

# Debunking some common misconceptions on e-learning

Ugo Buy  
Computer Science Department  
University of Illinois at Chicago  
buy@uic.edu

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## Abstract

*The recent explosion in distance learning programs on the world-wide web has spawned a lively debate on the future and the potential of these programs. While distance learning will clearly play a growing role in higher education and professional training in the years ahead, it is unclear how prominent that role will be. Here we outline the main advantages and disadvantages of distance learning programs over traditional instruction. We also identify some common beliefs on distance learning and question the validity of those beliefs.*

## 1 Introduction

The availability in recent years of multi-media applications on the world-wide web has provided considerable impetus to distance learning (DL) initiatives. In this day and age, students taking a DL course typically use the web to download video and audio files containing prerecorded lectures, to electronically submit assignments, and to communicate with teaching staff and other students, both synchronously (e.g., via chat rooms) and asynchronously (e.g., via email and electronic bulletin boards). Because of these technological advances, numerous universities and private institutions have launched new DL programs or significantly expanded existing ones. Many of these initiatives have met with at least some degree of success from students.

The sudden blossoming of web-based DL program has created sharply different views on DL both among academics and in the corporate world. On the one hand, proponents of DL programs point to technological advances and the success achieved by some programs to predict that the dissemination and customership of DL programs will skyrocket in the next several years. Many published reports discuss empirical studies comparing the effectiveness of DL courses to traditional classroom instruction. These studies generally use student performance in final examinations and other assignments as the basis for comparing the effectiveness of DL courses with traditional courses. An overwhelming majority of these reports conclude that the DL courses under consideration are at least as effective as the corresponding classroom courses. Some authors refer to this trend as the so-called *no signifi-*

*cant difference* phenomenon: Most published empirical studies detect no significant difference in the effectiveness of DL vs. traditional courses [3]. Some proponents of DL even argue that DL will eventually replace traditional education at most universities and at training organizations.

On the other hand, opponents of DL programs point to the weakness of the current scientific evidence supporting the claims of effectiveness of DL programs [2]. Direct personal interactions between teachers and students play an important role in the delivery of education. Many students rely primarily on direct contact with teaching staff and other students to absorb course materials effectively. Thus, the lack of direct contact afforded by today's technology can make DL instruction pedagogically weaker than traditional instruction.

Interestingly enough, arguments on both sides of the DL debate have some merit. The lack of direct contact makes it highly unlikely that DL programs using current technologies will replace traditional instruction at research universities. However, it is also clear that DL techniques will play a growing role both in academic education and industrial training. The current controversy on DL programs is fueled by many common misconceptions on the future role and potential of DL techniques. This position paper attempts to dispel some of these misconceptions in an effort to focus attention on the real advantages and limitations of DL.

## 2 Pros and Cons of Distance Learning

The main advantage of DL is that it significantly increases access to advanced learning sources. Traditional classroom instruction is inevitably tied to the *same time, same place model* for lecture delivery. DL courses evidently support an asynchronous mode whereby students can access course materials at *different times and places*. The greater flexibility of DL courses allows access to higher education by people whose personal constraints prevent them from enrolling in traditional courses (e.g., part-time students, continuing education students). In addition, electronic delivery media (e.g., streaming video and audio) allow a student to replay delivered materials, such as portions of lectures, as often as needed. Interaction with other students and instructors is through vari-

ous media, including email, bulletin boards, and chat rooms. Harasim et al. [1] define an *Asynchronous Learning Network* (ALN) to be a “group of people who use computer-mediated communication networks to learn together at the times, places, and pace that best suits them.”

An additional advantage of DL and ALNs is the possibility for instructional materials to be shared among different educators and institutions. A course prepared by an instructor can be delivered by a different instructor, provided that the latter instructor adheres to course content of the former one. Evidently, sharing of instructional materials can lead to economies of scale and greater dissemination of knowledge.

The most notable limitation of DL and ALNs is the lack of direct contact between instructors and students, which has various adverse effects on the quality of delivery. The asynchronous delivery of DL courses prevents students from asking questions during lectures. This lack of communications is harmful to students and also to instructors in the case of lectures prerecorded without an audience. Skilled instructors often rely on student feedback in order to tune lecture delivery. The absence of this feedback can be detrimental to their quality of lecture delivery.

An additional issue in DL courses is the validation of student work. Current authentication techniques do not allow an instructor to check the identity of the person taking, say, a final examination over the web. To further complicate matters, the submission of examinations over the web is subject to hardware and software failures (e.g., a student’s browser crashing during an exam). With current technology it is practically impossible to detect and effectively prevent cheating in computer-submitted assignments. This limitation has obvious adverse effects on the credibility of educational programs relying exclusively on DL technologies.

### 3 Some Common Misconceptions

The advantages and disadvantages of DL techniques and ALNs have created many misconceptions. Here are some of these misconceptions.

**Misconception 1. ALNs will lower the rising costs of higher education.** This misconception is one of the most widely held beliefs among proponents of DL and ALNs. The high preparation time of DL courses and the need for an engaged instructor during course delivery drastically reduce the potential time savings of prerecorded lectures. The use of electronic media for communication (e.g., email and bulletin boards) is less direct and more time consuming than direct conversations between students and instructors. Finally, in the case of evolving disciplines, such as computer science, course materials are subject to rapid obsolescence. While it is quite possible that DL courses will sometimes cost less than their classroom counterparts, it is highly unlikely that DL will significantly reduce the overall costs of higher education.

**Misconception 2. Students learn at least as much in ALNs as they do in traditional classrooms.** This mis-

conception is based on some empirical studies that have shown improved student performance in DL courses relative to equivalent courses taught in the classroom. Unfortunately, existing studies that allegedly corroborate this misconception are generally flawed. These studies typically focus on individual DL courses, rather entire DL curricula. In addition, these studies often do not address authentication issues and cheating prevention. Worse yet, the studies are typically not conducted on random student samples. Most existing studies do not take into account that different students use different strategies for learning and do not explain the higher dropout rate typical of DL courses.

**Misconception 3. Learning through ALNs is inherently less effective than learning in live courses.** Opponents of DL often cite the lack of direct contact among students and between students and instructors to justify this misconception. Quite to the contrary, a well-motivated student willing to devote the additional time and effort required by a DL course may learn more effectively than in a live course.

**Misconception 4. There is no significant difference between the effectiveness of DL and traditional instruction.** Electronic delivery is quite different from classroom teaching; DL often requires a different set of skills and a different learning approach from traditional instruction.

**Misconception 5. DL will blur the distinction between academic education and professional training.** Academic education seeks to provide the conceptual and theoretical foundations that will serve the student throughout her professional life. Industrial training focuses on teaching skills and techniques needed for a job. This distinction will remain in effect indefinitely; course contents and assignments will always reflect this distinction even in the case of DL courses.

## 4 Conclusions

It is clear that DL will play a growing role in higher education and professional training in the years ahead. DL will be quite valuable especially to people with limited access to educational and training institutions. In addition, web-based tools will enhance the value of courses taught in traditional settings. However, DL is highly unlikely to replace live courses at research universities any time soon.

## References

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