

Nontraditional Students Enrollment in Postsecondary Information Technology Programs

A report compiled by the
Applied Information Management Institute



Nontraditional Students: IT Careers – an Opportunity

In April of 1997, AIM completed a study entitled *Student Enrollment in Postsecondary Information Technology and Engineering Programs (Pipeline Study)*. This study noted the change in baccalaureate degrees conferred by U.S. colleges and universities during a recent five-year period. The data in Figure 1 requires us to ask the question, “Why have graduations in Information Technology and Engineering degrees declined?” This drop occurred while the knowledge requirement of the emerging Information Age is demanding these very skills of its workers. Graduations from Nebraska postsecondary institutions show a pattern similar to U.S. trends.

The Pipeline Study, based upon high school teacher and student data plus secondary research information, focused on traditional high school students’ decisions as they make college and career plans. The study did not address how part-time and nontraditional students make decisions to either start or return to college and select a field of study. Over one-third of all college students are now part-time students. This brief study will supplement the Pipeline Study’s findings by focusing on part-time and nontraditional students at area colleges and universities. Of the 41 students participating in the focus groups, 22 were male and 19 were female. The average age of the participants was 34.3 years with a range of 21 to 55 years old.

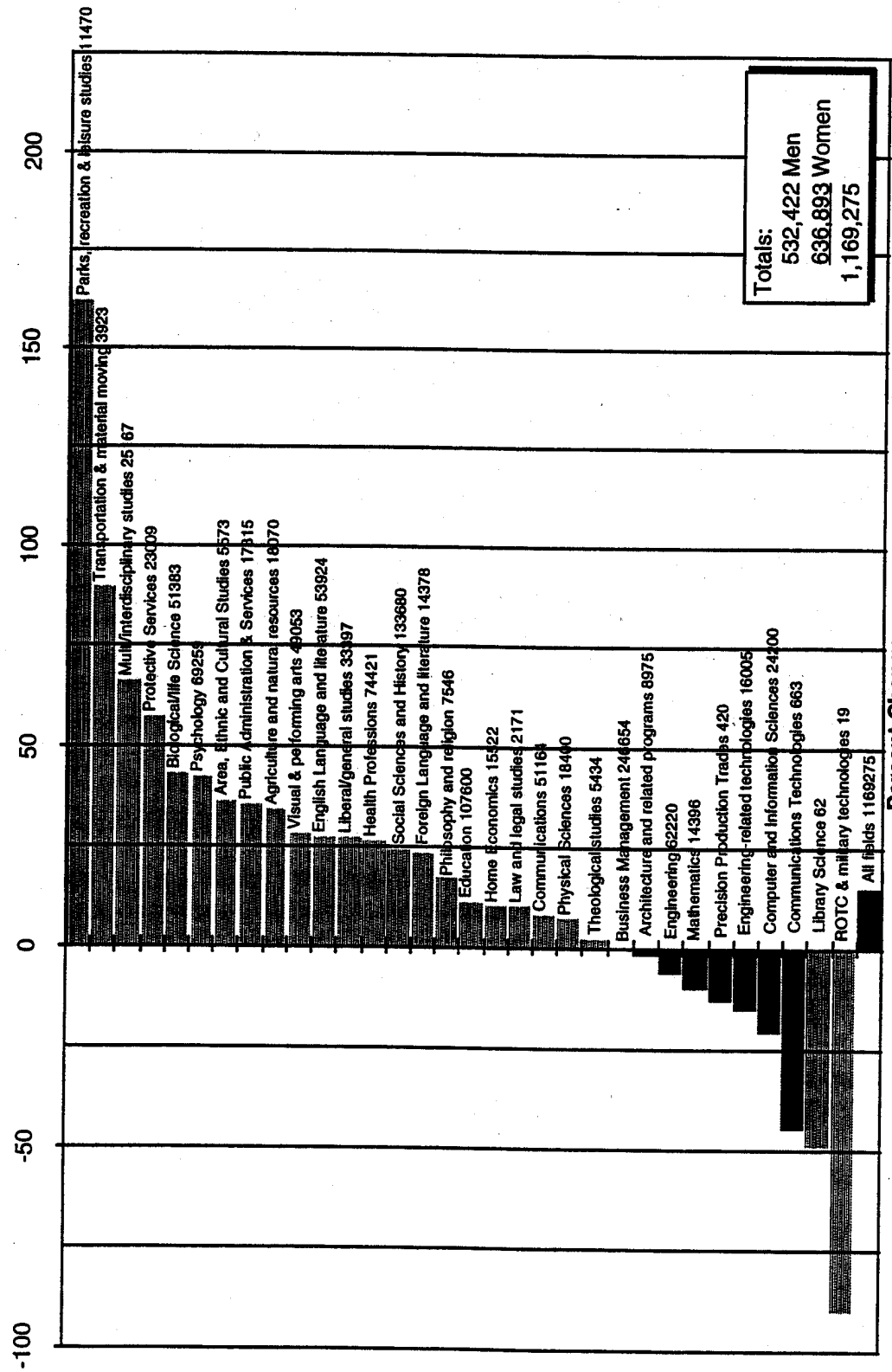
The AIM study of nontraditional students is based on a focus group meeting at five area colleges and universities – Iowa Western, Metropolitan Community College, College of Saint Mary, Bellevue University, and Creighton University. Most of these students were studying various Information Technology disciplines. The focus group meetings were held in April and May of 1997.

Definitions of nontraditional students developed by the U.S. Department of Education include three categories:

- Minimally nontraditional
- Moderately nontraditional
- Highly nontraditional

These definitions are based on seven nontraditional characteristics shown in Table 1 below (complete definitions are shown in Appendix 1.)

Figure 1
Five Year Change in Baccalaureate Degrees Conferred by U.S. Colleges & Universities
Academic years 1988-1989 through 1993-1994
Labeled with Degree and 2093-1994 Graduates



Source: Chronicle of Higher Education

Table 1

	Nontraditional Characteristics*						
	Older than typical	Attend part time	Work full time	Financially independent	Have dependents	Single parent	GED or HS completion certificate
Number of students with each characteristic	36	22	14	35	20	6	4
Percent of students with each characteristic	90%	57.2%	35%	87.5%	50%	15%	10%

*Appendix 1 contains definitions of each category.

A minimally nontraditional student would have only one of the seven characteristics shown above. Moderately nontraditional students would have two or three of these characteristics, while highly nontraditional students would have four or more. The number and percent of students in each category is shown in Table 2 below.

Table 2
Nontraditional Status of Participants

	Number	Percentage
Minimally nontraditional (1 nontraditional characteristic)	1	2.5%
Moderately nontraditional (2-3 nontraditional characteristics)	17	42.5%
Highly nontraditional (4 or more nontraditional characteristics)	22	55.0%
Total	40	100.0%

Based upon the U.S. Department of Education definitions, 97.5% of the 40 participants that provided this information were either moderately or highly nontraditional.

Previous College

Most of the students had previous college experience. Table 3 documents that over one-third already had baccalaureate or masters degrees.

Table 3
Participants' Previous College Experience

	Percentage
No previous college	19.5%
College work (no certificate/degree)	26.8%
Associate degree	17.0%
Bachelors degree	26.8%
Masters degree	9.8%

Students in the focus groups were either taking courses working towards an associates degree, a bachelors degree, or were retraining for new employment opportunities (not necessarily working towards a degree). No one was working towards a masters degree.

Perhaps the most surprising statistics were the nearly 37% that already had bachelors or masters degrees. 37% of the women and 36.4% of the men had a bachelors or masters degree.

Appendix 2 shows the previous degrees/fields for students reporting that information. The bachelors and masters degrees were concentrated in Social Sciences and Humanities. Degrees in some of the physical sciences (biology and microbiology) generally have limited employment opportunities for baccalaureate students.

At the associate degree level, several of the students were working in the field of their associate degree major. They were attending four-year institutions seeking a bachelors degree that would strengthen their career opportunities at their firm.

Field of Study

Nearly all the students in the focus groups were studying in some Information Technology discipline. This study will provide little insight into why nontraditional students study other disciplines. Appendix 3 shows the current fields of study for the focus group participants. Nearly one-half of all students were anticipating programming on either the mainframe or PC environments. The largest focus group was a COBOL programming class.

Table 4
Participants' Field of Study

	Percentage
Programming (COBOL or PC)	43.9%
Telecommunications/Networking	12.2%
Computer Information Systems/Computer Science	19.5%
Computer Information Management	12.2%
Business Administration	7.3%
Other	4.9%

Current Work

All but eight of the focus group students are now working – a few with two jobs. Seven are working as Information Technology professionals now (three participants held two jobs), while two are interns in computer-related positions. Appendix 4 shows the current jobs of the 41 students. This list shows a broad array of positions that have limited futures from either a financial or career prospective. Over 75% of the focus group students were looking for a career

change. Eight students had quit jobs to study full-time, while others continued to work as a sales clerk, telemarketer, maintenance technician, fitness instructor, restaurant manager, insurance agent, casino dealer, etc.

Current Computer Skills

Most of the students currently have some computer skills. Over 60% have PC skills – primarily word processing and electronic spreadsheet. Only four students entered their course of study with no computer skills. These skills and interests were one of the considerations in selecting Information Technology as a course of study. Of the 39 focus group students that selected Information Technologies, 40% were influenced by family and friends to take these courses. About 20% were encouraged to take Information Technology courses by counselors and teachers/professors. Another 20% were self-motivated – “to see if I could do it.” As stated earlier, enhanced career and income opportunities were also a driving force for most students.

Conclusion

The above data documents what these nontraditional students are doing to enhance their career prospects. The data does not capture the human drama of their personal lives. On the by and large, the students were highly focused on career and life issues. College was a solution, not a social experience.

Several of those already employed in Information Technology were seeking a degree and the use of that “sheep skin” to validate their skill and to enhance career promotion opportunities.

For the 75% that were seeking a career change, the goal was retraining into a viable job/career opportunity. They wanted to acquire employable skills. For the nearly 37% with either a baccalaureate and masters degree, the “sheep skin” was much less important than the employable skills. There was a sense of urgency. With an average age of 34 years, ten years after the normal age for a traditional student’s college graduation, “time is of the essence.” Twenty-one students were ages 35 to 55. Some had come from military careers and were seeking civilian employment.

Students related this sense of urgency through statements such as, “I need a fast, focused, and well packaged program,” “divorced, have kid, needed to do something,” “kids are in school, now it’s my time to learn and earn.” This “time is of the essence” theme was also the backdrop for some to talk about the prerequisite and perceived academic bureaucracy they had faced. Those programs were avoided in favor of programs that got to the principal content early. For those with employable skills, but no degree, the degree was important.

Recommendations

Postsecondary academic institutions are very well positioned to meet the needs of these nontraditional students. They have:

- applied academic programs.
- available faculty to teach.
- accredited programs.
- academic reputation with employers and employees.

They sometimes, however, hide these advantages behind:

- academic bureaucracies
- prerequisites
- limited/untimely class offerings
- class times/location
- some irrelevant classes/content, etc.

These favorable attributes and academic bureaucracies were considered by the students in the focus groups. The desire for employable skills was very high. Academic bureaucracy, length of the program, location, and other considerations mitigated the perceived advantages at times. For example, one program with 19 students was not accredited by the Nebraska provider; however, demand has been very strong. It will be a “plus” if the classes are accredited; but for the 15 of the 19 already holding an associates, bachelors, or masters degree, relevant content and timing exceeded the credit status of the course.

As firms and employees move deeper into the fast paced Information Age, greater stress will be placed on each of the four attributes mentioned above. It will be increasingly difficult to:

- keep applied programs relevant.
- keep/acquire faculty to teach new content.
- accredit courses as fast as technology changes.
- maintain a reputation for excellence and relevancy.

It is likely that the nontraditional population will grow as a percent of all students. It is also likely that both historical IT disciplines as well as new/emerging IT disciplines will be in great demand. The institutions that will be most successful in attracting nontraditional students as the century changes will be those that are most flexible and responsive in the academic content while accommodating the schedules and the sense of urgency of these students.

Appendices

Appendix 1

Definitions for Nontraditional Students

Minimally Nontraditional – Students with only one nontraditional characteristic were considered “minimally nontraditional.” In general, these students were most often either older than typical or enrolled part-time in postsecondary education.

Moderately Nontraditional – Students with two or three nontraditional characteristics were considered moderately nontraditional. These students tended to be older than typical, independent, and attended part-time.

Highly Nontraditional – Having four or more nontraditional characteristics distinguished students identified as highly nontraditional. In addition to those characteristics associated with moderately nontraditional students, about two-thirds of highly nontraditional student either had dependents or worked full-time, and about one-quarter were single parents.

Definitions of Nontraditional Characteristics

Older Than Typical Ages

- 20 years or older in first year
- 21 years or older in second year
- 22 years or older in third year
- 23 years or older in any year

Part-time Enrollment – Students who attended school part-time when they enrolled in the fall of the survey year were considered nontraditional.

Financial Independence – Parents of dependent students are expected to pay for a portion of their child’s education, while parents of independent students are not obliged to do so (though many parents do provide assistance). Therefore, independent students often carry a greater financial burden than dependent students and as such are considered nontraditional.

Full-time Employment While Enrolled (in October) – If a student indicated working 35 or more hours per week, the student was considered nontraditional.

Dependents – Undergraduates who reported having dependents other than a spouse were also designated as nontraditional. In addition to children, dependents may include elderly parents, siblings, or other members of the family for whom the student is financially responsible.

Single Parents – If a student was not married, but reported having dependents other than a spouse, that student was identified as a single parent and nontraditional.

GED Recipient or Certificate of Completion – A student who did not receive a standard high school diploma, but reported completing high school either by receiving a GED or a high school completion certificate.

Appendix 2

Previous Degree Fields/Fields for Students Reporting Degrees

Associate Degrees	Bachelor Degrees	Masters Degrees
Computer Programming	Biology (2)	MBA
Information Systems	Business Communications	Political Science
Management	Electrical Engineering	Exercise Science
Liberal Arts	Social & Political Sciences	Communications
	English	
	French	
	Political Science	
	Nursing	
	Microbiology	
	Continuing Studies	

Appendix 3

Current Fields of Study

Number of Students	Field
5	Computer Information Systems
1	Business Administration
5	Computer Information Management
1	Telecommunications
1	Double Major – Business Administration/Computer Information Management
1	Double Major – Business Administration/Accounting
4	Computer Networking
1	Art
3	Computer Science
13	Programming – COBOL
1	Electronic Imaging
4	Micro-computer Programming

Appendix 4

Current Jobs

Number of Students	Job
1	Analyst/Consultant
3	Network Administrator
4	Computer Programmer
1	Personnel
2	Web Development
1	Financial Accounting
2	Intern – Computers
3	Sales
1	Accounting Clerk
1	Work Study
1	Help Desk
1	Part-time Teacher Assistant
1	Optical Services
1	Catering/Restaurant Management
1	Maintenance Mechanic
1	Fitness Instructor
1	Restaurant Management
1	Audio-Visual Technician
1	Computer Consulting
1	Insurance Agent
1	Casino Dealer
1	Printing Press Operator
1	Delivery Assistant
1	Inbound Telemarketing
1	Office Administration Work
1	Clerk

Summary

8	Not working Several students had more than one job
12	Computer or telecommunications
24	Non-IT jobs