

# Data Sources: Graduate Students in Distance Education, 2003-2004

In 1953, the University of Houston became the first postsecondary institution in the U.S. to offer college courses for academic credit via electronic media to students not enrolled on campus. Faculty at the university taught classes through KUHT, America's first public television station. The courses were broadcast live, and ran for 13 to 15 hours each week. Most courses aired in the evenings so that students who worked during the day could watch them. By the mid-1960s, with about one-third of the station's programming devoted to education, more than 100,000 semester hours had been taught on KUHT (KUHT Web site; Wikipedia Web site).

Over the next five decades, many more colleges and universities would join the University of Houston by offering distance-based education courses via electronic means. Distance education is generally defined as the delivery of courses, academic training, or academic materials by use of live, interactive television or audio, pre-recorded television or video, CD-ROM, or computer-based systems such as the Internet (NCES, 2006). The establishment of distance education programs greatly accelerated in the mid- and late-1990s, due to the advent of the World Wide Web and other advances in computer and other media technologies. The American Council on Education reports that the number of postsecondary institutions offering distance education programs rose 38% between academic year 1997-1998 and 2000-2001, and the number of students enrolled in distance courses or programs rose 85% (ACE, 2004). More recent data from the National Center for Education Statistics (NCES, 2006a) show that in 2006 nearly 87% of all four-year public colleges and 45% of four-year private, non-profit institutions in the U.S. offered one or more distance education classes or programs. Distance education is now seen as a way for institutions to meet the rising demand for higher education in a cost-effective manner (Howell, Williams, & Lindsay, 2008).

Much of the research on the use of distance education has focused on the participation of traditional-age undergraduates and adult learners seeking baccalaureate degrees (Oblinger, Barone, & Hawkins, 2003). However, information from the National Postsecondary Student Aid Study (NPSAS, NCES 2006b) reveals that more graduate students, particularly those over the age of 30, are also engaged in distance-based learning. In addition, the NPSAS data show that distance education students appear to be as satisfied with their electronically based courses as they are with classes taught in a traditional classroom setting.

The NPSAS study, sponsored by the National Center for Education Statistics (NCES), is a triennial survey of

undergraduate and graduate/professional students enrolled at postsecondary institutions in the United States and Puerto Rico. The most recent graduate/professional study, which examined students enrolled during the 2003-2004 academic year (July 1, 2003 to June 30, 2004), is based on the enrollment, financial aid, and other records of 11,000 post-baccalaureate students. These students' data were statistically weighted so that they reflect the enrollment of the roughly 2.8 million students in graduate and professional degree and certificate programs during the study period. Student interviews were also used to document their enrollment and other activities. Data collected about enrollment in distance education programs are based on the student interviews (NCES, 2006b). The analysis that follows focuses on the distance education activities of the 2.2 million students in master's, doctoral, and post-baccalaureate certificate programs during the NPSAS study period.

The NPSAS data reveal that while graduate student involvement in electronically delivered courses is fairly widespread, the plurality of participants are concentrated in certificate and master's degree programs in a few key fields. Overall, about 22% of certificate students, 18% of master's candidates, and 11% of those seeking doctoral degrees in 2003-2004 took at least one distance education course for academic credit (see Table 1). The fields of study with the largest shares of distance education enrollment were business (21%), education (20%), and health sciences (17%). However, fewer

than 10% of these students were using distance education for their entire academic programs, which suggests that most distance education students were using the electronic courses to supplement, rather than supplant, their classes at "bricks-and-mortar" universities.

U.S. citizens were much more likely to be engaged in distance education than international students, and among domestic students, White, non-Hispanics and African Americans were more likely than Latinos or Asians to be enrolled in electronically delivered classes. However, students' age was the biggest determinate of their involvement with distance-based education. About 20% of the students age 30 and older used distance education for at least part of their academic programs, compared with only 13% of those under the age of 30. On-line and other distance-based programs attract older students

primarily because they are better suited to working students' work and family life schedules (Howell, Williams, & Lindsay, 2008).

The rising use of distance education has brought with it concerns about academic quality, as campus leaders worry that electronically based courses are not taught as effectively as

Table 1: Percentage of Graduate Students in Distance Education Courses or Programs, 2003-2004

	% Taking Any Distance Education Courses	% Using Distance Education for Entire Program
<b>Total</b>	17%	7%
<b>Graduate degree program</b>		
Master's degree	18%	7%
Doctoral degree	11%	4%
Certificate	22%	7%
<b>Gender</b>		
Male	17%	6%
Female	17%	7%
<b>Race-ethnicity (Domestic Students Only)</b>		
White	19%	7%
African American	19%	8%
Latino	13%	5%
Asian*	14%	3%
Other	12%	5%
<b>Age as of 12/31/03</b>		
Under 30	13%	4%
30 to 39	20%	8%
40 & Older	20%	10%
<b>Citizenship</b>		
U.S. Citizens	17%	7%
Non-citizens	9%	3%
<b>Graduate field of study</b>		
Humanities and Social Sciences	9%	3%
Math, Science, and Engineering	12%	5%
Education	20%	8%
Business	21%	10%
Health	17%	6%
All Others	14%	4%

\*Includes Pacific Islanders and Native Hawaiians.  
Source: NCES, 2006b.

those in traditional classroom settings (Eaton, 2003). However, the survey data suggests that the majority of graduate students participating in distance-based courses are satisfied with the education they receive. According to the NPSAS data, 32% of the master's students who took one or more distance-based classes were more satisfied with those classes than they were with their other types of courses, and another 39% were as satisfied with their distance classes as they were with any other class types (see Table 2). Older students were more likely to be satisfied with their distance programs than those under 30 years old, and business and education majors were more satisfied with distance learning than were students in other fields, particularly health sciences, which most likely would require the most in-person training and contact with instructors. Somewhat surprisingly, a higher share of students in certificate programs (37%) were dissatisfied with their distance classes than were master's and doctoral candidates (29%). Overall, the survey results suggest that roughly two-thirds of all students who took distance-based courses were at least as satisfied with their educational programs as those who did not.

Campus teachers also generally appear to be satisfied with teaching in a distance-based environment. A survey of college faculty conducted by Turco (undated) found that college professors believe courses taught electronically are able to provide students with greater access to information and are better able to adapt to differences in students' learning styles than in-person courses. However, faculty also believe that traditional classrooms are better able than electronic ones to improve students' group problem-solving and oral presentation abilities. The need for improvement in communication skills will likely cause graduate students to use distance education sparingly.

While distance education students tend to be older and have other demographic differences than their peers in traditional classrooms, their receipt of financial support for graduate studies is surprisingly similar. As Table 3 shows, 69% of students in distance education graduate programs received financial aid, which is nearly identical to those who did not

Table 2. Level of Satisfaction with Graduate Distance Education Classes, 2003-2004\*

	More Satisfied With Distance-Based Classes than other types of classes (%)	Liked Distance and Non-Distance Classes the Same (%)	Less satisfied With Distance Classes than Other Types of Classes (%)
<b>Total</b>	30%	40%	30%
<b>Graduate degree program</b>			
Master's degree	32%	39%	29%
Doctoral degree	23%	48%	29%
Certificate	21%	41%	37%
<b>Gender</b>			
Male	33%	36%	30%
Female	28%	43%	29%
<b>Race-ethnicity (Domestic Students Only)</b>			
White	29%	41%	30%
African American	39%	33%	28%
Latino	16%	46%	38%
Asian*	22%	48%	30%
Other	51%	32%	17%
<b>Age as of 12/31/03</b>			
Under 30	22%	40%	39%
30 to 39	32%	43%	25%
40 & Older	39%	39%	22%
<b>Citizenship</b>			
U.S. Citizens	30%	41%	29%
Non-citizens	24%	34%	43%
<b>Graduate field of study</b>			
Humanities and Social Sciences	28%	37%	35%
Math, Science, and Engineering	21%	51%	28%
Education	32%	45%	23%
Business	39%	32%	29%
Health	10%	37%	53%
All Others	24%	42%	34%

\*Includes students who took at least one distance education course for academic credit.  
Source: NCES, 2006(b).

participate in any electronically delivered courses (72%).

The types of aid received by distance- and non-distance-based students do differ somewhat, however. About 44% of the doctoral candidates who did not take any distance courses received teaching or research assistantships, compared with just 19% of those who took one or more electronically taught classes. Doctoral students in non-distance classes also were more likely to have received grants and scholarships, 56% versus 43%. On the other hand, distance education students in doctoral program were more likely to take student loans (38% compared with 30%). The different academic structures may account for the differences in types of aid received. For example, distance students may not be able to come to campus

regularly enough to qualify for assistantships, and thus may be more reliant on loans. Nonetheless, distance education students appear to be as likely as their non-distance peers to receive financial support for graduate education.

The available evidence suggests that an increasing number of graduate students, particularly master's and certificate candidates, are participating in distance-based courses or programs. Distance education has a number of advantages: It serves a large number of students, especially those age 30 and older, who tend to use it to supplement the teaching and

training they receive from more traditional classroom settings; students in all fields of study except health sciences appear to be as satisfied with their distance-based courses as they are their traditional ones; and students in distance programs appear to be as likely to receive financial support for their education as those taking courses on-

campus classes exclusively. Distance-based training thus may provide an alternative for at least some graduate students.

But it is also clear that distance education will never completely replace traditional classroom education at the graduate level. While faculty seem satisfied with their ability to teach classes with electronic media, they cannot easily use technology to replicate the group projects or communications

Table 3. Receipt of Financial Aid Awards and Average Aid Amounts for Graduate Students by Level of Participation in Distance Education Courses or Programs, 2003-2004

	% Receiving Any Aid	Avg Total Aid Amount	% Receiving Grants*	Avg. Grant Amount	% Receiving Assistantships**	Avg. Assistantship Amount**	% Receiving Loans	Avg. Loan Amount
<b>No Distance Education Courses</b>								
<b>Total</b>	72%	\$13,646	40%	\$6,128	19%	\$10,567	38%	\$13,847
<b>Graduate degree program</b>								
Master's degree	71%	\$11,882	38%	\$4,614	14%	\$8,328	40%	\$13,415
Doctoral degree	84%	\$20,789	56%	\$10,647	44%	\$13,400	30%	\$17,906
Certificate	52%	\$7,524	23%	\$2,908	4%	Low N	33%	\$8,590
<b>One or More Distance Education Courses</b>								
<b>Total</b>	69%	\$10,913	40%	\$3,984	8%	\$7,706	37%	\$13,895
<b>Graduate degree program</b>								
Master's degree	70%	\$10,718	42%	\$3,848	7%	\$7,622	38%	\$13,822
Doctoral degree	73%	\$14,690	43%	\$5,872	16%	\$10,245	38%	\$17,317
Certificate	42%	\$4,560	22%	Low N	9%	Low N	22%	Low N

\*Includes scholarships and fellowships.

\*\*Includes research and teaching assistantships. The average awards are based on levels of stipends, but do not include any tuition waivers or other benefits.

Source: NCES, 2006b. "Low N" means the NPSAS survey sample size was too low to calculate reliable estimate.

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skills that are needed for complete success in graduate education. In addition, students will always want social interaction with faculty and fellow students. As Turco (undated, pg. 322) points out: "As our society becomes more dependent upon impersonal telecommunications technologies in the marketplace, many people will eventually long for more personal interactions."

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