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Online Education Forum

Part One – The Shift Toward Online Education

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ABSTRACT

This is the first in a series of three papers about online pedagogy and educational practice as part of the JISE "Online Education Forum." This paper deals with the question: *Why is the shift toward online education happening?* This is a complex issue that involves questions of educational access, paradigms for teaching and learning, competition and globalization among universities, the development of new and better online technologies, and the financial pressures facing higher education. A huge transition is underway. The same networking and computing technology that has revolutionized global commerce, and many other facets of modern life, is now being targeted at education. Partnering the Internet with modern course management systems makes it possible for universities to offer online coursework on a global basis. The critical task that lies ahead is to create and disseminate curricula of high quality that students can embrace and educators can sustain. The overall objective of JISE's Online Education Forum is to examine the realities of college and university online teaching, and the processes of education using today's information technologies. Collectively, the authors of this paper have taught over a hundred different university-level courses online, both graduate and undergraduate, mostly using the Internet. The issues and insights discussed in this Forum will provide educators with important tools and the understanding needed to effectively embrace the world of online education.

Keywords: Information Systems Education, Online Course Design, Distance Learning, Online Education.

1. INTRODUCTION

1.1 The Sloan Consortium

The Alfred P. Sloan Foundation sponsors an organization of leading universities committed to quality online education called the Sloan Consortium (or *Sloan-C*). This consortium conducts research and publishes reports dealing with contemporary distance learning (Allen and Seaman, 2003, 2004, 2005, and 2006; Allen, Seaman, and Garrett, 2007). Sloan-C defines an online course as one with at least 80% of the course delivered online without face-to-face meetings. Sloan-C research shows that the number of students in the United States taking at least one online course per year is increasing at a rate exceeding 20% in recent years, reaching more than 3.2 million in Fall of 2005 (Sloan-C, 2007). Also, in a Sloan-C survey of 1170 Provosts and Academic VPs, more than half indicated a belief that online education would be 'critical for the long-term' in higher education. Surprisingly perhaps, the same percentage said that they believe success in achieving learning outcomes is already equivalent between online and traditional teaching methods. And there was also a consensus of opinion among these respondents that the quality of online courses would continue to improve, with a third of them believing that online teaching quality will soon surpass the quality typical of conventional teaching. These opinions may be surprising for many of us in the teaching profession, coming as they do from such high level and influential administrators. They signal a fundamental change in perceptions about the potential of online education in the immediate future.

1.2 Overview

The objective in this paper is to investigate and assess why this shift to online education is happening. Several factors can be cited beginning with improvements in access to educational services using online technologies and changing paradigms for teaching and learning that integrate well with these technologies. Other factors include heightened educational competition and globalization, the ongoing and often dramatic improvements in online systems capabilities, and the underlying economics of providing online education versus conventional means. The following sections of this paper explore each of these factors individually.

2. ACCESS TO EDUCATION

2.1 Access for the Masses

The ability to use information technologies effectively is one aspect of achieving success in today's society, both for individuals and for organizations as a whole (Colwell, 2001;

Starke-Meyerring and Andrews, 2006). The current job market requires educated workers who are capable of changing and adapting as business and cultural realities shift and evolve in today's fast-paced, global economy (Kanter, 2001). Information technology is enabling the development of this kind of economic world structure. It is also making possible the education of the workforce that this new economy requires by providing new capabilities for teaching and learning online.

Online education offers the promise of increased access to high quality education for the masses (Bates, 2003; Moore and Anderson, 2003). Exactly how this is going to occur is not clear yet, but there is no doubt that online education is rapidly becoming an established modality. The development of the modern world economy demands an educated workforce. Places like *the three I's* (India, Indonesia, and Ireland) and more recently China, are finding that the need for an educated workforce is overwhelming the capabilities of their traditional educational systems (Brown, Murphy, and Wade, 2006; Chen, 2007; Jacob and Szirmai, 2007; Tilak, 2007). In America and Western Europe, the same economic and political pressures associated with 'equality of opportunity' contribute to demands for equal access to a quality education for all who seek it.

2.2 Lifelong Learning

Online access to topical information can also provide a convenient mechanism for sustained learning throughout individuals' careers (Ashton and Levy, 1998). This can be a crucial factor in maintaining the adaptability and flexibility needed in a modern workforce. Online training and education can also provide the access needed to facilitate employees' moving into different lines of work as careers develop. For example, one might earn a career-changing professional certification or a university degree either partially or entirely online. This ease of access to online training and education helps make possible periodic educational renewal. Call it 'just-in-time learning,' 'career retooling,' or 'lifelong learning.' These are all aspects of adult learning that span a wide range of issues, topics, and possibilities increasingly available to everyone through the Internet.

2.3 Information Currency

Coursework that is delivered online can also provide timely access to the latest academic theories, research, paradigms, and ideas in a manner and scope that have never been possible before. Previously, dissemination of knowledge has been largely dependent upon the channels provided by a relatively few key journals and textbooks for each separate academic discipline. That certainly is not true anymore. Of course, there is a lot of disinformation on the Internet, and part of the role of faculty in online teaching is to filter out such *noise* in the system. But the fact remains that the efficiency and effectiveness of online teaching and learning as a vehicle for dispensing the latest knowledge cannot be seriously challenged. Alavi and Leidner (2001) recognized this years ago. Accordingly, if the *quality* of online coursework can be assured, this technology has the potential to rapidly revolutionize higher education.

3. NEW PARADIGMS FOR TEACHING AND LEARNING

3.1 Guide at the Side

While educational technology has undergone significant change in recent years, methods of teaching and learning have not remained static. There has been a shift of emphasis from what has been termed the 'sage on the stage' approach in teaching to one that emphasizes a 'guide at the side.' The sage-on-the-stage model is a reference to the formalized, well-established lecture format of traditional schooling. The teacher as guide-at-the-side reflects a more recent paradigm for education in which the teacher's role is to facilitate students in a journey of learning through a process of collaborative discovery (Abbott, 2005; Wong et al., 2006). The emphasis is upon the student as a self-motivated, persistent 'learner' who shares importantly in the responsibility for achieving his or her own educational objectives (McLaren, 2004).

The move away from sage-stage is a profound shift, and it has developed outside of the current emphasis on using modern technologies for teaching. But, the guide-side approach does fit well with teaching online (Perreault, Waldman, and Alexander, 2002). Guide-side matches the teaching and learning that one finds in an online educational environment, and this fit has helped to garner the acceptance of online technology among professional educators, at least for courses that offer a blend of traditional and online (Allen, Seaman, and Garrett, 2007). In fact, as a way of emphasizing this point, online students are commonly referred to as 'learners' rather than 'students.' This distinction focuses upon the increased emphasis on the self motivation, diligence, and personal responsibility placed upon the student for his or her own learning in the guide-side model. The process of online education, then, is essentially a guide-side phenomenon. The vastness of the Internet and its resources for education mean that the teacher must facilitate learning by filtering and directing learners to the right content for them to address and assimilate as they learn. The focus here is on the self-discipline and purposefulness of individual students. And, teachers combine knowledge and insight about course content with timely and authoritative feedback to support the students throughout this kind of learning process.

3.2 Unbundling of Teaching Roles

Another fundamental change that is driving the adoption of online technology for teaching and learning is the unbundling of the traditional roles of the teacher. Unbundling can significantly lower the costs of education in the long term through achieving economies of scale by isolating and standardizing parts of the teaching process. The development of academic content for a course, the delivery of that content to students, the interactions with students, and assessment of student performance are functions of teaching that are essentially unbundled within an online environment, because each of these is supported for the professor by different subsystems of the technology. Online teaching systems, called 'course management systems,' are integrated platforms, certainly. But distinct subsystems (that are individually initialized with content for a specific course and

managed separately) support each of these functional areas of teaching, meaning that the actual job of teaching online breaks out in the same way. And so each individual functional area can be optimized separately, potentially lowering costs, but with implications for education that are only beginning to be understood and appreciated. For example, does this mean that the content of vast numbers of introductory courses can be standardized across curricula and universities? Once they have been organized into these online structures, what is the role of the professorate in delivering these courses? In interacting with students? In evaluating their work? What does this mean for traditional concepts of academic freedom and a teacher's right to control his or her own classroom, even if it is in cyberspace?

4. HEIGHTENED EDUCATIONAL COMPETITION

3.3 Legitimization of Online Teaching

Many universities compete for scholars, students, and other resources (Rungtusanatham et al., 2004). Basically, the prestigious private sector schools tend to lead the way by legitimizing (through adoption) new trends in educational practice. Harvard, Stanford, Oxford, the University of Texas, and other major universities lead by example and, today, they are all beginning to offer degrees mostly or entirely through online coursework. Schools such as these would be assured of an almost instant market for online educational offerings based upon name recognition alone. Their entry into this market will surely stir attention across academia.

3.4 Modularization of Degrees

Another factor enabling the positioning by educational institutions for competition in online education is the modularization of degree programs. Curriculum is being carved up into modular 'chunks.' By structuring course content into distinct modules, universities can optimize and deliver large components of their curriculum online and target narrow markets for specific educational products. This modularization of curriculum fits into the online educational paradigm and makes the offering of focused courses and degree programs online feasible. Universities have tended to deal first with technical masters degrees in online education because older, more mature students and the technical content of that coursework make it easier to manage teaching online with a reasonable expectation of success (George, 2001). This has been especially important in the past, when universities had little or no real experience with online teaching and learning methodologies.

For undergraduates, the same modularization of curriculum facilitates online course delivery which can be especially attractive for older, non-traditional students or for those who are located too far away from a campus to attend traditional classes. The problem for traditional undergraduates in online education is that education is not only about learning for them. It is also about socialization, maturation, personal development, and becoming good and useful citizens in society (Barth, 2004). Of course, today's students have all grown up with this kind of technology, and they may view things like socialization very differently from their elders. How online education will impact these dynamics is not really clear. But this technology is catching on with undergraduates too, in spite of these kinds of uncertainties (Allen and Seaman, 2006).

3.5 Key Examples

For example, the University of Texas System offers a number of degrees mostly or entirely online at what is called the 'UT system telecampus.' Faculty from any of the UT system universities can sign up to teach these online courses with a full array of training and support. These programs include several bachelors' degrees, an assortment of masters' degrees, and numerous professional certifications (*UT System Telecampus,* 2007). Also, a range of mostly technical masters' degrees are now being offered online from a host of top universities. These include Stanford's online Master of Science in Electrical Engineering, Oxford's mostly online Master of Studies in International Human Rights Law, and many others (*Stanford MSEE,* 2007; *Oxford MSt,* 2007). Harvard offers over a hundred online courses that can be used to fulfill the requirements of many degrees offered by the Harvard Extension School (*Harvard,* 2007). The wealth of online MBA degrees available over the Internet is another case in point (*BusinessWeekOnline, 2007*). Pursuing objectives that include expanding their markets through the Internet puts universities in direct and growing competition with one another. And online educational technology makes it possible to take that competition well beyond traditional boundaries.

5. INCREASED GLOBAL PERSPECTIVE

5.1 Internationalization

One aspect of modern society is the movement toward globalization of institutions across cultures around the world. Business, medicine, music, art – everything seems to be taking on global dimensions. Education is no exception. The internationalization of education places a new emphasis on curriculum with global ramifications and on hiring or developing faculty with international experience and exposure. Study abroad and research abroad opportunities for scholars (both faculty and students) are important components of the modern university. These factors contribute to a heightened sense that the global perspective is becoming central to basic views of modern education.

5.2 Role of the Internet

The Internet is playing a key role in this phenomenon. It has become a truism that the Internet knows no boundaries. The same is true for the systems of online education that are based on Internet technologies. Academics are witnessing a multicultural outreach through online education that is integrating international students and faculty into an academic life without borders (Barth, 2004; Medlin, Vannoy, and Dave, 2004). The Internet is thus fueling interest in online education based in and enhanced through globalization.

6. PROMISE OF MODERN TECHNOLOGIES

6.1 Potential of Multimedia

With each successive generation of modern microprocessor-based information technology, the Internet has grown faster,

cheaper, and more sophisticated (Fox, Anderson, and Rainie, 2005; Lessig, 2001). The Internet is now ubiquitous as is its promise for the future. Obviously, this technology can be the basis for an amazing tool for improving education, but it will be a much better tool in the not too distant future. From an educational perspective, the most exciting aspect here is the potential to make available vast amounts of video through the Internet (Mabrito, 2001; Natarajan, 2006; Wardrope, 2001). Ongoing improvements in network transmission speeds and storage capacities, plus developments in streaming video technologies, make video downloads commonplace and systems like YouTube possible. As a result, *multimedia* applications are now widely available to the public. Multimedia applications utilize a mix of video, audio, image, and text to communicate information and ideas to people more naturally than the mostly text-based systems that have been used in the past. The future of online education lies with networking that can provide integrated, high-quality, multimedia teaching applications to support online educational processes (Bruckman, 2002; Sensiper, 2000; Shih et. al., 2003). Such applications typically require processing power and communications capacity that have made them too expensive for earlier generations of the Internet. But, as faster, cheaper networks and computers with higher capacities have become integral to the Internet, these constraints have lifted. And one promise of these new information technologies becomes the promise of dramatic improvements for future generations of course management systems that better leverage the use of high quality video in online courses (Bates and Poole, 2005).

7. ECONOMIC CONSIDERATIONS

7.1 Financial Constraints

Traditionally, higher education has been self-regulating and relatively independent of centralized governmental authority and control (Berdahl and McConnell, 1999; King, 2007). In the United States, for example, state governments have provided most of the funding for state universities, and the federal government has provided substantial research funding based upon various research grant programs, both public and private (Dill, 2001; Spellings, 2006). These sources of funding are tax-based and have been weakening in recent years under political pressures. So, universities have been forced to look elsewhere for significant funding. Similar situations have been developing in Europe and other parts of the world (Weiler, 2000).

7.2 Challenge to Perform

Universities are managed largely by governing boards made up of individuals who have been successful in business or other areas of endeavor mostly outside of higher education (Coble, 2001). These tend to be competitive individuals whose successes derive from understanding accountability, fiscal constraint, productivity enhancement, opportunism, and market expansion. All of these to one degree or another have been key themes sounded in higher education in recent years, certainly in part, because of the influence of these leaders and because of diminishing governmental financial support.

7.3 Search for New Markets

Higher education is expensive and government support in real terms has been on the decline (Cantor and Courant, 2003; Hemsley-Brown and Goonawardana, 2007; Longanecker, 2006). As budgets get tighter, there is a new focus on financial accountability (Broadbent, 2007). In many cases, student tuition and fees have risen at an alarming rate, as well (Jacobs, 2005). For university administrators, this is not a pretty picture. Faced with the choice of further tuition and fee increases or expanding markets, many administrators turn entrepreneurial and see online education as a possible salvation, a mostly untapped route to important new markets (Mok, 2005).

7.4 Leveraging Existing Resources

Computer and network architectures (especially in universities) are already established and being maintained with mostly state-of-the-art equipment. Virtually everyone in every university is already fully computer literate and connected to the Internet. So, adding distance learning over the Internet for a typical university will require relatively little incremental cost, especially compared to the resulting potential for market expansion. It is essentially a case of leveraging and better utilizing an already large investment in existing resources. From the perspectives of universities, the Internet is a free link into new, global educational markets, mostly paid for by businesses, governments, and subscribers who have strong, vested, and ongoing interests in making the Internet both ubiquitous and as technically good as it can be. So, universities offering distance learning over the Internet can utilize this worldwide technical infrastructure to access many new markets.

8. CONCLUSION

Advanced information technologies make it possible to accomplish goals in education that could never have been possible before. As Internet technology has matured, it has become feasible to address issues that have perplexed educators for generations in innovative and newly effective ways. The idea that universities can reach anyone, anywhere, at anytime means that schools can compete for students, faculty, and resources across regional boundaries, and internationally. Online technology is beginning to drive a basic shift in the scope and aspirations of educational institutions around the world. The Internet will become bigger, faster, smarter, and relatively cheaper as the future unfolds. Each successive generation of this technology has the potential to revolutionize higher education continually for the foreseeable future.

A word of caution, however; this is a totally new strategic development that has never been possible on such a scale before. Universities can potentially increase student enrollments without significantly expanding campus facilities for classroom space, dormitories, etc. But the devil is in the details. Teaching online is very different from conventional teaching and it is not easy. Planning online coursework is much more demanding and student-teacher relationships, much more complex. Once mistakes are made, it is really difficult to recover fully in an online environment. And once a professor, a department, or a student body has

soured on Internet-based online education, it may take a long time to get any of them to reconsider pursuing it again. The next article in this forum considers how teaching online is different from conventional teaching.

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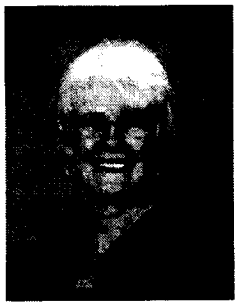

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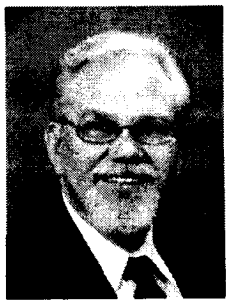

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