traditional way of learning. The flexibility and convenience offered by distance learning makes sitting in classroom a lot less desirable. A Department of Education study of postsecondary schools found that 58 percent of two-year and 62 percent of four-year public colleges offer distance education courses. Another 28 percent of two-way and 23 percent of four-year public colleges plan to start offering distance courses within three years. (Hodgson 1999).

Individuals who are looking into teaching should be aware that distance teaching might be required of anyone who is entering the teaching profession, especially new teachers. Teachers who possess these skills are more marketable today than teachers who do not have these skills. The biggest challenge often facing teachers is not learning the technology. It is generally the task of bring together your technology knowledge and using it to teach students over the internet. It is one thing learn it, however it is another thing to be expected to execute it well.

Online chat lines are one way students and teachers can actively interact with one another. However most internet-based learning classes do not utilize chat sessions because it requires all participants to be online at the same time. Professor Thomas Easton's technology education students at Thomas College use weekly chat session to enable his students to ask questions about new assignments. He uses an online message board to post assignments and other announcements. Amy Sterling Casil who teachers writing at several institutions uses chat sessions for her lectures. This setting allows her to utilize her notes much like she would in a traditional classroom. (Hodgson 1999) One of the keys to success in mastering distance learning is to be comfortable with technology. Many schools require teachers to get training on computers, however some leave up to teachers to get it on their own.

Many Universities and Community colleges are seeing the opportunity of internet based distance learning despite the challenges that are associated with this program. Some schools see this as an opportunity to broaden their student diversity as well as increase enrollments. Community colleges are often limited to students that are its local area or within 50 mile radius. Distance learning allows these colleges to broaden the programs that make them more desirable. Times are changing and demands are shifting with more professional students going back to school. The demand has always been there however the opportunity for internet based learning has not been. The advancement of technology and the popularity of the World Wide Web (WWW) promote this type of learning now. Communication via the web is of the norm today and those who do not use it is in the minority. Colleges like businesses are finding themselves having to change and adapt to the changes that are occurring in the community. They realize that the unwillingness to change can and will result in missed opportunities (Peterman 2000).

A case study done on Park College shows how a college in Parkville, Missouri established internet based distance learning at their school. In the beginning park had a hard time finding both students and professor who were willing to participate in Internet learning. Park College encountered many obstacles in trying to get the program up and running. Challenges such as find the right time to provide upgrades became a huge task. The college wanted to do upgrades at night and on the weekend, however these times were when students needed online access the most. (Peterman 2000).

Conclusion

The Internet is a very unique and powerful tool that has a huge effect on all the teaching and learning activities that are done in the classroom. Not only that the Internet is enabling international teaching and learning, it gives the teaching and learning a new dimension by adding the opportunities to the various types of communication with partners to the teaching and the learning from far away on the Globe. The communication that can be done by Internet tools such as e-mail, IRC, and WWW pages writing (HTML) and searching for information.

The Internet can play a major role in education reform. Reform efforts center on authentic tasks, with students taking more responsibility for their own learning. Teachers need to adapt themselves to a changing technological society to prepare productive citizens. Traditional methods of teaching are no longer valid for the next century. New times demand new ways of learning (Jones, Valdez, 1995)

Steve Floyd (1991), author of the IBM Multimedia Handbook, said that multimedia allows students to learn in the way that they learn best, whether that be by reading the material, by visualizing the material, by hearing it, or by being actively engaged. Engaged learners are ones who are responsible for their learning, and because they are responsible they are energized by learning. Teachers responding the survey agreed that there is a strong consensus that the use of technology in the curriculum can promote engaged learning.

Teachers and students are learning to use the Internet in a variety of ways to enhance their teaching and learning experiences. The WWW represents the latest in communication technology, and much like the printing press's beginning days, it can be threatening to both students and teachers in the manner that it makes new demands and changes to expectations associated with traditional models. The Internet provides an immediacy and global awareness that has been unavailable to students. Students and teachers are able to have interactions not only in other parts of the country, but also around the world. From this they can learn about the life and issues that impact on other people. Many teachers can get access to relevant discussions hosted by the Internet. Educators can use these discussions and the ability to share experiences with other educators for professional development and to combat the sense of professional isolation.

In the future, colleges will no longer choose between audio or video systems, between interactive or independent systems, or between one-way or two-way systems (Dillon & Cintron, 1997). A single wire will provide everything by connecting the classroom, the library, the workplace, and the home. The challenge will be to choose the most practical combination of learning experiences based on a trade-off between the costs and capabilities of a vast array of media options. In this environment, the focus of educational organizations will shift from teaching to learning. Adapting to this shift will require educational organizations to adopt new approaches for defining faculty work and securing funds for new technology. Despite the changes and lingering uncertainties, distance education is key to dissolving learning boundaries.

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