

An Inventory of Learning at a Distance in Economics

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Abstract

This paper extends the findings of previous surveys of the use of the internet in teaching economics. This survey focuses on different issues than earlier surveys and includes more institutions. We examine the variety of institutions offering economics courses via the internet in the Fall 2000 semester and the methods of instruction used in those courses. We find that both two and four year colleges offer courses via the internet, and in about equal numbers. Research universities lag behind teaching institutions in web course offerings. Most institutions teaching economics via the internet are located in metropolitan areas with 250,000 inhabitants or more, and very few courses are offered by institutions in the plains states. Streaming audio and video are relatively uncommon, used in less than 20% of the courses, but 76% involved what the instructor considered to be active learning techniques. There is no statistically significant correlation between use of active learning techniques and use of streamed video or audio.

Keywords: On-line courses, survey, economics, pedagogy

There is currently a great deal of interest in the use of technology and, specifically, the internet to enhance economics education. There is an equally great deal of emphasis on the use of the internet as the means of delivering course content to both traditional and distance students. With the rapidly evolving computer and internet technology comes rapidly evolving educational use of that technology. In this paper we inventory the use of technology to teach economics.

This inventory extends some of the findings of previous surveys (Sosin 1997; Blecha, 2000; Navarro, 2000) of the use of the internet in economics education. Our sample for the inventory is broader than those reported in earlier surveys, and in a rapidly growing area like this, course offerings change frequently. We also address a different set of issues than previous surveys. We wish to get a handle on the breadth of the institutions providing online education in economics and we examine the pedagogical techniques used in economics classes delivered over the internet.

We find evidence that a large number of institutions now offer economics classes entirely online, and that a wide variety of courses are offered this way. As one would expect, the lion's share of these courses are introductory. Our evidence also suggests that, in terms of pedagogy, a majority of online courses use active learning techniques, unlike most face-to-face economics classes. There also appears to be a smaller group of online courses that attempt to replicate the passive pedagogical approach commonly used in face to face classes.

Online education is touted as a means of delivering higher education to people in remote areas. Our evidence suggests that so far this is not the case. Rather, the main beneficiaries of online instruction are working students in urban areas who take advantage of the flexibility of "class times" available in cybercourses relative to face to face instruction. Finally, respondents to our survey from institutions

where no online courses existed exhibited the common doubts about the quality of such instruction.

The paper is divided into three sections. In the first, we review the literature on economics education via the internet paying special attention to those studies that have focused on many courses at many institutions using a variety of techniques. In the second section we describe the results of our inventory of techniques, classes, and institutions. Finally, we conclude with observations and inferences from the study.

Internet Courses in Economics

In this paper, we focus on those economics courses that are taught entirely via the internet, though various possible definitions of this term exist. To help clarify what we mean by “taught entirely via the internet,” understand that the courses we examine are only a subset of what Navarro (2000) referred to as cybereconomics courses. In his definition, “most or all of the instruction takes place in a cyberenvironment through use of different instructional technologies, such as “on-line” interactive websites and/or “off-line” CD-ROM-based lectures.” Our focus is somewhat more narrow than this as we do not include in our discussion courses that have any face to face instructional contact nor do we include courses where CD-ROM-based lectures are the predominant source of instruction. Under our definition, a course taught via the internet may use CD-ROM materials as supplements, or as integral parts of an otherwise “on-line” course, and may allow for examinations to be given at remote “testing centers.”

Navarro’s *Journal of Economic Perspectives* (Spring, 2000) survey produced valuable information on a variety of issues relating to cybereconomics courses. Most pertinent to this study is

the content of his Table 2, entitled Instructional Technologies in the Cyberclassroom. This table shows that 100% of the courses included in the study used E-mail, 83% used on-line lecture notes, 71% used an internet chat room and 71% used electronic bulletin board discussions. More than half of the courses contained an online textbook or study guide and half used online testing. Few of these courses made use of CD-ROM lectures (17%), teleconferencing (13%), or video or cassette tapes (8%).

Navarro argued that the digitized text approach to instruction, in which instructors place their course notes on the web and assign periodic quizzes, typically in a multiple choice format, is most consistent with what critics of distance education would call “digital diploma mills”. But there is more to digitized text than simply notes or the text read through the computer. The textual material can engage the learner through hands on, active learning type assignments, just as easily as it can be reading the textbook from diodes instead of paper. The Navarro survey does not ask instructors about the pedagogy they use with the methods of delivery.

We are aware of three other surveys of internet usage in economics instruction. Sosin (1997) found that only 23% of the 324 economics departments she surveyed had or were planning to offer any courses primarily over the internet in the two years following the survey. 77% said they had no such courses and had no plans to create them. Blecha (2000) surveyed economics departments at a sample of institutions with at least 14 coming from each of the 1994 Carnegie University Classifications (Research Universities, Doctoral Universities, Comprehensive Colleges and Universities, and Baccalaureate Colleges). There are no two year colleges in her sample. Blecha’s survey focused on the use of the internet and other technologies to enhance a traditional course and, like Sosin’s survey, was especially focused on the availability of the necessary resources and training for faculty to make

effective use of the technology. Finally, Boldt, Gustafson, and Johnson (1994) provided an inventory of uses of the internet with economics instruction. They reported that the courses they examined largely make use of the “holy trinity” of internet education - email, bulletin boards, and chat rooms - and post class assignments, the syllabus, old exams and such. They found very little use of audio and video materials for presenting course content, though they do note that some faculty made available online entire texts and audio lectures.

Survey Methods

We collected our data on economics courses offered over the WWW by three methods. We contacted 750 economics departments directly by e-mail, used the standard WWW search engines (Yahoo, Lycos, Excite, etc.) to locate distance education courses, and searched several regional clearinghouses for distance education courses. Clearinghouses searched include the California Virtual University, the Southern Regional Education Board (SREB), and the State University of New York Learning Network. 260 departments responded to our e-mail queries about whether they offered any cybereconomics courses, with a large number of those responses indicating that they did not. We also located courses through the search engines and regional clearinghouses. Clearly, our sample is not a random sample of institutions nor of cybercourses in economics. However, our purpose was not to test hypotheses but to inventory the state of cybercourses in economics. We provide more detail about the institutions and courses below.

Unlike previous surveys that asked about instructors’ attitudes toward cybereconomics courses and the availability and use of technological resources, we were interested in learning about the

characteristics of the institutions that offer these courses and the pedagogical choices made in developing them. Therefore, we collected data on a small set of questions about the pedagogy and delivery for each cybereconomics course identified. Some cybereconomics courses were password protected and others were not. For the password protected courses, we contacted the instructors via e-mail and asked for access to the course, or alternatively for the instructor to answer the questions on the survey. For the courses that were not password protected, we browsed the courses to determine the answers to the survey questions.

The data on the characteristics of the institutions were taken from the Integrated Postsecondary Data System (IPEDS) Institutional Characteristics survey from 1996-1997, the most recent year that these data have been made available to the public. The results of the survey of institutions and characteristics are described in the following sections.

Institutions that Offer Economics Courses Via the WWW

Our survey identified 120 institutions that offered at least one economics course over the WWW in the Fall 2000 semester.¹ This is a significantly larger number than reported by Navarro (2000) who identified about 50 such institutions, and the roughly 75 institutions identified by Sosin (1997), suggesting that cybereconomics course offerings are growing rapidly. 100 of the institutions, 83% of the sample, were public institutions, 12 were private nonprofit institutions and 8 were private for-profit institutions. The sample of institutions was split almost exactly evenly between four year

¹We obtained no specific information about the courses offered at 27 of this 120.

institutions (61) and two-year institutions (59); the for-profits were all four year institutions.

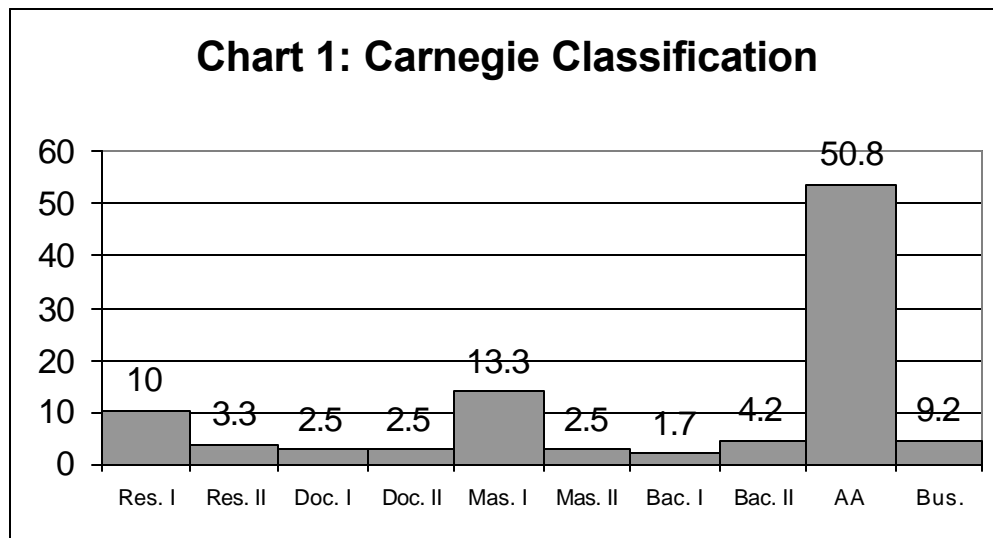


Chart 1 shows the Carnegie Classification for the institutions in the sample. More than half the institutions identified as offering cybereconomics classes fall in the Associate of Arts Colleges (AA) Carnegie classification. Research I and II institutions comprise about 13% of the sample of institutions offering cybereconomics classes, roughly the same percentage of the institutions as are classified Master's 1, and offer about 14% of the individual classes. Master's 1 institutions, on the other hand, offer about 18% of the individual courses and AA institutions provide almost 48%. The current supply of cybereconomics courses, therefore, comes primarily from institutions that do not have a significant research mission, even among those four year institutions. The small number of cybereconomics courses offered by Carnegie Research I or II institutions is not surprising. The time costs associated with developing cybereconomics courses are significant, and economists at these institutions tend to dedicate a large amount of their time to conducting research and preparing research grants; they would tend to have little time or incentive to develop these courses.

Most departments in our sample offered only 1 or 2 cybereconomics courses in the Fall 2000 semester. A small number offered three or four, and one institution, the University of Southern Maine, offered 13. This pattern of 1 or 2 courses offered by most institutions holds across Carnegie classifications. For example, among the 59 AA institutions, one offers three cybereconomics courses, another offers four, and the rest offer only 1 or 2.²

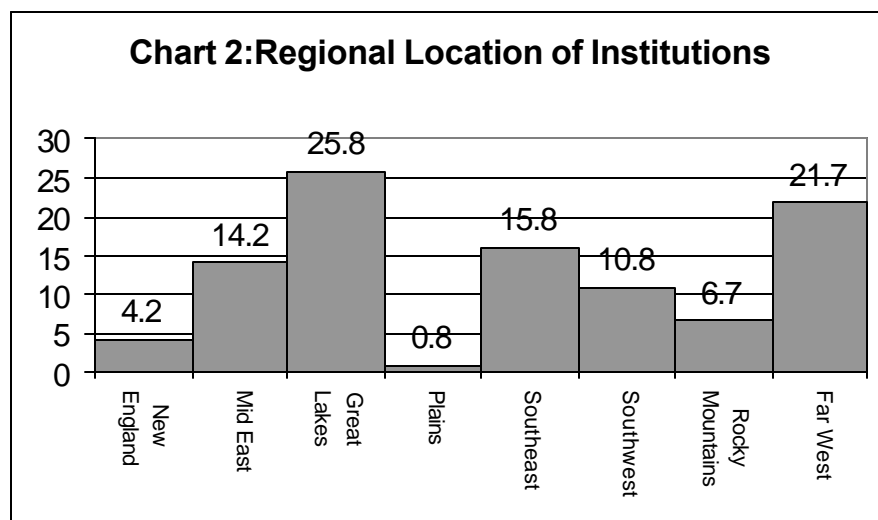
Cybereconomics courses are generally thought to extend economic education outside the traditional audience of 18-22 year old resident students. Institutions that fall into the Associate of Arts Colleges (AA) in the Carnegie Classification system typically serve a non-traditional student body, so the fact that a majority of the institutions offering cybereconomics courses in the sample fall into this category suggests that the market for cybereconomics courses may be reaching this audience.

Indeed, most of the students at the institutions in the sample are not the typical 18-22 year old resident student. Full-time, first-time degree seeking undergraduates make up about 10% of the students at four year institutions, and about 15% of the students at two year institutions in the sample. At an idealized institution with only full-time undergraduates where all students graduated in four years, none dropped out, and the same number of students were admitted each year, this fraction would be 25%. At a similarly idealized two year school, the percentage of full time first time degree seeking students would be 50%. At the average four year public institution in the U.S. 16% of the students are full-time, first-time undergraduates; the average for four year liberal arts colleges is 25%. The evidence

²Two of the four year institutions offer only AA degrees. These are SUNY College of Technology at Alfred and SUNY College of Agriculture and Technology at Cobleskill.

suggests, therefore, that the institutions surveyed tend to enroll a high proportion of non-traditional students, like working adults and non-degree seeking students.

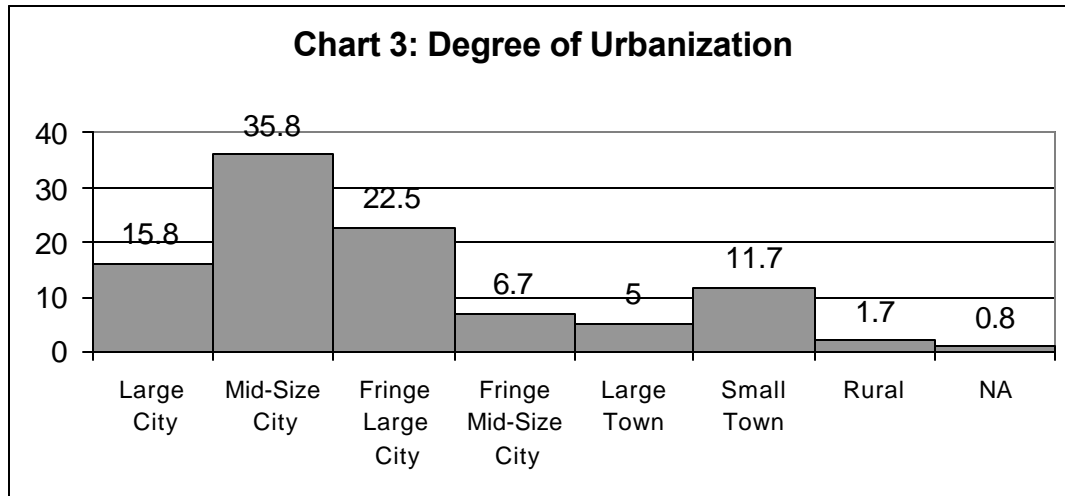
The institutions in the sample were from all regions of the country, as shown on Chart 2, although few are located in the plains states (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota). This lack of institutions from the plains states led us to investigate the relationship between the number of institutions offering cybereconomics courses and the number of institutions per 1000 square miles. Navarro (2000) suggests that many institutions intend to reach rural students through cybereconomics offerings. Our intuition suggested that if cybercourses arise as means of delivering courses to rural areas then we should find more institutions offering such courses where the



density of institutions over the region is small than where it is large. In other words, there should be an inverse relationship between institutions per 1000 square miles and number of institutions offering courses via the web. We found a small, positive association of 0.15.

This positive association may be evidence of non-price competition in the market for students at institutions of higher education. Where there are other institutions offering the flexibility and convenience of online education, it may be important for a given institution to offer like courses as a means of protecting its market share. If this is the case, then one would expect to find cyber courses to be more prevalent in urban areas where large numbers of actual and potential competitors exist.

Chart 3 summarizes the location of the institutions in the sample in terms of the degree of urbanization of the cities in which they are located. Roughly 75% of the institutions in the sample are located in central cities of a Metropolitan Statistical Area (MSA) with populations of over 250,000 (Large City), on the urban fringe of such cities (Fringe Large City), or in the central city of a MSA with



a population of less than 250,000 (Mid-Size City). This distribution holds for both four year and two year institutions in the sample and for the number of course offerings as well. Although technology allows students enrolled in these classes to live and work far from the campuses, the large proportion of

institutions, and courses, located in large cities in the sample suggests that working adults, rather than students in rural areas, are more likely to be enrolled in the cybereconomics courses in the sample. One possible explanation for this finding is that student services, course registration, and library access have not kept pace with course availability. In other words, a student can receive instruction online but must still go to campus to use the library, for advisement, or to register.

The institutions in the sample have relatively large enrollments. The average headcount enrollment in the sample is 10,892, and the median is 8,032. The five smallest institutions have enrollments under 1,000, with 743 being the smallest. The five largest institutions have enrollments over 30,000, with 48,000 being the largest. Even when broken down by level of institution, the enrollments are large. The median enrollment is 8,074 at two year institutions and 7,971 for four year institutions in the sample. Despite the size of the institutions, it may be that minority students do not have good access to many cybereconomics courses, as minorities make up a small fraction of the students at most of the institutions in the sample. The median percent of African-American enrollment in institutions in the sample is 6% and the median percent of Hispanic enrollment is 4%. These medians are the same at four year institutions as at two year institutions in the sample.

In general, our survey suggests that the typical institution offering a cybereconomics course is a large two year or four year institution located in or at the fringes of a large city. The typical institution offering a cybereconomics course does not have a significant research mission, and enrolls many non-traditional students outside the 18-22 year old full-time first-degree seeking undergraduate and relatively few minority students.

Characteristics of Cybereconomics Courses

Our survey identified 189 individual economics courses offered entirely over the internet in the Fall 2000 semester.³ This total is larger than the number of courses surveyed by Navarro (2000) by about 90, suggesting the cybereconomics course offerings have grown rapidly in the short interval since Navarro's survey. We were not interested in the use of asynchronous communication tools like bulletin boards or e-mail, nor in the use of synchronous communication tools like chat rooms, MOOs or MUDs, in cybereconomics courses. The use of such tools have been widely documented in other surveys, and it has been clearly established that these tools are widely used in cybereconomics courses as well as web-based courses in other disciplines. Instead, we were interested in learning about the pedagogical methods used in these courses, and about the delivery methods employed as this area has not been examined in previous surveys.

12.5% of the cybereconomics courses required no password to access the course. Password protection of cybereconomics courses is not surprising given the ease with which web-based material like html pages, PowerPoint slides, Java applets, and graphics can be copied relative to the cost of developing these material.

Navarro (2000) reported that a majority of the cybereconomics courses he surveyed were offered by the institution's Continuing Education department rather than the economics department, suggesting that these courses were designed to reach non-traditional students rather than full-time degree seeking students. Most of the cybereconomics courses we surveyed, 63% of the sample, were

³We were not able to obtain specific information about the courses offered at 27 institutions.

not offered through Continuing Education. Note that this may overstate the extent to which these courses are aimed at full-time degree-seeking students because the breakout among two-year institutions is 25% offered through Continuing Education and 75% through academic departments and there may not be a clear distinction between Continuing Education and academic offerings at community colleges and other two year institutions. Even among four year institutions, a majority of the cybereconomics courses in our survey, 53%, were offered by academic departments.

The large percentage of courses offered by economics departments suggests that credits from these courses are accepted as part of the regular curriculum. The cybereconomics courses offered by academic units are substitutes for classroom-based courses. Navarro (2000) pointed out that substituting these courses for classroom-based courses may be an effective cost-minimizing strategy for institutions with rising enrollments and a fixed amount of physical plant.⁴ This apparent increase in cybereconomics courses offered through economics departments suggests that this sort of substitution is already taking place at many institutions.

The majority of the cybereconomics courses in the survey are introductory-level courses of some sort - either micro or macroeconomic principles, or one semester surveys. Of the 162 courses in the sample for which we have course information, 81% were introductory level courses, 17% were upper level undergraduate courses, and 1% were graduate level courses. The distribution by level in our sample skews even more toward introductory-level courses than those in Navarro's sample, where 70% of the courses surveyed were introductory-level. Because principles-level economics courses are

⁴Coates, et al. (2001) find that underclassmen from online sections of principles of economics perform significantly worse on the TUCE than do upperclassmen, suggesting there are educational costs associated with substituting online instruction in principles for face to face classes.

among the most commonly taken introductory classes on college campuses, this distribution of cybereconomics courses by level comes as no surprise.

Given that cybereconomics course offerings are increasing rapidly, it is of some interest to get a sense of the pedagogical approach being used in these courses. Pedagogical approach could be captured by a number of different metrics. In this survey, we focus on a pedagogical measure for cybereconomics courses that has the web-based equivalent of the typical face-to-face lecture course at one extreme and a cybereconomics course focusing on active learning techniques and student interaction with the course material at the other extreme. In terms of pedagogical styles, this metric puts the “sage on the stage” and the “guide on the side” styles of instruction at opposite ends of the spectrum.

We purposefully chose not to include questions about student-to-student and student-to-teacher interaction in the survey for several reasons. First, our own experience teaching cybereconomics courses, numerous discussions with other economists and faculty from other disciplines teaching web-based courses, and many hours spent in workshops run by distance education specialists strongly suggest that the use of the “trinity” of web-based communication tools - e-mail, bulletin boards and chat rooms - is ubiquitous in web-based courses and extensively utilized by students enrolled in cybercourses. Each of these tools is also quite commonly used in traditional face-to-face courses to improve communication between students and between the students and the instructor. Second, the effectiveness of this set of communication methods in raising student satisfaction in web-based courses and, to a somewhat lesser extent, student performance, has been documented in a large number of

studies in economics⁵ and other disciplines. See Russell (2000) and the references therein for a discussion of this point.

Instead, we chose to focus on what we feel to be a more important dimension of pedagogy in cybereconomics courses. Does the course duplicate a typical lecture-based class or does it attempt to actively engage the students with the material? In our experience, the WWW is a poor medium in which to attempt to duplicate a lecture hall for a number of reasons. One reason is simply bandwidth. Telecourses, video tapes or audio tapes likely represent a more efficient method of delivering lectures to students, given typical modem speeds and the size of most computer-based audio and video formats. A second reason is the relatively inflexible nature of web-based lectures relative to the real thing. Effective lecturers use a wide variety of feedback from students to tailor each lecture to the circumstances. Responding to questions, “reading” students’ faces, and asking questions of students all provide a flow of information that the instructor can utilize to modify presentation of the course content face to face. Each of these is impossible in streamed video or audio presentations.

Table 1: Pedagogical Characteristics of Cybereconomics Courses		
Course Characteristic	Yes	No
Employs Active Learning Techniques	76%	24%
Employs Interactive Text-based Material	78%	22%

⁵See, for example, Coates and Humphreys (2001) on the issue of effectiveness in economics instruction.

Employs Streamed Video	18%	82%
Employs Streamed Audio	19%	81%
Employs Publisher Provided Content	72%	28%
Employs Instructor Developed Content	94%	6%

We used four questions to determine where each cybereconomics course in the survey falls along this pedagogical continuum. The first two asked about the use of streamed audio and video and the second two asked about the use of active learning techniques and interactive text-based material. We interpret the use of streamed audio and video as indicators of a pedagogical approach similar to that used in a typical lecture-style course. For example, a course may include links to QuickTime files showing PowerPoint slides with a voice over from the instructor or perhaps showing a video of a faculty member giving a lecture to a face to face class. Active learning techniques would involve students by directing them to perform specific tasks individually or in groups. A possibility here is for the students to collect data outside of class on prices and quantities of goods typically purchased by college students and to construct a price index with that information.⁶ Interactive text might involve materials similar to Roger McCain's online textbook (<http://william-king.www.drexel.edu/top/prin/txt/EcoToC.html>) that includes self-test questions with feedback and second attempts, or Joe Daniel's java applets (<http://medusa.be.udel.edu/CorePage.htm>) in which students can manipulate diagrams online. But for the purposes of the survey, we intentionally

⁶Scott Simkins of North Carolina A&T University has done this exercise with his students and involved individuals from other institutions so students across the country could compare price indices by region and consider issues about the composition of the "typical" bundle.

did not attempt to define either active learning or interactive text. Instead, each instructor was able to determine for him or herself what was meant by these terms. We felt that this open-endedness allowed for the broadest possible definition of interactive texts and active learning.⁷

The results are summarized on Table 1. These results suggest that cybereconomics courses in the survey fall roughly into two distinct groups. Slightly over 75% of the courses use active learning techniques and a roughly similar number of them make use of interactive text-based material, as each of these is defined by the instructors. The coefficient of correlation between these two variables is 0.52, so there is some positive relationship between these two categories. At the other end of the spectrum, slightly less than 20% of the courses surveyed make use of streamed video; a similar percentage make use of streamed audio. This breakdown is roughly true for both two and four year institutions. There is a strong positive relationship between use of the two streaming technologies, as the coefficient of correlation is 0.75 between these variables. However, it appears that there is little association in the use of either active learning techniques or interactive text and the use of streamed media, as the coefficients of correlation between use of active learning techniques and both streamed audio and video, as well as the coefficients of correlation between use of interactive text and both streamed audio and video are quite low. See the correlation matrix, Table 2.

Table 2: Correlation Matrix

⁷Knowing that the courses have active learning and interactive texts available is not, of course, the same thing as knowing that students make use of them. Neither is knowing that a textbook is assigned the same as knowing that the students read it. Our concern here is with what instructors put into their cyberclasses, not with what students take away from them.

	Active Learning	Interactive Text	Streamed Video	Streamed Audio
Active Learning	1.00			
Interactive Text	0.52	1.00		
Streamed Video	0.09	0.01	1.00	
Streamed Audio	0.07	-0.08	0.75	1.00

This relationship, or lack of a relationship, between the use of streamed video and audio and active learning and interactive text is important. Becker and Watts (1998) report that for introductory economics courses about 83% of class time is lectures, and this same proportion of the time is “chalkboard” instruction. It would seem that face to face classes would exhibit a negative correlation between lecture/chalkboard time and active learning methods of instruction. In other words, lecture instruction and active learning instruction are substitutes in the face to face classroom. On the other hand, our result that there is no correlation between streamed video and audio, the electronic equivalent of “chalk and talk”, and active learning suggests that the two methods are neither complements nor substitutes in the online classroom. Compared to face to face, then, the two methods are much more complementary modes of instruction online. This raises an important issue for online education. Will these methods of instruction that are nearly polar opposites, and therefore substitutes, in the traditional classroom be complements in the electronic classroom? Online, instructors are not faced with the same time constraints that bind them in a face to face class.⁸ For example, many traditional lecturers may be

⁸This time constraint does not bind instructors in either online or face to face classes from using active or cooperative learning assignments as homework. Our point is limited to the basic mode of instruction or presentation of the material.

reluctant to incorporate more active and cooperative learning activities in their courses for fear that they will be unable to cover as much material (Bartlett, 1998). In the online course, instructors are not bound by the time constraints of class meetings. Hence, they can provide both lecture-style instruction and active learning instruction options. Students then may select among those materials available online based on their own learning styles. Education online may be tailored to the individual learner in a way that traditional classes can not be. One wonders if the complementarity of the two will become evident even more as cost and technology constraints on streamed materials falls, or if that will induce the substitution of one for the other to reassert itself.

We also were interested in the extent to which cybereconomics courses make use of web-based content and software provided by publishers and bundled with textbooks. Textbook publishers have recently begun to offer a wide variety of web-based supplemental material to instructors who adopt their textbooks. In some cases, publishers now offer to instructors who adopt their title not only supplemental material like test questions and overhead slides, but also will provide students and instructors with access to online courseware packages that include a suite of synchronous and asynchronous communication tools and on-line testing software with hundreds of multiple choice, matching and fill-in-the-blank questions based on the material in the text. Access to this material and software can considerably lower the fixed costs associated with developing a cybereconomics course. 72% of the courses in this survey make use of some type of publisher provided material. However, 94% of the courses in the survey also make use of material developed by the instructors, so textbook publisher provided content is not the sole source of on-line content in these courses.

Discussion and Conclusion

Cybereconomics courses are a rapidly growing area of economic education in U.S. colleges and universities. Our survey found a large and growing number of these courses offered by a wide variety of institutions of higher education. Although a clear majority of the courses in this survey were introductory-level, we did find upper level undergraduate and graduate cybereconomics courses, further underscoring the growth of these offerings. These courses hold the promise of bringing higher education to underserved remote populations and working adults who cannot easily enroll in traditional full-time degree programs.

In terms of pedagogy, the results suggest that a solid majority of the cybereconomics courses in the survey make use of active learning techniques and encourage students to interact with the material. A smaller fraction of courses appear to attempt to recreate the dominant pedagogical techniques of face-to-face courses by providing students with web-based substitutes for lectures like streamed audio or video presentations. This widespread adoption of active learning suggests two points. First, it indicates that many of the cybereconomics courses in the survey use an appropriate pedagogical approach for the medium. If these courses also stress student-student and student-instructor interaction, then they are likely to be relatively high-quality, as compared to other cyber-courses.⁹

Second, the prevalence of active and cooperative learning in cybereconomics courses may indicate something about the instructors choosing to teach online. As Becker and Watts (1996, 2001) have documented, most (83%) economics classes are still taught with “chalk and talk”. Only a small

⁹Note that we still consider the question of how effective cybereconomics courses are relative to classroom-based courses to be unanswered, despite the large “no significant difference literature” surveyed by Russell (2000).

percentage of instructors make use of more student centered techniques. It may be that these same instructors who evidence a willingness to experiment with their mode of instruction face to face are also those most willing to experiment with online instruction. If this is true, then it is natural for them to adapt for online the techniques they use in their face to face classes. We are struck by the similarity between the 83% chalk and talk and the 77% of institutions (Sosin, 1997) that did not offer online classes and had no plans to do so. This position also may be quite sensible.

The historian David Noble, a renowned critic of distance education, has provided another interesting perspective on the state of distance education. In a recent essay, Noble pointed out a number of interesting parallels between the current boom in web-based distance education and the correspondence education movement which began over a century ago (Noble, 1999). During this period, a number of respected universities, like the University of Chicago and Columbia, started Home Study Programs composed of courses that were developed and initially staffed by regular faculty members. These programs were heavily advertized, and featured claims similar to those made by advocates of technology-enabled distance education today. Students enrolled in these programs would have access to personalized and flexible instruction whenever and wherever they chose to study.

But the Home Study movement turned out to be a fad. Regular faculty were soon replaced by graders who were paid on a per-assignment basis. Drop-out rates were high and institutions required non-refundable fees to be paid at the beginning of study. Most institutions did not offer academic credit for these courses, just a certificate of completion. The programs came under intense scrutiny and, eventually, criticism for their lack of rigor and no-refund pricing policies. By the end of the 1920s, they had disappeared from higher education.

We do not presume to know whether distance education via the internet will turn out to be only a fad. We did learn that there is a great deal of resistance to the idea of offering entire courses via the world wide web. Many individuals responded to our initial e-mail survey that their campus did not offer online courses. Some also offered an explanation for their lack of offerings. Here is a sampling of these responses:

“Not yet, but I fear it’s inevitable.”

“We do not (and I wouldn’t view it as a good thing)!”

“No. Nor would we offer any distance learning course ... without some provision for face-to-face interaction and means of accountability for who is doing the work. In the past we offered a one credit finance course” but “[m]ost people who take it are not at a distance, but on campus. So much for geographic product extension.”

“The answer to your question is no. How could we and still charge \$24,000 per year in tuition?”

Questions about the quality of online instruction abound. Despite those questions, many have plunged headlong into the market for such courses. Whether this market will develop or flounder remains to be seen. This paper provides evidence that strengths of the medium are being utilized, but that the uses for online education are taking a different path than one that some advocates of the

medium have foreseen.

We find evidence that a great variety of institutions are offering economics classes entirely online, and that a large number of courses are among those offered this way. Nonetheless, as one would expect, the lion's share of these courses are introductory. Our results also suggest that the pedagogical approaches adopted in cybereconomics courses tend to fall into two discrete groups. The more prevalent approach uses active learning techniques and interactive exercises while a smaller group employs an opposing approach, adopting a more passive, lecture-style pedagogical approach. Online education is touted as a means of delivering higher education to people in remote areas. The evidence we have suggests that so far this is not the case. Rather, the main beneficiaries of online instruction are working students in urban areas who take advantage of the flexibility of "class times" available in cybercourses relative to face to face instruction. Finally, respondents to our survey from institutions where no online courses existed exhibited the common doubts about the quality of such instruction.

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