

Enrollment Decisions and Persistence of On-Line Learners in NACTEL and EPCE

An Exploratory Study
Final Report
B-2006-8
August 2007



A research project conducted by the Council for Adult and Experiential Learning
with support from the Alfred P. Sloan Foundation

TABLE OF CONTENTS

4	Acknowledgements
5	Executive Summary
7	Introduction
10	Findings and Analysis: Students, enrollment patterns and degrees
14	Findings and Analysis: Data sources 1-6
14	Data source 1: Preliminary student interviews
15	Data source 2: Focused interview: Employer and labor representatives
17	Data source 3: Online survey
19	1. Current students
21	2. Graduates
23	3. Students taking a break
25	4. Students who left the program permanently
26	Data source 4: Follow up student interviews
28	Data source 5: School data
30	Data source 6: Bureau of Labor Statistics employment data
32	Conclusions and recommendations
34	Questions for further study
35	Conclusion

APPENDICES

36	Appendix A - Brief Biography: Ruth Chapman
36	Appendix B - Focused interview guide: Preliminary student interviews
38	Appendix C - Focused interview guide: Industry and labor representatives
40	Appendix D - Summary: Student and industry focused interviews
46	Appendix E - Online survey with responses: Current students
60	Appendix F - Online survey with responses: Graduates
68	Appendix G - Online survey with responses: Students taking a break
74	Appendix H - Online survey with responses: Students who left the program permanently
81	Appendix I - Comparison Tables:
	What stands out, all groups and both schools,
	Factors influencing taking a break, both schools,
	Factors influencing leaving program permanently, both schools
83	Appendix J - Interview guide and summary: School representative focus group
88	Appendix K - Bureau of Labor Statistics employment data

Acknowledgements

The Alfred P. Sloan Foundation

CAEL and the research team responsible for this study are grateful to the Alfred P. Sloan Foundation for its financial support, as well as its continued interest in and support of working adult learners in an online learning environment.

The Project Team

The success of this study depended on the ongoing contributions of the broad-based group that formed the research team. This team included an external researcher, CAEL staff with research responsibilities as well as those staff members with direct responsibilities for NACTEL and EPCE management, and key staff from Pace University and Bismarck State College.

Lead Researcher

Ruth Chapman (Brief biography included as Appendix A.)

CAEL Staff

Susan Kannel, Senior Director Online Programs, NACTEL Executive Director

Karen Steinberg, Vice President

Jo Winger de Rondon, Vice President

Devon Sheldon, EPCE Director

Dr. Cheryl Blanco, Vice President for Lifelong Learning Policy and Research

Bismarck State College

Dave Clark, Executive Vice President

Carla Braun-Hixon, Associate Vice President for Continuing Education, Training and Innovation

Alicia Berger, Energy Technology Training Manager

Pace University

Dr. David Sachs, Associate Dean, NACTEL Co-Director

Nancy Hale, Department Chair, NACTEL Co-Director

Peter Cronin, Data Systems Manager

Paulette Muller-Girard, Data Systems Manager

Advisory Committee

An external Advisory Committee made valuable contributions to this study. Members of this committee included:

Dr. Chuck Dziuban, Research Initiative for Teaching Effectiveness - University of Central Florida

Ms. Vivian French - Oklahoma Gas and Electric, representing EPCE

Ms. Yvette Herrera - Communications Workers of America, representing NACTEL

Dr. Robert Regan - Former President, New England College of Finance, currently with Boston Public Schools

Dr. John Sener - Private Consultant, Sloan Asynchronous Learning Network

Dr. Peter Shea - University at Albany, State University of New York

IOTA Solutions

The development and subsequent data analysis of the online student survey benefited greatly from the professional expertise of Dr. Matthew Champagne and IOTA Solutions.

Students and NACTEL and EPCE Leadership

Finally, the success of this study depended on the willingness of many individuals to openly share their thinking and experiences. Many, many students were willing to express perceptions, challenges, frustrations and successes - thanks to them. And thanks to NACTEL and EPCE leadership who agreed to be interviewed as part of the study.

Executive Summary

Purpose

The purpose of this study was to learn more about working adult learners, their enrollment decisions and their persistence toward an associate's degree in two online degree programs. One of these programs has been offered by Pace University since 1999 and is sponsored by the National Coalition of Telecommunications Education and Learning (NACTEL). The other has been offered by Bismarck State College since 2001 and is sponsored by the Energy Providers Coalition for Education (EPCE).

The study began in the spring of 2006 and was completed 12 months later, in late spring 2007.

We designed methodologies to collect and analyze quantitative and qualitative data that focused on student experiences and choices related to enrollment, continuation, and degree completion in the two programs noted above.

Data sources

The research team used multiple data sources, both quantitative and qualitative, to triangulate the data, a brief overview of which is included in this summary. The data sources are described in detail in the introduction to this report, and included:

1. Preliminary focused interviews / students.
2. Focused interviews / industry representatives.
3. Online student survey / all NACTEL students at Pace University and all EPCE students at Bismarck State College, four versions for each school:
 - a. Students currently enrolled,
 - b. Students completing the associate's degree,
 - c. Students taking a break, and
 - d. Students who the left program permanently.
4. Focused follow up interviews, as needed / students completing the online survey who volunteered to be contacted.
5. School data, including enrollment data and a focused group interview.
6. Bureau of Labor Statistics.

While all these data sources were important to the research, particular insights into student decisions and behavior were gathered from the online student survey. Of the 3,200 students identified as participating in these two programs over the time of the study, we were able to obtain valid email addresses for 2,369 students. Of those 2,369 students, 589 or 25% (24% of Pace/NACTEL students and 29% of BSC/EPCE students) responded to this survey.

Key findings about student persistence

- Students in these programs persist to reach their goals despite multiple obstacles. Of the 589 students from both programs who responded to the online survey, only 10% described themselves as "leaving the programs permanently." Sixteen percent described themselves as "graduates;" 49% described themselves as currently enrolled, and 26% described themselves as taking a break, but with full intentions to re-enroll. While these student responses to the survey cannot be generalized to the full population of all students ever enrolled in these programs, and while graduates of these programs were over-represented in this survey and students who left permanently were under-represented, the responses are still informative as to student intentions and patterns.
- For working adults, the flexibility of the online learning format is extremely important.
- For NACTEL and EPCE students, industry sponsorship of these programs adds significant credibility.

- Attaining a degree is an important accomplishment to individual students.
- Completing a bachelor's degree, in particular, is a lifetime dream for many adults.
- Completing the degree may not be the goal upon entry, but frequently becomes the goal after initial success in a program.
- Degrees have mixed importance to employers, depending on the industry and job title within the industry, and this importance to the employer seems to influence student completion patterns.
- In a finding that was industry-dependent, skill sets related to courses or subsets of degrees (problem solving, communication, technical preparation for specific jobs, for example) can be more important to employers than degrees.
- In these programs "success" has multiple definitions, not all of which are tied to degree completion.
- Employer-sponsored tuition assistance is a significant support strategy for these students. However, the way the tuition assistance program is designed and administered can also create significant barriers related to student persistence toward degree completion.
- While the associate's degree is often referred to as a "two year degree," the average mean time to graduation was 2.5 years for EPCE students at Bismarck State College and 3 years for NACTEL students at Pace University. For some students, the estimated time to degree completion was much longer. The vast majority of the students in these programs who responded to the online survey persist toward completion of the goal despite the length of time it takes them to complete. (Ninety percent of survey respondents described themselves as graduates, currently enrolled, or taking a break; only 10% of survey respondents described themselves as having left the program permanently.)
- Among many variables, time to degree is often affected by the number of transfer and other academic credits accepted by BSC and Pace University.

This study of student persistence provided all of us - including the EPCE and NACTEL partners, Pace University and Bismarck State College, and CAEL - the opportunity to learn more about these programs and their students, and as a result, to better serve both the students and the industries.

Enrollment Decisions and Persistence of On-Line Learners in NACTEL and EPCE: An Exploratory Study

Introduction

Since 1998, CAEL has been instrumental in developing an industry-led approach to online education. In the telecommunications industry, The National Coalition for Telecommunications Education and Learning (NACTEL) began offering customized coursework through its primary educational partner, Pace University, in 1999. Representing the electric power industry, The Energy Providers Coalition for Education (EPCE) began offering customized coursework through its primary educational partner, Bismarck State College, in 2001.

NACTEL and EPCE are, at the same time, both alike and different. Common characteristics shared by the two initiatives include:

- Each program is offered online in an instructor-led format.
- The curriculum for each initiative is developed and continually updated in a highly collaborative process that includes industry subject matter experts and academic faculty.
- Each initiative offers an associate's degree and a series of embedded certificates, which form a stepping-stone credentialing process.
- Both programs now offer bachelor's degrees; Pace University began offering a NACTEL-sponsored bachelor's degree in 2004, and EPCE added bachelor's degrees offered by Thomas Edison State College and Excelsior College in 2006. Bismarck State College plans to begin an energy-related bachelor's degree in 2008.
- The curricula sponsored by NACTEL and EPCE are highly technical and target specific technical job families in each industry.

There are also significant differences between NACTEL and EPCE, primarily determined by the structure of the two industries. Telecommunications is a large and consolidated industry, with several major companies employing a high percentage of workers (a monthly average of 972,900 in 2006) in the industry. Verizon and AT&T, for example, each have a workforce of roughly 200,000. By contrast, the electric power industry is smaller and more dispersed, employing substantially fewer people overall (a monthly average of 238,600 in 2006), with the workforces in the largest companies rarely exceeding 20,000. While industry structure is the primary difference between NACTEL and EPCE, a host of secondary differences include:

- There are fewer aggregated resources for training and education in the electric power companies, which has increased the reliance on EPCE-sponsored curriculum to meet multiple internal training needs.
- For the past 5-plus years, the telecommunications industry has experienced mergers and downsizing; as a result, these companies do not anticipate short-term workforce shortages. The employment projections are very different in the electric power industry, with anticipated retirements predicted to create major employment shortages in the next few years.

The differences between these industries created a significant backdrop for this study.

Origin of this Study

This study was first conceived in 2004. At that time, the NACTEL program at Pace University was five years old and the EPCE program at Bismarck State College was in its third year. Both NACTEL and EPCE had averaged 20% program growth during those early years, but the number of students graduating with the associate's degree hovered at about 10% in each of the programs. That is, in 2005,

out of all of the students to enter each program (2060 in NACTEL and 700 in EPCE) only about 10% had completed their associate's degrees (approximately 200 in NACTEL and 81 EPCE).

The Sloan Foundation originally posed the question, "Why so few degrees?" After preliminary discussions, the important research question became, "What is a 'successful' graduation rate for adult students in these kinds of programs?" These early questions formed the background for this study. In 2006, when this study was funded, the revised purpose statement read:

This study will collect and analyze quantitative and qualitative data focused on student experiences and choices related to enrollment, continuation, and degree completion in NACTEL-sponsored programs offered by Pace University and in EPCE-sponsored programs offered by Bismarck State College.

Next, with input from the Sloan Foundation, the questions were refined and categorized in this manner:

Students

- How do students view each of these programs? Are there differences between students in each of the schools?
- What are the key patterns in enrollment and decision making?
- What are students' goals? How do they define their own success?
- If students do leave these programs, why do they do so?
- What are the potential barriers for students and can they be addressed?

Industries

- How do the industries view these programs? Are there differences between the two?
- What are the industry goals for each program? Are these goals aligned with or different from student goals?
- How do the industries view degree completion in each program? Are there other success metrics used by the industries?

Schools

- What does the data collected by each school tell us about student enrollment patterns and degree completion?
- What retention strategies are in place at each of the schools and with what outcomes?
- Are there differences between the two schools?

Multiple data sources

As the research team considered these questions early on, the group determined there were multiple and complex factors influencing NACTEL and EPCE graduation rates. Overall, these factors were divided into three categories: student factors, industry/employer factors, and school factors. The preliminary thinking specifically spelled out:

■ Potential student factors, including:

- Purposes upon entering the program
- Work demands and responsibilities
- Family demands and responsibilities
- Personal factors, such as finances and health
- Relevance of NACTEL and EPCE curriculum to everyday work and possible career advancement

■ Potential industry/employer factors, including:

- Importance placed on the degree; importance and potential career benefits tied to specifically selected/package courses
- Alignment of the degree to workforce needs

- Tuition assistance support and infrastructure
- Overall industry health, including growth projections and employment trends
- Potential school factors contributing to the overall experience of each student, including:
 - Quality of student support systems
 - Quality of instruction
 - Communication with students
 - Presence or lack of perceived barriers

Upon reviewing the revised questions, and based on the preliminary discussions, the research team developed a design that included six data sources:

1. Focused interviews / students

- Phone interviews with 12 students (8 NACTEL / 4 EPCE) who were currently enrolled or who recently graduated
- Purpose: to gauge motivation, goals, expectations, patterns, barriers, etc; to inform construction of online survey

2. Focused interviews / industry representatives

- Phone interviews with 16 industry representatives (6 NACTEL / 10 EPCE)
- Purpose: to gauge industry support of and value placed on education and degree/certificate completion; to better understand the industry messages sent to incumbent workers, and to gauge internal use(s) of each program by industry members

The overall structure of the telecommunications and electric power industries and the age of each program determined the number of interviews in Data Sources 1 and 2. More NACTEL than EPCE students were interviewed in Data Source 1 because the NACTEL program was older with a larger industry pool from which to draw, resulting in higher overall enrollments. More EPCE than NACTEL industry representatives were interviewed in Data Source 2 because the telecommunications industry is more consolidated, resulting in a smaller governance group. EPCE, representing a less consolidated electric power industry, has a much larger industry governance group.

3. Online survey / all NACTEL students at Pace University and all EPCE students at Bismarck State College

- Four versions for each school, including:
 - a. Students currently enrolled,
 - b. Students who had completed the associate's degree,
 - c. Students taking a break, and
 - d. Students who the left program permanently.
- Purpose: to collect student data regarding early and later educational goals, satisfaction with progress, perceptions of employer priorities and support, perceptions of program ease and/or obstacles, factors influencing rate of program completion

4. Focused follow up interviews / students completing the online survey who volunteered to be contacted

- Purpose: to collect additional clarifying data to augment Online Survey responses, as needed

5. School data, including:

- Enrollment data from Pace University and Bismarck State College, used to establish enrollment, enrollment patterns, graduation rates and time to degree completion.
- Focused group interview / college representatives for the purpose of documenting the strategies to support retention and completion that each school had initiated and used during the student's participation in the program.

6. Bureau of Labor Statistics

- Review Bureau of Labor Statistics (BLS) statistics describing employment trends and patterns in each industry during NACTEL's and EPCE's history

- Purpose: to document industry changes that potentially influenced student enrollment patterns, particularly relating to those students who may have “left the program permanently.”

Limitations

After determining the sources of data to be developed for this study, the team agreed to several other definitions and limitations, including:

- To facilitate data collection, the study would rely on the academic school year of September through August, rather than a calendar year.
- Since the study began in the summer of 2006, data would be considered from the beginning of each program through August 2005, 1999-2005 for NACTEL and 2001-2005 for EPCE.
- The study would be limited to graduates at the associate’s level, even though Pace University had been offering a NACTEL-sponsored bachelor’s degree since 2004.
- Aggregate data provided by each school would reflect “cohort” enrollments. For the purposes of this study, a “cohort” was defined as the group of new students who entered each program in a given year. The research team made the decision to track cohorts rather than individuals for two reasons. First, tracking the enrollment patterns of individual students would be cost-prohibitive and beyond the scope of this exploratory study. Second, each school carefully guarded student privacy, and it would have been a daunting task to get permission from every student to share his/her personal enrollment data.
- Because all the adult students in this study would have to grant permission to be surveyed and interviewed at each step in the data collection, the research team (which included representatives from each school) decided to implement the study without an institutional review process.

Findings and Analysis

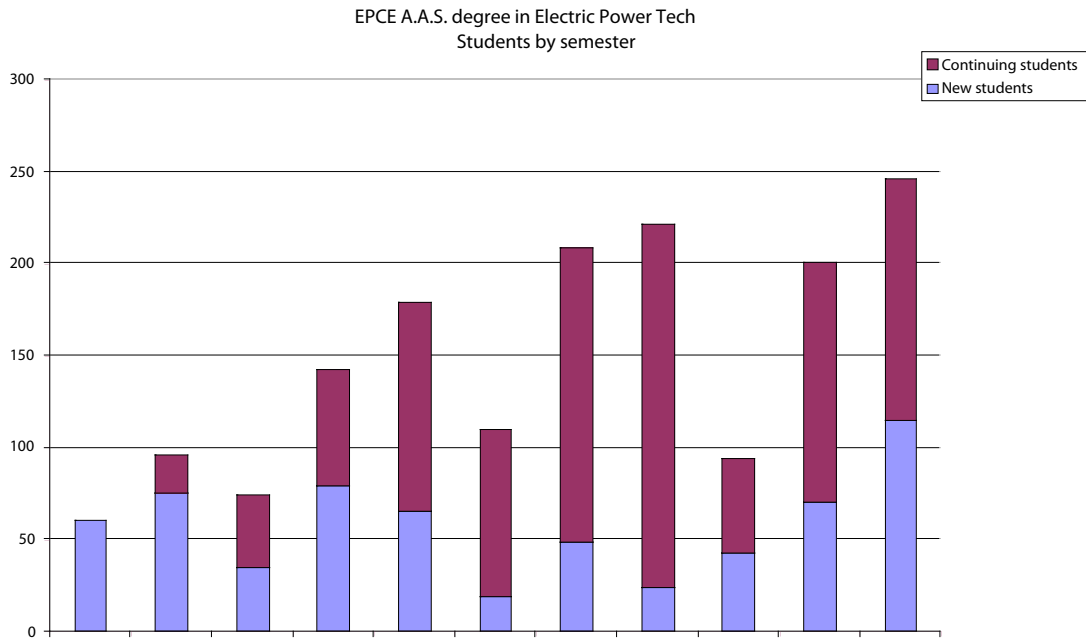
Students, Enrollment Patterns and Degrees

Students and enrollments

Pace University and Bismarck State College have provided extensive enrollment data to CAEL and to the NACTEL and EPCE industry coalitions since the beginning of each program. As part of ongoing program management, these data provide the foundation for many critical decisions related to each program. For this study, the research team decided to use existing historical enrollment and graduation data, as well as creating a “cohort” tracking system to look anew at specific graduation patterns for groups of students entering each program each year.

Both programs track overall enrollment data, separating returning and new students. Graphs summarizing these data are included below. NACTEL enrollments in Pace University clearly demonstrate the height of the telecommunications industry employment in 2001-2002, followed by a drop in 2002-2003. Year 6 NACTEL data reflects a “shorter” reporting year, when Pace University changed its fiscal and reporting year from September - August to June - July.

EPCE data is reported by semester rather than by year, but overall show a fairly constant growth rate. EPCE data reflect enrollments in one of the EPCE-sponsored degree programs offered by Bismarck State College, the Associate of Applied Science (AAS) in Electric Power Technology. A second EPCE-sponsored degree, the AAS in Nuclear Power Technology, was too new at the time of this study for any students to have received their associate’s degree.



A closer look at cohort groups

The research team decided to more closely examine the patterns of cohort groups as each group entered Pace University or Bismarck State College. For the purposes of this study a “cohort” referred to the group of new students entering the program each year. The cohort groups tracked below align with the number of new students from the enrollment graphs above.

The categories used to track each of the cohorts below align with the four categories into which the research team hypothetically “divided” all students:

1. Currently enrolled
2. AS graduates
3. Taking a break
4. Left permanently

Bismarck State College Cohorts

Year of Entry	# new students	# AAS degrees by 2005	% degree by 2005	# still enrolled in 2005	% still enrolled	# break or left permanently	% break or left permanently
2001-02	168	22	13.1%	15	8.9%	131	77.7%
2002-03	165	33	20.0%	60	36.3%	72	43.6%
2003-04	160	26	16.2%	75	46.8%	59	36.8%
2004-05	219	na		219	100%	na	

Pace University Cohorts

Year of Entry	# new students	# AS degrees by 2005	% degree by 2005	# still enrolled in 2005	% still enrolled	# break or left permanently	% break or left permanently
Pilot Year 1999-2000	106	12	11.3%	11	10.3%	83	78.3%
2000-01	471	64	13.5%	65	13.8%	342	72.6%
2001-02	351	54	15.3%	85	24.2%	212	60.3%
2002-03	397	56	14.1%	155	39.0%	186	46.8%
2003-04	200	16	8.0%	124	62.0%	60	30.0%
2004-05	240	2	0.8%	221	92.0%	17	7.0%

These tables demonstrate the actual number of associate degree graduates from each institution: 81 EPCE-sponsored students from Bismarck State College and 204 NACTEL-sponsored students from Pace University. We can also see that graduation rates through 2005 for BSC students ranged from approximately 13% for the 2001-02 cohort to 20% for the 2002-2003 cohort. For Pace, the graduation rate ranged from 11.3% from the pilot group, to 15.3% of the group that entered in 2001-2002. It is likely that these rates will eventually be somewhat higher, considering the number of students from early cohorts still enrolled in the 2005-06 school year. The unusually high percentage (77.7% for BSC students and 78.3% for Pace students) from the pilot, first-year cohorts who either left permanently or were taking a break is probably linked to students who were asked to become pilot students, to “test out a new program and online learning” in each program’s first year. One of the left-permanently students mentioned this in the online survey when he/she said, “I took the course as a pilot for my company’s participation.”

It is also likely that the comparatively high Pace University numbers of 72.6% and 60.3% who either took a break or left permanently in years 2000-01 and 2001-02 were directly related to the significant downsizing that occurred in the telecommunications industry during those years, documented through Bureau of Labor Statistics on page 30 and in Appendix K.

For both schools, based on school data, it was impossible to separate the “taking a break” students from the “left permanently” students reported in the far-right column. We know that some of the students in these two categories completed certificates, but because those certificates were embedded into the associate’s degree, reporting the number of certificate completions as a discrete category would be misleading. Because of the importance placed on certificates by the electric power industry, it is likely that a higher percentage of EPCE students left the BSC program after certificate completion than did NACTEL students at Pace University. The Online Survey, Data Source 4 (pages 26-30) provided additional information about these two groups, most significantly that survey respondents who were not currently enrolled often characterized themselves as “taking a break” with strong intention to return to their program. These data reinforce the notion that a longer time to degree, characterized by one or several breaks from continuous enrollment, is more the norm than the exception for the working adults that these programs serve.

Course completion

Another accepted measure of success in online programs is the proportion of students who complete a course that they start. Excessive course drop rates can signal either that students are unprepared for the course content or that the courses are poorly designed or delivered. Each of these factors can contribute to low persistence rates of students in a program.

Each of the schools has routinely collected course completion data. Course completions for both schools have consistently ranged from 95% - 98%, meaning few students fail to complete the courses they start in these programs. In instances where completions were significantly lower than this, the schools intervened with either a major course revision and/or faculty replacement.

This relatively high level of course completions could indicate several things. First, tuition assistance plans vary widely among EPCE and NACTEL employers, and those policies that require students to repay an employer for an incomplete course would motivate students toward course completion. Secondly, these high course completion rates would also suggest that if and when students left these programs permanently, it was probably for reasons other than problems with course design or other possible unsatisfactory experiences with a course. The fact that there were relatively few comments about problems with specific courses in the online survey or from any of the focused interviews with students (in fact, the opposite was true) also supported this second assumption.

Time to degree

Measures of “time to degree” and expected length of time to complete a degree or program is one of the data points used to describe the enrollment patterns of traditional students. Expectations that a student will complete an associate’s degree in two years assume that the student with no transfer credit or other credits gained through prior learning assessment will complete approximately 30 credits in a year and continue for two years with no breaks. Even measures of success that lengthen this expected period to three years would require this same student to take 6 or more courses each year for 3 years. These expectations are often unrealistic for working adults, even if they have the support of their employer and are fortunate enough to have an online program designed for accelerated and flexible learning. It is often necessary to extend time-to-degree measures out for several years to get a realistic pattern of persistence and completion.

Against this framework the question of time to degree was a particularly important one. For Pace University the average time for a NACTEL student to earn an associate’s degree was 3 years; for Bismarck State College, the average time was 2.5 years. It is important to note that this is an average. Because there were students from the first year of each program still taking courses in 2005-06 (and still today, in 2007), it is safe to assume that a percentage of those students still taking courses will eventually complete the associate’s degree.

Even though there are many factors that influence an average time to graduation, including the breaks a student might take along the way, the length of those breaks, the number of transfer credits and other prior learning experiences evaluated and recognized by the college for college credit, in the case of these two schools, we believe the difference in the average time to graduation is likely related to course scheduling formats. A traditional college semester is 15 weeks in length. Pace University has an accelerated 12-week format for its online courses. Bismarck State College has a “block” format, in which students can take up to five 3-week (average length) courses in a 17-week semester, making a slightly shorter average time to degree completion.

Findings and Analysis: Data Sources 1-6

Data Source 1: Focused interviews / selected students

Data collection for this project began with phone interviews of twelve students including those who were currently registered as well as recent graduates from Pace University and Bismarck State College. To select these students, each school sent email requests to groups of students who were currently enrolled and/or who had recently graduated, particularly looking for those students who had been in each program for longer periods of time. If there were insufficient responses to the email, school personnel followed up with personal phone calls. Confidentiality requirements made random sampling for this group difficult.

These interviews were designed to produce data which would provide the foundation for the online survey (Data Source 3). The interview guideline for the preliminary focused interviews is included as Appendix C.

Key Findings

■ About the importance of education.

All twelve students emphasized how important the opportunity to continue their education was to them. Not all began with the intention of completing an associate's degree, but the degree became the goal after taking some classes. Additional motivations to complete the degree included:

- "To become a better employee"
- "To stay current"
- "To set an example for my kids"
- "To take advantage of the online learning format"

Sample Quotes:

"When I began, I didn't really have an idea of what EPCE was about. A manager asked some of us to enroll in this pilot program . . . so I didn't have a goal in the beginning. After a while I just got more interested . . . then I wanted to finish the associate's . . . I could have stopped any time, but I just kept going . . . it took me 4 years. Sometimes I had to skip a term to give my brain a rest. . ."

"I was too young when I was young! I didn't understand the value [of a college education] and went straight to work after high school. I'm a single mom and have had a burning desire to go to college. 27 years after graduating from high school I started with NACTEL. Then my mom had a stroke. I've been plugging away for 5 years but now I'm only 3 courses away from completing my Associate's degree. Now I want a Baccalaureate degree!"

■ **About promoting the programs and career ladders** – even though students were generally not aware of career advancement or promotion opportunities linked to NACTEL and EPCE, they saw other indications about the importance of these programs, including:

- An employer's and/or union's membership in NACTEL and EPCE
- Employer support of a "learning advocate" network
- Employer-provided tuition assistance
- Several mentioned the importance of hand written notes or personal emails from company representatives upon graduation

■ **How NACTEL and EPCE are viewed:** both programs and both colleges were seen in very positive ways by the students interviewed.

“BSC has made the program very friendly to working adults. It’s worked out fine for me. No suggestions for improvement. . .”

“I don’t feel invisible. I’ve been in other programs—at a university, a community college . . . no one even noticed when I dropped out. Pace acts as though they care . . . that’s what motivates me to stick with it.”

■ About tuition plans

- Many cited the importance of the company’s tuition plan in their lives and in support of their decision to return to school.

“The company’s plan is great! No limits and it pays for everything except books.”

“Our tuition plan pays up front. Employees must submit grades and anyone who earns a “C” or better gets tuition paid fully for the next term.”

- Students reported that more restrictive tuition plans were a significant factor in slowing down their progress in school.

“The cap for managers in the company’s plan only allows me to take 1 class a semester . . . “

“I ‘capped up’ pretty fast.”

The data collected from the first focused interviews presented no real surprises, but instead confirmed many of the research team’s original hypotheses about potential factors influencing student behavior. As predicted, these interviews did provide the foundation for developing the Online Survey. See Appendix D for complete summary.

Data Source 2: Focused interviews with NACTEL and EPCE industry and labor representatives

Since most of the students in NACTEL and EPCE sponsored programs were incumbent workers, support or lack of support from each student’s employer, as well as from their labor unions, played a significant role in that student’s participation and persistence in the program. To document the messages given to industry partner employees and members, we were able to schedule and complete interviews with thirteen representatives of NACTEL and EPCE, representing both employers and labor. These interviews provided an important context from which to view student participation in both programs. The interview guide for these interviews is included as Appendix C.

Key Findings

■ About the importance of education

- There was general agreement about the importance of education.

“Education is important now and will be more critical in the future.”

“We can always train someone to do a job. There is a wide spectrum of jobs within a specialty, but it helps to have someone with theoretical knowledge going in.”

- In both industries, degrees were seen as more important, even an expectation, in management job titles than in non-management titles.

- Differences did emerge between the two industry sectors and among job titles.
- Specific courses and certificates were viewed as more important than degrees in the electric power industry. Two quotes from EPCE company representatives illustrated this:

“We are very satisfied with the certification employees receive when they complete the 7 courses from BSC that are needed for a new position we have created and are trying to grow . . .”

“I don’t care about our employees completing a degree. I care about their taking 12 courses that are technically related . . . I care about technical expertise. Whatever the number of courses that it takes to get to the technical level the company needs—that’s what I want employees to do. If they choose [emphasis added] to go on from there and finish, that’s great.”

(This difference between the two industries re-surfaced later in the study when data from the online survey was analyzed.)

- Several people mentioned education as a source of tension among workers, citing the shift in an experienced-based culture to one based on credentials.

“Career ladders are experienced differently by the young and the old. New hires want to be where they want to be now. [Emphasis added.] They don’t want to start at the bottom of the ladder. There is tension between them and older employees who worked their way up via field experience.”

■ About promoting the programs and career ladders

- The amount of promotion varied significantly by company.
- Most often these programs were not linked to a visible career ladder or to increased wages. There were several exceptions to this, however, including:
 - o Several of the electric power companies have packaged specific EPCE courses as a designated path to prepare for specific job titles.
 - o One of the original NACTEL companies, SBC (now AT&T) waived a qualifying technical test for students completing one of several technical certificates of the Pace University associate’s degree.

■ How NACTEL and EPCE are viewed: both programs and both colleges were viewed in very positive terms by industry representatives.

“Pace and NACTEL go out of their way . . . Now it’s up to us to push it more aggressively. . . we need people who can think on their feet and adapt quickly. Pace/NACTEL enables them to do that.”

“We’ve had great cooperation from EPCE and Bismarck State College. BSC and EPCE have been fantastic.”

■ About tuition plans

- Tuition plans vary significantly by company and by industry and are a major factor in industry support.
- Even the most generous tuition assistance plans can vary over a period of time and across geographical areas, again affecting both the overt and covert messages sent to employees.

Tuition plans, including both the amount of funding available for tuition and books and the ease with which these funds can be accessed, emerged later in the study as a significant variable in student persistence.

Data Source 3: Online survey

The Online Survey was the most comprehensive and qualitative data source in this study. This survey was sent to everyone who had ever taken a NACTEL-sponsored course at Pace University and an EPCE-sponsored course in the Electric Power Technology program at Bismarck State College from the beginning of each program through 2006, making it the only opportunity that all students had to participate in this study.

There were 8 versions of the survey, 4 each for Pace University and Bismarck State College. An invitation to complete the survey was sent from each school to all students, 2488 total Pace University/NACTEL students and 712 BSC/EPCE students, with two follow up reminders sent at one-week intervals. Upon entering the survey, students self selected into one of four groups,

1. Students currently enrolled,
2. Students who completed the associate's degree,
3. Students taking a break, and
4. Students who left program permanently.

All versions of the online surveys, both questions and responses are included as Appendices E - H.

Summary of response rates

There were faulty email addresses for 627 (25.2%) of the 2488 Pace University students and for 204 (28.6%) of the Bismarck State College students. Given the resources available and the scope of this exploratory project, the research team decided not to use other means to attempt to contact students with invalid email addresses.

Using the valid email addresses as the base, response rates for this survey were 23.8% of NACTEL students at Pace University and 28.9% of EPCE students at Bismarck State College. The following table summarizes the email responses in the online survey.

	Pace	BSC	Combined
Total email requests sent 2.27.07	2488	712	3200
Number returned (invalid email address)	627	204	831
Percentage returned (invalid email address)	25.2%	28.6%	25.9%
Number of valid emails	1861	508	2369
Current students / responses (1)	250	36	
Graduates / responses (2)	50	45	
Taking break / responses (3)	98	54	
Left permanently / responses (4)	44	12	
Total number of responses	442	147	589
Percentage responses from valid emails	23.8%	28.9%	24.9%

Because students self-selected into each category, and because the graduate category is the only one with a known number, it is impossible to know what percentage of the possible number of responses we received in each category. Given those limitations, the following table outlines the numbers and percentages of the total respondents from each school represented each category.

	Pace		BSC		Com- bined	
Total responses	442		147		589	
Responses / current students	250	56.5%	36	24.4%	286	48.5%
Responses / graduates	50	11.3%	45	30.6%	95	16.1%
Responses / taking a break	98	22.1%	54	36.7%	152	25.8%
Responses / left permanently	44	9.9%	12	8.1%	56	9.5%

In evaluating response rates by category, the only survey category in which we knew the exact number of students was the graduate category. Through 2005, 204 students graduated with a NACTEL-sponsored associate's degree from Pace University. Therefore, the 50 respondents to the survey represented 25.4% of this group. Through 2005, 81 graduated from Bismarck State College with an EPCE-sponsored associate's degree; the 45 respondents to this survey represented 55.5% of that group.

Key Findings: Online Survey

Part 1: Current Students

250 Pace University students responding (56.5% of Pace survey respondents)

36 Bismarck State College Students responding (24.4% of BSC survey respondents)

Overall, 48.5% of the students responding to the survey characterized themselves as current students, with a higher percentage coming from Pace University than from BSC.

Length of time in the program

- About 38% of students currently studying at BSC through the EPCE program reported that they had been in the program three years or longer. At Pace, 34% of those responding said they had been in that program at least three years. Twenty-three (9%) of the Pace respondents reported that they had been students in this program since its inception.

These findings support the high persistence of these students and are not surprising since we know it takes the **average** working adult learner longer to attain his or her education goals than it takes the average full-time college student.

About goals and needs

- Three-quarters (75%) of the EPCE/BSC current students and fully 80% of those studying with NACTEL/Pace reported that the program has “met all their needs” with many of those reporting their needs had been met “very well.”
- More than one-third (34%) of responding EPCE current students said that their most important goal when entering the program was an Associate’s degree. The Associate’s degree was also the most important goal for over half (53%) of the NACTEL/Pace respondents.
- We should also note 41 of the Pace respondents (67%) selected “other” as a “very important” goal when they entered their program and 28 of those 41 students specified “going on to complete a Baccalaureate (BS) degree.”
- When asked about their most important goal today, 46% of EPCE/BSC respondents and 51% of NACTEL/Pace students again cited completing an Associate’s degree; and
- Sixteen percent (39 current students at Pace) selected “other” as their most important goal today. When asked to specify “other,” all stated their goal to be completing a BS degree. An industry-sponsored online Bachelor of Science degree program was established at Pace in 2004, while BSC, the newer of the two online programs examined in this study, is just now (in 2007) instituting this type of degree program. We believe this explains, in part, why a higher proportion of NACTEL/Pace students showed a strong interest in a BS degree.
- Ninety-four percent of EPCE respondents and 89% of our NACTEL respondents reported being at least “satisfied with their progress” in goal attainment. Many of these told us they are “very satisfied.”
- Respondents in both programs reported encountering some obstacles in achieving their goals. “Work-related events or demands,” “family events or demands,” and “personal events or health needs” were the three obstacles cited most frequently by both groups. For EPCE/BSC respondents “a change

in professional responsibility” was next, while for NACTEL/Pace respondents the next item was “restrictions or problems with employer tuition plan.”

About future plans

■ Almost two-thirds (66%) of responding students in EPCE and eighty-two percent (82%) of the NACTEL respondents indicated that they plan to continue their studies with BSC and Pace until they attain their most important goals. In both cases, these plans were contingent upon their employment status remaining the same.

About what stands out

■ We asked all the respondents what stood out for them when they thought about their experience with either EPCE or NACTEL. Across all categories in both programs, “the convenience of being able to study and do assignments any time of the day or night,” was overwhelmingly the first choice. Substantial majorities (78% of the current students responding from EPCE/BSC and 85% of those from NACTEL/Pace) agreed that was what stood out for them when they looked back on their experiences. In addition:

- Fifty-six percent of EPCE respondents in this group and 77% of the Pace group saw the “knowledge gained” as standing out.
- Sixty-one percent from EPCE and 74% from Pace noted the “program’s flexibility.”
- For EPCE respondents “personal accomplishment” stood out for just over half (53%) and for two-thirds (67%) of the NACTEL group.
- “Helpfulness of staff and faculty,” was selected by 28% of EPCE/BSC and 63% of NACTEL/Pace.

See Appendix E for a summary of the responses made by Current Students in each program; see Appendix I for a comparison of “What Stands Out” among all categories from each program.

Part 2: A. S. Graduates

50 Pace University students responding (11.3% of Pace respondents)

45 Bismarck State College students responding (30.6% of BSC respondents)

Overall, 16.1% of students responding to the survey reported themselves as graduates of their program. While a larger proportion of Pace University student respondents reported they were still enrolled in their programs, a smaller proportion of Pace students reported themselves as graduates, compared to the Bismarck State College students. In combining the two categories, 68% of Pace respondents reported themselves as either graduates or current students, and 55% of BSC respondents reported themselves as either graduates or current students.

The only survey category in which we knew the exact number of students was the graduate category. Through 2005, 204 students graduated with a NACTEL-sponsored associate's degree from Pace University. Therefore, the 50 respondents to the survey represented 24.5% of this group. Through 2005, 81 students graduated from Bismarck State College with an EPCE-sponsored associate's degree; the 45 respondents to this survey represented 61.6% of that group, making the BSC student responses more representative of the population of graduates from that program.

Length of time

Length of "time to degree" depended on several factors – some based on a student's history, and some based on work, home, personal experiences while a student is in school.

Each student who enters Pace University or Bismarck State College goes through a detailed advising process. One of the purposes of this process is to document prior learning and educational experiences which may apply toward the NACTEL or EPCE degree programs. The educational experiences that are documented upon entering the school have a direct impact on the length of time a student will be in each program. For NACTEL and EPCE students, these previous factors most often include:

- The number of transfer credits from previous academic institutions
- The availability and utilization of challenge exams

Pace University enrollment data indicated that students in the associate's degree program averaged 1.3 courses each term, resulting on average, in 3.75 course completions each year. In 2005, the average time to degree completion for each graduate was slightly more than 3 years.

Bismarck State College offers EPCE-sponsored courses in an accelerated block-style format in which students can take up to five 3-week (average length) courses in a 17-week semester. This format allowed BSC students to complete an associate's degree slightly more quickly, with an average time to degree of 2.5 years. This difference in the potential number of courses a student could take in a single year likely explains some of the difference in proportion of graduates in each of the programs and in the slightly shorter average length of time to complete a program at BSC.

- Of the 45 EPCE respondents who had attained their AAS degree, 43% told us they completed the degree in approximately 1 to 2 years; another 54% said that it took from 2 to 4 years.
- Fifty Pace graduates responded to this survey and just over half (52%) indicated they had completed their degrees in 2 to 3 years.

About goals and needs

- The BSC graduates were primarily very positive about how well their program met their needs. Eighty-one percent of them said the EPCE program "met all their needs" with more than half of those indicating the program met their needs "very well."
- A substantial majority (78%) of the Pace graduate respondents said the NACTEL program "met all their

needs” with well over half of those stating the program met their needs “very well.”

- As we would expect from graduates, nearly two-thirds (66%) of the EPCE/BSC graduates and 63% of the NACTEL/Pace graduates cited “completing an Associate’s degree” as their most important goal when they began their studies.
- Graduate respondents in both groups reported encountering some obstacles on their way to degree completion:
 - “Family events or demands” and “work-related events or demands” were indicated by over half of both EPCE/BSC and NACTEL/Pace graduates.
 - Almost one-fourth of the Pace graduates cited “restrictions or problems with employer tuition plan.” This was cited by only 9% of the BSC graduates.

About future plans

- When asked what their new education and/or training goals are, over half of each group (EPCE/BSC-64%, NACTEL/Pace-58%) selected, “to work toward a bachelor’s degree.”
- One-fifth of the EPCE respondents and nearly a quarter (24%) of those from NACTEL planned “to take additional courses to enhance my skills and make me a better employee.”

About what stands out

- Like all the other respondents, overwhelming majorities (84% of EPCE/BSC graduates and 80% of NACTEL/Pace graduates) said the “convenience of being able to study at any time of the day or night” stood out for them when they looked back on their experience. In addition,
 - The “program’s flexibility” is a stand-out for over two-thirds (69%) of the BSC group and for 64% of the Pace group.
 - “Knowledge gained,,” 51% of the BSC respondents and 66% of the Pace respondents
 - “Helpfulness of the staff and faculty,” 51%-EPCE/BSC and 62%-NACTEL/Pace.
 - “Quality of the program” and “personal accomplishments” also stood out for at least half of each group.

See Appendix F for a summary of the responses made by Graduates in each program and Appendix I for comparison data about “what stands out.”

Part 3: Respondents Taking a Break

98 Pace University students responding (22.1% of Pace respondents)

54 Bismarck State College students responding (36.7% of BSC respondents)

Overall, 25.8% of respondents to the survey reported themselves as taking a break. Slightly more respondents from BSC reported themselves in this category than did Pace University students.

About taking a break

Students “taking a break” and those who “left the program permanently” were the most difficult groups to isolate and quantify. In this study, differentiating between those two groups was done totally by self report. That is, as these students entered the online survey, they chose the category that best described themselves.

Enrollment data from schools told us that the average time to graduation was 2.5 at Bismarck State College and slightly more than 3 years at Pace University. There are several questions, however, that enrollment data did not and could not answer, including:

- Length of the “break.” Unless a student notifies a school that he/she is leaving a program (which happens rarely), it is impossible to determine through school records who has left the program and who is taking a break.
- Greatest length of time to complete the degree. The schools were unable to answer this question because, in both programs, students were currently registered who had been with the program since its inception. That is in 2005, there were students taking NACTEL courses at Pace University who began the program in the 1999-2000 time frame, and students taking EPCE-sponsored courses at Bismarck State College who began in 2001. It is interesting to note that some students in these programs have persisted in their course of study over long periods of time, with one or more breaks, but have not “dropped out” or left the program permanently.

Various factors contributed to working adult learners taking a break from their studies. Most of the respondents in this group told us this was their first break. However, about one-fourth, 23% in EPCE and 26% in Pace, had taken at least one previous break from their studies.

We asked respondents to select those factors that influenced their recent need to take a break, allowing them to select as many as applied. “Work-related events” was selected by over half (52%) of the EPCE/BSC respondents and 40% of the NACTEL/Pace respondents. Exactly half of the Pace/NACTEL respondents cited “family events or demands; this factor was also selected by 43% of the EPCE/BSC students. These primary factors were very similar for both groups.

- There were some differences, however. Twenty-two percent of the EPCE/BSC group cited “Completing the courses I wanted to complete,” compared to only 10% of the NACTEL/Pace respondents. This seemed to be directly related to the differences between the two industries that surfaced during the focused interviews (pages 18-19) that EPCE companies had “packaged” selected courses to support career ladders and emphasized completing these specific courses over degree completion.
- Sixteen percent of the NACTEL/Pace group indicated “Restrictions or problems with the employer’s tuition plan” compared to only 6% of those in EPCE/BSC.

Appendix I contains a comparison between the two schools in factors influencing the decision to take a break.

About goals and needs

- Only 2 individuals (both from NACTEL/Pace) indicated their needs had not been met. Unfortunately, no other data related to these two students were available in the survey responses.
- In this group of respondents “completing an Associate’s degree” was cited as the most important goal when they began their program by:
 - 28% of EPCE/ BSC respondents; and by
 - One-third (33%) of those from NACTEL/Pace.
- “Gaining skills and knowledge that might help one receive a promotion or a salary increase” was the choice of 25% of these EPCE respondents and 31% of NACTEL respondents. Within the EPCE group, another fourth indicated, “taking specific courses recommended by my employer.”
- These respondents were also asked about their most important goal today. For EPCE/BSC, 32% cited an Associate’s degree—a similar proportion to that reported above (most important goal when they first began their studies). However, the proportion of the NACTEL/Pace respondents increased to over half, 54%. Eight students who were taking a break from their studies at Pace cited “other” as their most important goal today, and half of those said their most important goal today was “to complete a Baccalaureate degree.”
- These respondents were taking a break from their studies at the time of the survey. It was, therefore, gratifying to learn that over half (59% of the EPCE/BSC respondents and 52 % of the NACTEL/Pace group) were either “very satisfied” or “satisfied” with their progress in goal attainment. On the other hand, one quarter of the EPCE respondents and 29% from NACTEL were either “dissatisfied” or “very dissatisfied,” which is likely related to the fact that they are taking a break from their studies.
- Seventy-two percent of the EPCE/BSC respondents and 68% of the NACTEL/Pace respondents reported that their program had met “all their needs,” with many of those saying their needs had been met “very well.”

About future plans

- Indicative of these respondents’ status (taking a break from their studies), just over half (51%) from EPCE/BSC told us they “will definitely” continue their education and another 29% “probably will.” For NACTEL/Pace respondents, 63% said they “definitely will” continue and 29% told us they “probably will.” These data reinforce the persistence intentions of these students, even though they are on a slower path to time-to-completion.

About what stood out

- Eighty-nine percent of the EPCE/BSC respondents who were taking a break and 78% of the NACTEL/Pace group joined with the other groups in the overwhelming endorsement of “the convenience of being able to study and do assignments at any time of the day or night” as something that stood out for them. Additionally:
 - the “program’s flexibility” stood out for two-thirds (67%) of the EPCE/BSC respondents and for 56% of those from NACTEL/Pace;
 - “knowledge gained,” 70% of EPCE/BSC and 50% of those from NACTEL/Pace;
 - “quality of the program,” 46% of EPCE/BSC and 42% of those from NACTEL/Pace;
 - “helpfulness of staff and faculty,” 35% of EPCE/BSC and 47% of those from NACTEL/Pace.

- **Reactions differed between the two groups with respect to “the link between this program and one’s work.”** Over half (57%) of the EPCE/BSC cited this as a stand-out compared with 30% of

NACTEL/Pace. Given that the curriculum content in both programs is closely aligned with technical job families, this difference may relate to the emphasis some EPCE coalition members placed on completing specific courses and certificates, making the connection between school and work more clearly defined for BSC/EPCE students.

See Appendix G for a summary of the responses made by those students taking a break in each program and Appendix I for comparison data about “what stands out.”

Part 4: Respondents Who Left the Program Permanently

44 Pace University students responding (9.9% of Pace respondents)

12 Bismarck State College students responding (8.1% of BSC respondents)

Overall, 9.5% of responding students reported that they had left their program of study permanently, with a similar proportion reporting in this category from each institution.

As in Part 3, students who were taking a break, the students who left either the EPCE or NACTEL programs permanently were a challenging group to identify. Again, this survey relied on students to place themselves in this category. It is not at all unusual for an adult to “stop out” from school for a year or more, only to return to continue his/her studies. As we learned from the previous group, this occurs for a variety of reasons.

Highlights from the responses from students who left the program permanently include:

- Almost three-fourths (70%) of the EPCE respondents who had left the program described themselves as either “very satisfied or “satisfied” with the progress they had made in attaining their most important goals; only 10% were “dissatisfied.” Under the circumstances, these were very interesting statistics and were explained, in part, when we looked at their original goals in the paragraphs below.
- Within the NACTEL group almost half (47%) were either “very satisfied” or “satisfied” with their progress in goal attainment, while 30% were either “dissatisfied” or “very dissatisfied.” Again, these data were partially explained in the subsequent examination of respondents’ goals.

Appendix I contains a comparison between the two schools in factors influencing the decision to leave the program permanently.

About goals and needs

- We asked respondents in each of the categories what their most important goal was upon entering their program. Over one-third (36%) of EPCE respondents who left the program cited “taking specific courses recommended by my employer.” On the other hand, “completing an associate’s degree” (33%) was the goal most frequently cited by NACTEL respondents.

This finding, with respect to EPCE/BSC participants, again correlates with data collected during the focused interviews with students and industry representatives in an earlier first phase of this study. Several representatives from the utilities industry stressed that either certificates or the completion of specific courses could be more useful to a company than a degree; and several EPCE members packaged specific BSC courses to prepare students for specific job titles within each company. In other words, success for some of the working adults in these programs was not degree completion, but rather completion of a certificate or group of courses defined by their employer as important and related to their job.

- As additional evidence to this conclusion, 50% of EPCE respondents cited “completing courses I wanted to complete” as a factor influencing their leaving the program. Only 11% of the NACTEL

respondents saw that as a factor. “Family events or demands” (27%); “restrictions or problems with the employer’s tuition plan” (23%); and “program-related issues” (20%) were more frequently cited factors for NACTEL respondents.

- Interestingly, at least half of both EPCE/BSC (50%) and NACTEL/Pace respondents (52%) told us the program “met their needs,” with some saying it had met their needs “very well.” However, in both programs, these percentages were lower than they were in any of the other three categories.
- Two (17%) of the EPCE respondents told us the program either “did not meet most of their needs,” or “did not meet any of their needs;” as did 7 (16%) of these NACTEL respondents. We examined these students’ reporting of factors that influenced their leaving the program. The two EPCE participants cited no factors that related to the program’s failure to meet their needs. Rather, they indicated factors such as “family events/demands;” “change in professional responsibility;” and “work-related events or demands.”
- Four of the NACTEL respondents who indicated their needs were “not met” cited “restrictions or problems with their employer’s tuition plan,” while 3 said “online learning was not a match.”

About Future Plans

- Half of the EPCE respondents who have left the program told us they “probably will” continue their education in the future. Forty-one percent of the NACTEL group said they “definitely will.”

About what stood out

- Like students in all other categories, significant majorities (67% of EPCE students and 66% of NACTEL students) cited “the convenience of being able to study and do assignments any time of the day or night,” as standing out. In addition,
- One-third (33%) of EPCE respondents who have left the program cited their “personal accomplishments” while 45% of these NACTEL respondents named the “program’s flexibility” as standing out. Twenty-five percent of EPCE respondents and 30 percent of NACTEL respondents were impressed with the “helpfulness of staff and faculty.”

See Appendix H for a summary of the responses made by those students who permanently left each program and Appendix I for comparison data about “what stands out.”

Data Source 4: Follow up interviews

More than 250 students provided their contact information as they responded to the Online Survey. We scheduled follow up phone calls with a subset of these students, using the interview as an opportunity to further clarify our analysis of each of the four groups, as well as probing for detail if a survey response didn’t make sense as it was written.

These interviews focused more heavily on the two groups that were most challenging to understand, students who were taking a break and students who left the program permanently. The following quotes provide samples of what we heard during those interviews.

BSC Current Students

“I’ve taken 5 courses that were recommended by my supervisor and I’m waiting for my supervisor to suggest other courses . . . I do enjoy the flexibility and the instructors have been a treat . . . they’re all helpful and responsive.”

“I’m an older guy . . . not just starting out in the industry. My career’s kind of behind me and a lot of what

I'm doing is just for myself. Distance learning to me means I can do things at a pace that fits my work schedule . . . sometimes some of the rigid schedules that come from instructors are a detriment to what distance learning means to me . . . I don't like making excuses—but losing points because I'm not available to complete an assignment is one of the only things I want to talk about . . . I travel for work. But my writing has improved, my thinking process has improved—regardless of the grade I get, the class has value. Classes get a little addictive—you look forward to them.”

Pace Current Students

“Every time you deal with someone at Pace, it's fantastic. It's more than fantastic. I enjoy online learning. It's perfect for me. What I've learned I put to the test on almost a daily basis. I graduate soon—then I'll be bored so I'll take more classes.”

BSC Students Taking a Break

“I'm interested in Electrical Energy Management & when they get ready to launch that 4 -year degree program, I'm interested in seeing that curriculum . . . I've really enjoyed my classes at BSC. It's more hands-on than it was at the University of Phoenix.”

“(My participation in) EPCE was not really for work. I have a 4-year degree in management and thought maybe a technical degree would not be a bad thing. I wanted to transfer some credits in English, etc., but couldn't. But it would be nice if they would take some of those credits—it would mean 2 or 3 classes I wouldn't have to take . . . there's lots going on in my life but I hope to take a class in the summer or fall. EPCE might look into expanding their curriculum---maybe troubleshooting and problem solving.”

Pace Students Taking a Break

“My company's tuition assistance office always takes a while to pay, and Pace sends me e-mails because they haven't been paid yet. The paperwork is complicated and I haven't always done it perfectly, but the tuition assistance office doesn't always let me know for a week or two and then I have to do it over. Tuition assistance pays me for a completed class, then I pay the school. I try to pay half of the tuition at the beginning of the term out of my own pocket but I don't always have the money. Everything is good besides that. I always recommend NACTEL to my friends at work.”

“In my last class there was a lot of disconnect. Insufficient feedback from instructor. The previous instructor was very responsive and was very feedback-oriented. I'm planning to return next semester, but our tuition assistance plan has changed and it's a brand new process—not as user friendly and not as financially friendly.”

BSC Students Who Left the Program Permanently

“The company had a class of us—all took one course together. I have a BS degree. The course we took was not a challenge. We were all hired off the street so the course was part of the new employee lineman training. Almost no one took additional courses.”

Pace Students Who Left the Program Permanently

“I ended up wanting a Bachelor's degree. I'm attending the University of Maryland and majoring in business with a minor in finance. I transferred 17 credits (from Pace.)“

“Took an algebra refresher course and the exams did not reflect anything about what we had studied. Most people complained about the instructor and were told we could take the course again with another instructor at no cost. But even though I had two good classes before this one, I was out of there. Now taking paralegal training and doing well.”

“The tuition assistance plan and the cost were why I left the program. Why does Pace not offer a discount for AT&T employees since AT&T is a member? The amount of paperwork, approvals, etc. for

the company's tuition assistance program is absolutely ridiculous. The program (NACTEL) was built for the telecom industry so these courses should be automatically approved. There is the same amount of paperwork each term. It is easier for me to stop at a local community college on the way home from work and pay for it, because of the time expended each term on AT&T's paperwork." [Note: Pace University tuition is significantly discounted for students from NACTEL partner organizations; this student was not aware of that fact.]

"(I left the program) because of time constraints, stuff like that. The program was good . . . very convenient . . . I just had too much on my plate."

Data Source 5: Data from Pace University and Bismarck State College

The partnership with Bismarck State College in Bismarck, North Dakota, and with Pace University, with several sites throughout the New York metropolitan area, was critical to the success of this study. Both schools have collaborated with industry coalitions to create a state-of-the-art online curriculum directly tied to technical job families - BSC for the electric power industry and Pace, for the telecommunications industry.

The NACTEL Executive Board and the EPCE coalition routinely track enrollment and demographic data and are confident of the quality and continued quality improvement in each program. Within the context of this study, there were many similarities between the two schools. And, equally interesting, there were also significant differences.

- Pace University is a private, non-profit institution, located on the east coast in the midst of a large metropolitan area. Bismarck State College is a public institution that is part of the North Dakota higher education system. Private universities frequently have access to more substantial resources than do public colleges that function within the higher education system of a smaller, more rural, state. Differences in resources obviously affect staffing patterns that, in turn, can affect student services.
- The NACTEL program at Pace University is housed in the School for Computer Science and Information Services. Because of its location within the University, NACTEL has benefited from the school's ability to develop a technical infrastructure to support data collection, registration, and student services.
- The EPCE program at BSC is associated with the National Energy Center of Excellence at Bismarck State College, an established center that has served the education and training needs of the energy industry since 1976. This location within BSC has given EPCE students critical grounding in the electric power industry.
- From 2000 - 2001, Pace University received a major FIPSE (Fund for the Improvement of Post Secondary Education) grant to develop state-of-the-art online services to support the NACTEL program. During this interview, the infrastructure resulting from this grant clearly emerged as a significant student support factor.

Pace University and Bismarck State College contributed to this study in several ways. First, staff members associated with NACTEL and EPCE were members of the research team throughout the study. Second, both schools provided data which was integrated throughout this report, but was highlighted in "Findings and Analysis: Students, enrollment patterns and degrees," on pages 11-15. Finally, both schools participated in a focused group interview organized to address the question asked at the beginning of this study, "What retention strategies are in place at each of the schools and with what outcomes?"

The focused group interview

The experience that students have within a college or university is an important factor in student

persistence. In recognition of this fact, a focused group interview that included staff from Pace University and Bismarck State College was structured to examine strategies at each step of the institutional process through which students progress, including:

- First contact
- Application
- Registration
- Student advising
- Ongoing enrollment
- Graduation

Success Factors

As a group, the schools identified a number of factors which we labeled “best practices” in industry-led online education. We believe these practices made significant contributions to student retention and student persistence to graduation. These practices include:

■ Student preparation

- At the beginning of each student’s school experience, the schools provide extensive information, both web and print based, about each program and about online learning, with the goal of assisting students in making informed decisions before entering the program.
- To create a higher likelihood of success, students are tested before enrolling in the technical math courses; students who need to brush up on math skills enrolled in a credit-bearing math review course.
- Students are required to take some sort of online orientation course before entering academic courses.

■ Student communication

- Each school has student service staff dedicated to student communications; students “meet” this person early on and rely on this person throughout their academic career at the school.
- Electronic surveys embedded throughout the term (not simply at the end of a term) are an important communication and intervention tool.
- Not only are there differences between schools, but there were also differences between the industries, and the schools have customized communications with students to fit the industry culture and expectations. Web-based learning and communication is much more the norm in the telecommunications industry than in the electric power industry. Web-based communications are an important tool in both programs, but are used more with NACTEL students at Pace University than EPCE students at Bismarck State College; BSC relies more heavily on print communications than does Pace University, again aligning with the norm in the electric power industry.
- Classes in each program remain small (typically 20 students, no more than 25), allowing close communications between faculty and students.

■ Faculty

- Both Pace University and Bismarck State College select faculty members for their industry interest and experience, as well as their interest in teaching adults in an online environment.
- There is required training for online faculty; this includes mentoring and required participation in an ongoing online faculty team.
- Interventions are in place if problems arose during a course, but they are used judiciously.

■ **Data collection:** student demographic, enrollment, and completion data are monitored to determine if there are particularly challenging courses or stages that may be causing problems for groups of students.

■ **“Rollover” category:** One of the schools created a formal category to allow adult students with unforeseen emergencies (natural disasters that affect work, home or health emergencies, for example) to leave a course and enroll in the same course the next time it is offered without penalty.

- **Tuition assistance procedures.** A successful and efficient employer-sponsored tuition assistance process is a critical success factor in both programs. To facilitate the process, each school:
 - Has a staff member designated to serve as a liaison for the student and their tuition assistance provider / employer.
 - Routinely asks permission from the student to work directly with the tuition assistance provider.
- **Placement assistance.** One of the schools developed and continues to grow a placement service, serving as a link between students and the industry.

Conclusions

- Both Bismarck State College and Pace University reported numerous components of an institutional retention system in place to support students at each step of the student's journey.
- Both schools continually monitor their programs and procedures, examining what new or different methodologies they might try.
- Both institutions invite feedback from students at regularly scheduled points and work to respond to that feedback to any extent that is possible.
- Some exchange of information between BSC and Pace did take place during this focus group interview; we have encouraged the two staffs to continue to ask each other questions and provide help for one another whenever possible.

Obviously, many factors contribute to a student's decision to either remain with or leave one of these programs, and some of these factors are not within the school's control. Even with the highest quality student support systems in place, not every school will meet the needs of every student. For example, a few students, 8 out of 56, indicated that one of the factors that caused them to leave the program permanently was the fact that online learning was not a match for them. That said, few incidences where school issues caused students to leave these programs surfaced at any point throughout this study.

The focus group interview guide and data summary can be found in Appendix J.

Data Source 6: Bureau of Labor Statistics

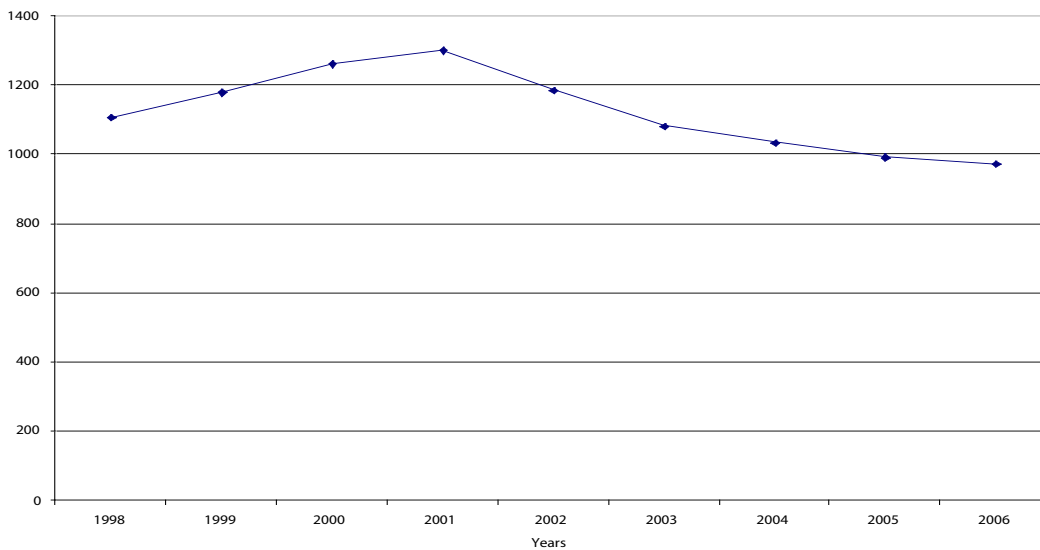
Because the NACTEL and EPCE programs are firmly rooted in specific industries, the research team hypothesized early in the study that changes in each of the two industries may have had an impact on the persistence and retention of students enrolled in Pace University and Bismarck State College. According to the Bureau of Labor Statistics, both the telecommunications and the electric power industry experienced significant downsizing during the past several years. When NACTEL began in 1999, the telecommunications industry employed 1,179,700 people; the industry reached a peak employment in 2001 of 1,302,100 employees. At the close of this study, in 2006, the industry employed 992,000, a drop of 23.8% from the peak year.

There was a similar pattern in the electric power industry. When EPCE began in 2001, 276,700 people were employed in electric power generation, according to the Bureau of Labor Statistics. In 2005, the number was 238,600, a drop of 13.7%.

In this study, indications of the impact of this downsizing would likely have shown up in the online survey responses of those students who left the program permanently, and we saw no reference to this effect. However, it remains a likely assumption that a block of students who did, indeed, leave these programs were no longer employed in their industry, and this fact affected the number of students who eventually would attain the degree. It is also likely that a high percentage of the invalid emails that surfaced in the distribution of the online survey were for those students who had left the industry.

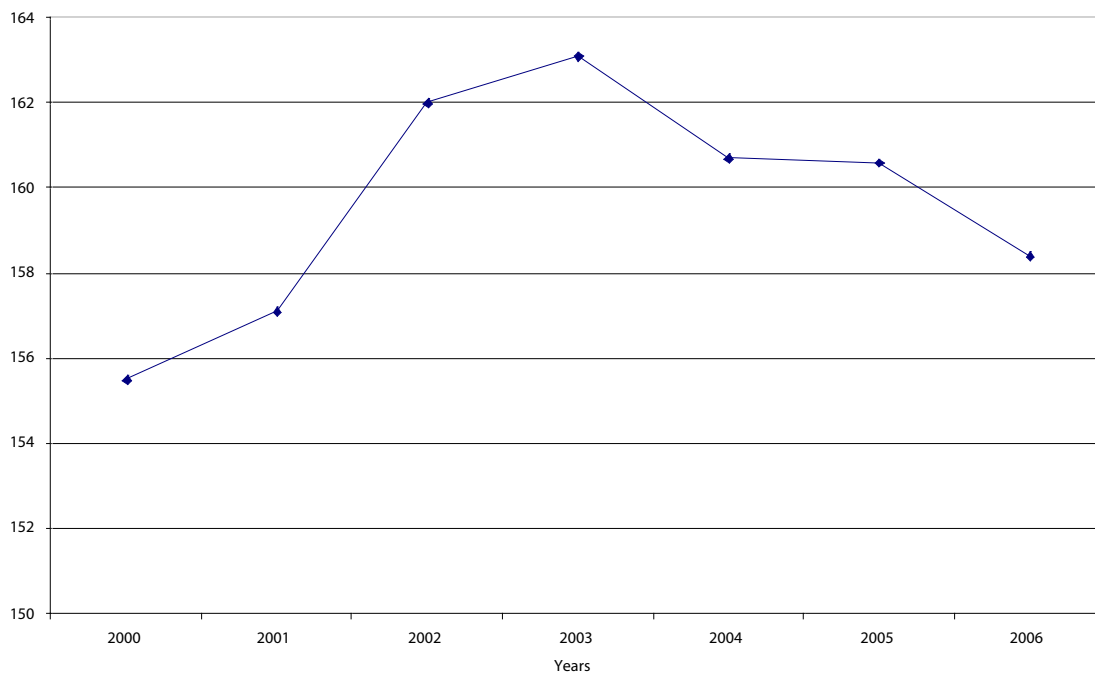
Bureau of Labor Statistics data tracking the employment in each industry are summarized in the following graphs and complete BLS employment tracking is included in Appendix K.

Employment in Telecom Sector



From the Bureau of Labor Statistics (BLS)
<http://data.bls.gov/cgi-bin/dsrv>
 Series ID: CEU50551700001
 Super Sector: Information
 Industry: Telecommunications

Employment in Electric Power Generation



From the Bureau of Labor Statistics (BLS)
<http://data.bls.gov/cgi-bin/dsrv>
Series ID : CEU4422111001
NAICS Code : 22111
Super Sector: Utilities
Industry: Electric Power generation

Conclusions and recommendations

As this project began, the research team knew that studying enrollment patterns and persistence in this population of learners was a complex question. The collective experience of this team was extensive, however, and based on that experience, much of what we learned in this exploratory research did not come as a surprise.

Student enrollment patterns and the relationship of these patterns toward degree completion were fairly common across both programs and were familiar to us prior to the study. As different as the two schools are in many respects, they are remarkably similar in their ability to work for and with an industry sector to create an innovative program that serves both the industry and students well. The differences between the two programs are primarily linked to the differences between the two industries. Our conclusions and recommendations were summarized in this manner:

About students

1. The flexibility of the online learning format was the most important aspect of the NACTEL and EPCE programs for all of the working adult students in all categories in this study.
2. For NACTEL and EPCE students at Pace University and Bismarck State College, industry sponsorship of these programs and the practical application of the curricula to daily work, were extremely important and added significant credibility and incentive.
3. Degrees were important to students; in particular, completing a bachelor's degree was a lifetime dream for many adults.
4. Completing the degree may not have been the goal upon entering a program, but often became the goal as students realized they could succeed.
5. As with all working adult students, common barriers to persistence included work requirements, family and personal demands, time management, and financial support in the form of employer-sponsored tuition assistance.

Recommendations

- Schools should assume that adults want to and eventually will complete the degree and should have systems in place to support this process.
- Faculty, and administrators, working with business and labor representatives, should collaborate to build "education ladders," with stepping-stone achievement points along the way, to create transportable, recognizable credentials for adult learners who either don't wish to complete a degree or are unable to do so.
- Faculty, administrators, and corporate and labor stakeholders should encourage credit-bearing coursework and prior learning assessment, as they provide adult learners with more transportable options.
- In the midst of the current research into the effectiveness of online, instructor-led education, colleges and business and labor stakeholders should recognize that this format provides access to degrees for many students who would not otherwise be able to attend a college or university.
- As a strategy in removing barriers to learning, industry leaders should pursue quality online,

instructor-led learning options for their members and employees.

About the industries

The difference between the telecommunications industry and the electric power industry surfaced as an important factor related to student persistence and degree completion in these two programs. Specifically:

1. Degrees have mixed importance to employers, depending on job titles, and industry; overall the associate's degree was more important to the NACTEL partners, both companies and unions, than for the EPCE coalition members.
2. In a finding that was industry-dependent: A discrete skill set related to courses or subsets of degrees (problem solving, communication, preparation for specific technical job titles) was more important to employers in the electric power industry than degrees.

These messages, given both directly and indirectly to an incumbent workforce, were part of the student decision-making framework in NACTEL and EPCE programs.

For both industries:

3. Joint curriculum development was a critical aspect of their sponsorship of these programs.
4. Linking NACTEL and EPCE sponsored curricula to technical job families was a strategic and intentional decision on the part of both industries. The electric power industry went a step further by selecting and packaging EPCE courses offered by Bismarck State College as preparation for specific job titles and promoting this to the incumbent workforce.

Recommendations

- As college, corporate, and labor leadership build the “education ladders” mentioned above, they should also clearly link education ladders to career ladders and job families as a way to add even more value for students and employers.
- A school's ability to work effectively with an industry sector is critical to the success of a program such as NACTEL or EPCE, and not all schools are “created equal” in this regard. When an industry selects an academic partner, the industry should pay careful attention to the college's demonstrated ability to respond quickly, appropriately, and in a quality manner.

About “success”

“Success” has multiple definitions, not all of which are tied to degree completion.

1. The reported goal for many students was degree completion, both the associate's and the bachelor's degree.
2. For adult learners, “success in school breeds more success.” Even if degree completion was not the goal when a person started school, it often became the goal.
3. Students persist toward degree completion, even if it takes many, many years - evidenced by both NACTEL and EPCE students still taking courses since program's inception.
4. For those adults who entered these programs to complete a specific set of courses, their “success” (or lack of it) was tied to their purposes upon entry.
5. For industry and labor representatives, “success” was also tied to a number of “non-degree” factors, including preparation for specific job families, alignment of the curricula to internal training, support of strategic industry direction, and continued employment within an industry sector.

Recommendations

- Everyone associated with working adult students should abandon the old labels of “two-year” and “four-year” degrees. Adults simply take longer (in some cases much longer) to complete degrees, and the old labels imply that these students are “not successful.”
- It is a smart, “adult” decision to utilize a program such as NACTEL and EPCE for a host of reasons that are not related to a degree – to brush up on skills, to prepare for a new job, to augment a previous degree, for example. As each stakeholder assesses the value of these programs, the definition of “success” should acknowledge this fact.
- Part of the innovation and genius of NACTEL and EPCE is that they are “wins” for a complex array of stakeholders, including employers, unions, schools, and students. “Success” metrics should be developed and utilized from each of these points of view.

About tuition assistance

The discussion about tuition assistance related to this study is a complex one. Tuition assistance programs among NACTEL and EPCE employers ranged from fully-funded, prepaid unlimited tuition toward degree completion, to much more limited reimbursement plans, to reimbursement plans prorated to student grades, to no employer-sponsored tuition assistance at all. Therefore, it was not surprising that tuition assistance was not mentioned by all students; but for those students who were using it to attend school, it was central to their educational experience, both for better or for worse. These conclusions emerged from those students who did have employer-sponsored tuition assistance.

1. Tuition assistance is a significant factor in student persistence, both in supporting students or causing them to leave school permanently.
2. Students view an efficient tuition assistance process as a message of support for education from an employer. A poorly managed or cumbersome tuition assistance process sends a mixed message, at best, and can cause students to leave a program, at worst.
3. Some employers in both industries intentionally and strategically tie tuition assistance to their support of NACTEL and EPCE.
4. The fact that both colleges employ a staff person dedicated as a liaison to facilitate the student/employee tuition assistance process is a critical success factor.

Recommendations

- Tuition assistance provides an ideal opportunity to support the strategic direction of an industry, the workforce preparation needs of specific companies, and the individual goals adult learners; employers and labor leaders should support tuition assistance for their employees and members and should guarantee that is administered in a way that removes barriers for employee-students.
- If an employer offers tuition assistance, the policies and messages to employees should be clear, fair, and accessible.

Questions for further study

In planning this study, the research team discussed the parameters of an “exploratory” study, recognizing that there would be tantalizing questions raised that would be beyond the scope of what we would learn from this project. This has proven to be true. Some of the questions that we believe deserve more research include:

- In light of the limited resources available for this study, the research team decided that a literature

search and review of comparable studies was beyond the scope of this project. However, there are definite connections between the experiences of NACTEL/EPCE students and those of the experiences with the general community college population of working adult students. For the most part, NACTEL and EPCE students represent a sub-set of all working adults attending community colleges. For the most part, they are incumbent technical workers who are firmly embedded in an industry sector. Some of the intriguing questions yet to be answered are:

- How is the experience of these students in a technical, industry-specific program different from the experiences of more generalized working adult students?
 - Does an industry-specific technical degree entice a NACTEL/EPCE student to start and complete a degree in ways that a more general community college degree does not?
- Early indications from Pace University are that bachelor's degree students are different from those students in the associate's degree program. Overall, BS students take a heavier course load; they seem to be more savvy and confident about online learning in general, and they seem to take fewer breaks. These are very interesting observations that definitely deserve more study.
 - Findings from this study included differences related to the two different industry sectors. As we began to discuss what we learned, we realized that we were just scratching the surface of the intersection between an industry-led education program and higher education. Some of the unanswered questions include:
 - What impact does the industry - its culture, needs and norms - have on the program, the students, and the school?
 - What is the value of a program such as NACTEL or EPCE to an industry?
 - What is the value to the school?

Conclusion

When NACTEL and EPCE began in 1999 and 2001, online learning was just coming into its own. The history of both programs represents a kind of “perfect storm,” a time in which a number of disparate factors aligned in such a way that could not have happened earlier and is not likely to happen again.

Internet-based online learning was not new in 1999, but it was just on the cusp of being widely adopted by colleges and universities. Pace University and Bismarck State College, though very different from each other, were ideally positioned by 1999 and 2001 to respond to the needs of an industry sector; they had each worked within these two industries for many years and had, on their own, begun to develop customized online learning programs. At that time, both the telecommunications industry and the electric power industry had become starkly aware of critical workforce shortages among technician job titles, and corporate training was quickly migrating to online learning formats. During these years the Alfred P. Sloan Foundation decided to support the development of online education in colleges and universities to increase capacity and student access. As a final element of this “perfect storm,” CAEL, relying on its connections and expertise with working adults, corporate education, and tuition assistance management, as well its ability to convene diverse stakeholders, recognized the potential and brought the original industry and labor groups to build the innovative solutions that eventually became NACTEL and EPCE. Today, the results are two distinct, self-sustaining programs that remain viable by continuing to change and expand to meet the needs of the industries which they serve.

Throughout the history of NACTEL and EPCE, each has been recognized for innovation. As far back as the fall of 1999, when the Department of Education, Fund for the Improvement of Post Secondary Education (FIPSE) awarded Pace University and CAEL a federal grant on behalf of NACTEL, one of the reviewers of the original grant proposal had this to say:

“This innovative partnership can serve as a model of collaboration, leveraging resources among unlikely

partners who have traditionally been competitors and adversaries.”

And, as recently as August 2007, Blake Osner, Manager of Employee and Leadership Development at JEA, and an EPCE Coalition member, had this to say:

“We see enormous value in EPCE by being able to offer online education that is both utility specific and meets the needs of employees. The EPCE coalition itself is a cross section of the entire industry and a resource that helps provide a great creative solution to any workforce development issue we might have.”

This study of student persistence has provided all of us – including the EPCE and NACTEL partners, Pace University and Bismarck State College, and CAEL – the opportunity to learn more about these programs and their students, and as a result, to better serve both the students and the industries. In addition, we believe the study makes a contribution to better understanding all working adult learners.

Appendix A

Brief Biography

Ruth Chapman

June 30, 2007

Ruth Chapman has had more than 30 years’ experience in applied social research. Her areas of expertise include:

- survey instrument design, administration, and analysis;
- quantitative and qualitative program evaluation;
- focus group design, facilitation, and analysis;
- one-on-one focused interviewing; and
- social impact assessment.

Ms. Chapman has a Master’s of Arts degree in Sociology, with a focus on applied research, from the University of Colorado. She worked for CAEL from 1990 until her retirement in 2000. During that time, she developed a particular expertise and interest in adult learners, as evidenced in a portfolio of studies and program evaluations. Since 2000, Ms. Chapman has continued to serve as a consultant to CAEL.

Appendix B

Interview Guide

Preliminary Interviews with students from Bismarck State College and Pace University

The following email was sent to selected current students and recent associate’s degree graduates from Pace University and Bismarck State College:

+++++

Subject: NACTEL/EPCE research needs your help!

The Alfred P. Sloan Foundation is funding a groundbreaking study of adult learners who have taken or are currently taking courses in (Pace University’s Online NACTEL program/Bismarck State College’s Online EPCE program.) The first step of this study is a telephone interview with several students who are taking or have taken courses through NACTEL/EPCE from Pace University / Bismarck State College.

We are asking for your time in a 20-30 minute phone conversation.

The purpose of this interview is to:

- learn about your particular experiences as a NACTEL/EPCE participant at Pace University / Bismarck State College;
- understand more about the various goals of participants and how those goals may change over time;
- understand the types of obstacles participants may encounter that interfere with their learning experience
- ask your help in creating a successful online survey

This kind of research is new. Adult learners in industry-specific online courses have never been asked about their experiences before, and you are critical to the success of this research project.

Your responses will be confidential. All results of this study will be reported in aggregate form and there is no way that anyone will be able to connect your responses to you.

By replying to this email and providing your phone number you are:

1. Agreeing to be interviewed by phone in Phase 1 of this study.
2. Granting Pace University / Bismarck State College permission to forward your name to the external researcher conducting this study.

If you agree, please provide:

- The telephone number where you would like to be called; and
- The dates and times during the next (?) weeks that would be most convenient for this interview.

We will then contact you via e-mail with a suggested date and time.

We look forward to hearing from you

Signed....

+++++

Interview Outline: NACTEL/EPCE students

1. When you look back to the time when you first enrolled in NACTEL/EPCE, can you recall what motivated you to enroll in the program? (Probe as needed)
2. Have your goals changed over time? If so, how have they changed? What were your goals then and how are they different now?
3. Do you feel satisfied with the progress that you've made toward achieving your goals? (Explain, tell me more, etc.)
4. What are some of the factors that have affected your progress? Have there been situations or events that have been helpful? (Probes: company tuition plans and/or other types of financing; mentors; opportunities to meet with co-workers who are also participating; supervisory encouragement; online advisors, other?)
5. On the other hand, have there been situations, issues or events that have interfered with your progress? (Probes: rules of company tuition plans and/or other type of financing; work-related issues; curriculum-related issues such as course difficulty; family or health issues; other?)
6. Do you think that education for employees is important to your employer? What kinds of things make you think that it (is/isn't) important? (Probe as needed.)
7. How about completing a degree? Do you think it's important to your employer for you or other employees to complete degrees? And what makes you think that? In what ways does your employer indicate that a degree is/isn't important?
8. How about you personally. Do you think completing a degree is important? (Probes: why is it important? Why isn't it important? Is it more important for some people than for others?)

9. If you were in charge of this program, what would you do to make it better meet the needs of working adult learners?
10. As we've mentioned, one phase of this study will be an online survey to all employees who are currently or have ever participated in NACTEL/EPCE. Sometimes it's difficult to motivate individuals to complete and return an online survey. Do you have any suggestions for us with respect to this? Why do you think so many people refuse to complete an online questionnaire? What can we do to overcome these problems and make that phase of our research more successful?
11. And finally...What stands out for you about your total experience with NACTEL/EPCE?

Appendix C Interview Guide

Focused interviews with industry and labor representatives

Note: Blue comments are interviewer probes and were not be shared with the industry reps being interviewed. Red comments were added after the first interviews when it became apparent that certificates may be important or more important than degrees to a given industry.

1. Can you talk briefly, and in a general way, about how you think education and credentials, such as certificates or degrees, for employees are viewed in your company?
2. If you were hiring a new employee for a technical specialty, would you prefer someone who holds a degree?
(If yes) A degree, in general, or in that particular or related specialty?
3. If you were choosing between an applicant with:
Σ substantial experience and some academic credit in a field related to the position in question, or
Σ an applicant with less experience but a degree (either Associate's or Baccalaureate) in a field related to that position, which would you be more likely to choose?
Probe for "why" following either response.
4. Are you satisfied with the number of employees who have completed degrees through the NACTEL/EPCE program?
Probe for related thoughts with any response.
5. If certificate or degree completion through NACTEL/EPCE is valued by your company, how do you communicate that information to the employees?
 - Electronic communications about the program
 - Written materials
 - Discussions by someone in your organization with employees about the program
 - Ongoing discussions by someone in your organization with participating employees about their progress in the program (e.g., "checking in" conversations)
 - User-friendly financial support for these education programs
 - Rewards when an employee completes the program (promotions; salary increases; congratulatory letters; announcements in newsletters; other)
 - A "career ladder" with clear links between education and reaching the next step on the ladder
6. If certificate or degree completion is a priority, do you have any thoughts about how your company might help to increase completions through NACTEL/EPCE?

7. Do you have any thoughts about how NACTEL/EPCE might be more helpful to employees seeking certificates or degrees?

8. Anything else?

NACTEL

PERSISTENCE STUDY:

FOCUSED INTERVIEW WITH LABOR REPRESENTATIVES

1. Can you speak, in a general way, about how you think education and degrees are viewed by your members (local/district/national)?

2. Do NACTEL degrees provide any advantage for your members in the technician job titles? If yes, what are those advantages?

3. How would a occupational employee / technician be viewed in these two scenarios:

- Having substantial experience and some academic credit in a field related to the position in question, or

- Having less experience but a degree (either Associate's or Baccalaureate) in a field related to that position

- Would one be preferred over the other? (Probe for "why")

4. Are you satisfied with the number of your members who have completed degrees through the Pace University NACTEL program?

i. (Probe for related thoughts with any response.)

5. If degree completion through Pace University is valued, how do your members know this? Through:

- Electronic communications about the program?

- Written materials?

- Discussions and/or presentations by someone in your organization with members about the program?

- Ongoing discussions by someone in your organization with participating members about their progress in the program (e. g., "checking in" conversations)?

- Inclusion of tuition assistance in labor agreements?

- Recognition when a member completes the program (congratulatory letters; announcements in newsletters; other)?

- Support or communication about a "career ladder" with clear links between education and reaching the next step on the ladder?

6. If degree completion is a priority, do you have any thoughts about how your organization might help to increase degree completions through Pace University?

7. Do you have any thoughts about how NACTEL might be more helpful to members seeking degrees?

8. Anything else you'd like to discuss?

Appendix D

Summary of Findings

Data Sources 1 and 2

Focused interviews with students and industry/labor representatives

During August and September 2006 CAEL conducted focused interviews with two groups:

1. 13 industry representatives in both NACTEL and EPCE, and
2. 12 students from Pace University and Bismarck State College

KEY FINDINGS: About the importance of education and credentials

1. There is general agreement among the industry representatives in both the telecommunications and electric power industries that some level of formal education is useful and is growing in importance; sample quotes included:

- “Education is important now and will be more critical in the future.”
- “We can always train someone to do a job. There is a wide spectrum of jobs within a specialty, but it helps to have someone with theoretical knowledge going in.”

2. A degree is more likely to be required in management and administrative positions than it is for those employees who work in the field. Degrees are also more likely to be required for new hires. Opinions on the importance for current technical workers vary widely.

- “For management people, a degree is a pre-requisite. Certainly new hires are expected to at least be working on it. For technical people some level of formal education is not a pre-requisite but is viewed as a plus.”
- “Certificates and degrees are not as important for linemen, but are for office personnel . . . As it would apply to someone in the field, experience always rules.”
- “We see new hires with lots of knowledge but no field experience. They can’t apply the knowledge.”
- “Degrees are just not a requirement for technician jobs. One has to have technical knowledge but not a degree . . . but the field is changing and our members have to be competitive . . . more and more the companies will hire off the street and those hires will have degrees. They’ll need computer skills and programming knowledge.”
- “Given the way telecommunications technology is advancing, our company sees employees with a fuller, focused education as a way to differentiate ourselves from our competition. We emphasize not only wanting non-management employees who work directly with customers to be well-trained but to be educated. That gives us a competitive advantage.”
- “Certificate or degree completion through EPCE is not valued at all . . . We have a nationally accredited 4-year apprenticeship program (non-union) with a classroom component. One can’t get hands on experience online. But for someone who has already done field work but has no formal training and is already in a foreman’s position, EPCE could serve the purpose.”

3. In some cases, either taking specific courses or completing a particular certificate is considered more useful than the Associate’s degree.

- “I personally think certificates could be of more value—a lot of our union members don’t want to take courses that have no impact on their career development. For example, taking 6 courses related to broadband might get you to the point of being more valuable to your employer.”
- “We are very satisfied with the certification employees receive when they complete 7 courses from BSC that are needed for a new position we have created and are trying to grow.”
- “We don’t have anyone who has completed the program but we are satisfied with the numbers who have completed specific classes. Specific classes have been useful.” (EPCE)
- “I really don’t care about our employees completing a degree. I care about their taking 12 courses that

are technically related . . . I care about technical expertise. Whatever the number of courses that it takes to get to the technical level the company needs—that’s what I want employees to do. If they choose to go on from there and finish, that’s great.” (EPCE)

- “EPCE may need to change its marketing tactics to focus more on certificates.”

Finally, one EPCE coalition representative expressed interest in seeing if employees will continue their education to complete their degrees once they have completed the initial certificate.

4. All 12 students interviewed emphasized how important this opportunity to continue their education has been to them. Not all began with the intention of completing an Associate’s degree, but the degree became the goal after taking some classes.

- “I was too young when I was young! I didn’t understand the value (of a college education) and went straight to work after high school. I’m a single mom and have had a burning desire to go to college. 27 years after graduating high school I started with NACTEL. Then my mom had a stroke. I’ve been plugging away for 5 years but now I’m only 3 courses away from completing my Associate’s degree. Now I want a Baccalaureate degree!”

- “I wanted to get a degree, but it was practically impossible to find time to go to classes with a full-time job and a family. Then co-workers told me about Pace and NACTEL. I began about 5 or 6 years ago. I’ve had some health problems—major surgeries that slowed me down a little. But as soon as I recovered, I just started back up again . . .”

- “My original goals were to get the Associate’s degree through EPCE, to become more knowledgeable in my field and become a better employee. I’ve finished the Associate’s degree, now I want to complete a B. S. I want to set an example for my kids . . .”

- “When I began I didn’t really have an idea of what EPCE was about. A manager asked some of us to enroll in this pilot program . . . so I didn’t have a goal in the beginning. After awhile I just got more interested . . . then I wanted to finish the Associate’s . . . I could have stopped any time but I just kept going . . . it took me 4 years. Sometimes I had to skip a term to give my brain a rest.”

Key Findings: About promoting the programs and career ladders

5. Companies in both programs promote the programs in various ways. Some promote more actively than others. However, few have defined a “career ladder” in which a clear link exists between enhanced education and a promotion or salary increase.

- “Although we value the benefits of education, we don’t have a career ladder that is linked to it. A degree does not entitle one to a promotion.”

- “Links between education and advancement are not always clear, but it mostly happens through apprenticeships.”

- “A better strategy for promoting the program would be to make NACTEL a clear link on a career ladder.”

- “There is no rule that one who completes a degree can expect a promotion or salary increase. It does make one more marketable . . . A good proportion of our work force is unionized . . . One thing to deal with relates to union contracts . . . At our next bargaining we have to present the idea of a connection between education and training and furthering one’s self in the company.”

6. The concept of getting ahead through education causes some tensions in a work force where many have worked their way up through the ranks over the years.

- “The employees know that certificate and degree completions are valued by the company but it’s not always a positive message. Those with experience with the company and technical knowledge are now being passed over for advancement by someone with a degree. There’s a ‘rub’ between technical knowledge gained through experience and that gained from a college education.”

- “Career ladders are perceived differently by the young and the old. New hires want to be where they want to be now. They don’t want to start at the bottom of the ladder. There is tension between them and older employees who worked their way up via field experience.”

7. Students did express some thoughts about the lack of a link between education and advancement.

- “The company paid for my schooling but it didn’t affect my ability to get a better job. I applied for a new job within the company but they gave it to someone who has no degree. The supervisor who interviewed me has no education but has been here a long time. I’ll try again but it makes me wonder if getting my degree was a waste of time.”
- “I don’t know if education for employees is important to the company. I won’t get a raise or anything like that.”
- “No, I don’t think it’s important to the company if people complete degrees. In all the jobs I’ve had with this company, they’ve never promoted that kind of attitude . . . Nothing occurs when someone completes a degree.”

8. However, students see other indicators that education is important to their employers.

- “Education for employees must be important. They belong to NACTEL. They have a tuition plan so they’re investing in my education. I get a lot of e-mails promoting the program.”
- “Yes, I do think it’s important to them. They have programs. They support the Learning Advocates, who promote the various learning opportunities. They pay for all kinds of courses.”
- “They post graduations on the employees’ web site and in the employee paper. When I graduated from BSC, I got a hand-written note congratulating me from one of the officers of the company. That meant a lot to me.”

Key Findings: About tuition plans

9. Tuition plans obviously vary from corporation to corporation within both programs. Rapid changes in the telecommunications industry have had an effect on some of these plans.

- “Our company has the best tuition assistance plan. It’s very user-friendly. The NACTEL program is fully covered at both the Associate’s and Baccalaureate levels. This is not to say it might not change in the future.”
- “We’ve been so busy merging and changing that we don’t send a consistent message to the employee body. Different tuition programs just confuse the employees.” (Telecommunications corporation)
- “Our tuition plan pays up front. Employees must submit grades and anyone who earns a “C” or better gets tuition paid fully for the next term.” (Electric power Company)
- “Our financial support is pretty good but BSC’s paperwork has become a little complicated since they went with PeopleSoft. Employees find it frustrating.”

10. Many students cited the importance of the company’s tuition plan in their lives, but in some cases the plan caused them to slow down in their pursuit of completing the degree.

- “The company’s tuition plan pays up front.”
- “My company’s tuition plan is great. No limits and it pays for everything except books.”
- “The company’s plan reimburses me for 80% of my costs.”
- “The company’s plan was great.”
- “I ‘capped up’ pretty fast.”
- “The cap for managers in the company’s plan only allows me to take 1 class a semester. I’m locked in at the lower rate because I began so long ago.”

Key Findings: How the programs are viewed

11. Coalition members and students praised both programs and their staffs

- “Pace and NACTEL go out of their way . . . Now it’s up to our company to push it more aggressively . . .

We need people who can think on their feet and adapt quickly. Pace/NACTEL enables them to do that.”

- “I’m very satisfied with Pace and I find the NACTEL board to be open and progressive.”
- “It’s very refreshing to see these competitive companies and 2 unions working together. That’s the unspoken benefit of NACTEL.
- “We’ve had great cooperation from EPCE and Bismarck State. BSC and EPCE have been fantastic.”
- “EPCE is doing the best they can do to meet our company’s current needs. Can’t think of any other group or track that BSC could serve the way they’re serving internal employees who want to enter the engineering track.”

From students:

- “BSC has made the program very friendly to working adults. It’s worked out fine for me. No suggestions.”
- “I don’t know if you could make NACTEL any better. Somebody’s doing a good job!”
- “The flexibility at BSC is really key. Online learning is the only way for me.”
- “I don’t feel invisible. I’ve been in other programs—at a university, a community college . . . no one even noticed when I dropped out. Pace acts as though they care . . . that’s what motivates me to stick with it.”

Key Findings: How can the programs meet needs even better

12. There were some suggestions. First, from members of the coalitions:

- “Bismarck State should seek accreditation from the Accreditation Board for Engineering and Technology (ABET). Not sure if they give accreditation for Associate’s degree programs but if they do and BSC could get it, it would be awesome.”
- “The TV Public Power Association has retail distributors. Need help from EPCE to get the word out.”
- “Can BSC provide more live online labs? Virtual labs online with someone online with you. Some schools and medical facilities are doing that now, but it’s an investment of dollars. We also need certification that someone can actually perform the required tasks. Degree with certification.”
- “We need external programs for external candidates who wish to become line specialists. Don’t know where EPCE would fit in there.”
- “BSC’s discussion boards don’t work so well for our employees, many of whom are somewhat averse to distance learning. We’re trying to get across the idea that distance learning can mean multiple media. We are using webinars within the company to link numbers of people together in real time.”
- “BSC could provide more help for those who are struggling technically; increase the flexibility for the student to complete courses; create more opportunities for starting and ending classes; have a tutoring program—online? Face-to-face? Find more people to help besides the instructors.”
- “Have asked BSC to look at possibilities of volume discounts but I’m not even sure if we can generate the numbers.”
- “NACTEL is making good progress but should probably be more aggressive in looking at kinds of skill sets that are being required as the industry evolves. Wireless, for example. The program is tied to the traditional telecommunications business. Do a better job of market forecasting so the curriculum keeps up.”

13. From students we heard the following:

- “A lot of the testing (BSC) allowed people to cheat. Tests were timed but people could still open a book. A couple of my tests were proctored. Proctors would be better.”
- “BSC instructors must be sure that test questions pertain to what was assigned.”
- “Maybe BSC could give you a little more time to complete a class. 4-6 weeks is hard for a shift worker in the field.”
- “Maybe Pace could have small group sessions with people who live or work near each other, together with a tutor. Discussion boards work sometimes when one is having difficulty but not all the time. I find myself helping a lot of people. Many students need a combination of face-to-face and online.”

- “NACTEL/Pace could do more advertising that it’s not as difficult to discipline oneself for a self-paced online program. Help people learn to carve out the time.”
- “Sometimes it’s hard to find someone at Pace to talk to. I had to be really persistent once when I needed to talk to someone.”
- “I don’t feel connected to the University and I don’t know how they can solve that. I’ll never feel like an alum. Perhaps there could be more live class conference calls or chat rooms. This is difficult because of all the different schedules. I don’t understand why Pace charges more for the Baccalaureate courses. In conjunction with the fact that I’m now facing a cap on my tuition reimbursement, it will limit the number of courses I can take in a year. Pace suggested that I look for financial aid but I don’t think that’s possible.”

We asked students what stands out for them as they think about their entire experience as online learners in the Pace/NACTEL or BSC/EPCE programs.

- “The politeness and responsiveness of Bismarck State’s instructors. The whole staff was very helpful. The courses were very good and interesting. It was a good experience.”
- “At first I wasn’t very interested in taking the general education classes but I took the classes and labs and wrote the papers and began to appreciate all the different opportunities and career paths that are out there. It opened my eyes to a whole new world. Being in the electricity field for 15 years I thought I had a handle on everything but the courses filled in the holes. I realized I don’t know everything.”
- “I love taking stuff that’s tailored to what I’m doing and BSC offers that. The variety. The flexibility of online learning.”
- “Everyone I dealt with at BSC –the instructors, the administration, the bookstore—always had time to explain, always returned my calls. Great experience. Enjoyed it immensely and try to promote it.”
- “Overall, I absolutely love Pace and NACTEL. I love the ability to study any time I want; anywhere. I’m surprised how much I’ve bonded with other students through the discussion boards. I develop relationships with others because most instructors have us introduce ourselves on the boards. Some include photos. When you’re in a classroom, you just come once a week. I get to know people better this way. I love NACTEL—great school, great program!”
- “It would be easy to quit with my life—a demanding job and young kids. But whenever I’ve stopped out, I get so many “Where are you?” messages from the Pace staff. And I can do my work at 1 a.m. if I want to.”
- “Everything stands out! The fact that it’s an accredited degree from a highly rated university. It’s flexible. The Pace staff and faculty are great. They all listen—no one gets defensive, they’re open to suggestions. It’s totally a highlight of my life.”
- “Education. The Pace instructors and administrators. They work with you, help you, motivate you. They’re available. They do their best! Phenomenal!”
- “*What stands out for me is how understanding the faculty and staff are about issues facing working adults.*”
- “*The fact that I could actually make this happen. It hasn’t been that difficult to continue classes in spite of work and a family. The company paid for it. I wish more peers took advantage of it.*”
- “*That they can have conference calls for the whole class.*”
- “*The number of people I’ve met who taught me how to propagate the learning and show other people they can do it. That’s a big deal. Pretty much everyone at Pace was a role model. Helped me stay with it. ‘Let’s see what we can do.’*”

Key Finding: Two statements of a vision for EPCE

Two EPCE coalition members shared their visions with us. Below is a summary of their thoughts:

- “*Vision 2007: Entry level hires will go through the corporation’s initial training and the plant’s entry level program. Then they will take their technical courses online through BSC, their general education courses at the local community college and have hands- on experience with senior employees. This will*

probably take 2 to 3 years during which time they will be paid for part-time work, have an office and a computer to do their online studies with BSC.”

■ *“Tuition plan dollars are viewed by companies as benefit dollars. I see them as development dollars. I want to influence people to develop consonant with their strategic objectives. I want to make it easy for an employee who works on attaining skills that are needed by the company. The company would take care of all tuition processing; the employee would get no bill. They just sign up. Their books would be mailed to them. I am also toying with the idea of tying BSC’s courses into our apprenticeship training. Or including BSC in our “progression series.” In this case, employees would take their courses in a classroom on laptops with an instructor during work hours and be paid for the time. This has been tried as a pilot but results are not in yet.”*

Appendix E

Online Survey with Responses
Current Students - Pace University

Total number of responses - 250

	Did not meet any of my needs	Did not meet most of my needs	Met some of my needs	Met all my needs	Met all my needs very well	Mean
1. Thinking back on your overall NACTEL experience at Pace University, how well would you say the program has met your needs?	0%	0%	14%	38%	47%	4.3

	1999	2000	2001	2002	2003	2004	2005	2006	not sure	mean
2. Approximately when did you enter the NACTEL program at Pace University?	9%	4%	5%	6%	10%	13%	26%	24%	2%	4.24

3. When you first began your studies at Pace University, how important was each of the following goals to you?

	Un- important	Somewhat Unimportant	Somewhat Important	Important	Very Important	Not Applicable	Mean
Taking specific courses that your employer recommended	22%	6%	18%	16%	17%	20%	2.38
Taking specific courses that you thought would enhance your skills and make you a better employee	2%	2%	13%	32%	51%		4.30
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	7%	3%	12%	22%	56%		4.16
Completing one or more certificates	24%	8%	18%	20%	30%		3.24
Completing an Associate's Degree	8%	1%	2%	10%	78%		4.50
Other	15%	3%	2%	13%	67%		4.15

Please Specify: (44 responses or 17.6% of students responding to this survey)

- To complete the bachelor's degree (28 responses, 63.6%)
- Wanted to be an example for my children. (2 responses)
- I just wanted to get smarter
- Gaining a degree to go along with all of the knowledge that I have acquired throughout the past few years.
- Enjoy learning
- Improving my skill set to remain marketable in case of specific job loss.
- Testing the water to see if this was something I could keep up with.
- Flexibility of online classes.
- I always felt that the lack of a college degree has left a tremendous hole in my personal development.
- Self improvement

- Possible better job/ better pay/ bachelor's degree
- Telecommunications track certificate
- I work in 1 area of telecommunications. I wanted to gain a good understanding of other areas. It might not get me a promotion or increase in salary, but it does make me more valuable. I could transfer into other areas with some knowledge of their duties.
- I've concentrated on courses required to complete the degree.
- Learning promotes learning and on and on.
- Facilitate scheduling issues at home, so I can finish degree program.

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
4. Of those goals that you rated Very Important, which one was the most important to you when you first began?	2%	11%	21%	2%	53%	10%	2.75

5. Next, consider how important each of these goals is to you today.

	1	2	3	4	5	Mean
Taking specific courses that your employer recommended	33%	8%	19%	27%	13%	2.77
Taking specific courses that you thought would enhance your skills and make you a better employee	3%	3%	15%	36%	43%	4.13
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	7%	4%	11%	24%	54%	4.14
Completing one or more certificates	23%	8%	20%	22%	27%	3.24
Completing an Associate's Degree	10%	2%	4%	10%	74%	4.35
Other	12%	3%	0%	11%	74%	4.31

Please Specify: (48 responses or 19.2% of students responding to this survey)

- To complete the bachelor's degree. (39 or 81%)
- As an example for my sons (2)
- Gaining a degree to go along with all of the knowledge I have acquired throughout the past few years.
- Self improvement
- Still enjoy learning
- Possible better job/better pay/bachelor's degree
- Expanding knowledge base to better equip myself for job opportunities.
- If forced to retire in 3 years, I don't want to be just a 50-year-old ex-phone guy. I want to be a college grad with 30 years of experience in my field.
- Couldn't do it due to tuition, but BS was my primary goal.
- Scheduling issues at home, so I can finish degree program.

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
6. Of those goals that you rated Very Important above, which one is the most important to you today?	1%	8%	22%	2%	51%	16%	2.58

	Very Dissatisfied	Dissatisfied	Not Sure	Satisfied	Very Satisfied	Mean
7. How satisfied are you with your progress in attaining your goals?	1%	3%	6%	42%	47%	4.32

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
8. How many courses do you usually take at Pace University each year?	3%	12%	24%	24%	15%	19%	3.97

	Fewer than 3	3 to 5	6 to 8	9 or more	Not sure	Mean
9. Approximately how many NACTEL courses have you completed through Pace University?	7%	31%	17%	41%	4%	2.97

10. Have you encountered any of the following obstacles in obtaining your goals? Please check all that apply.

Response	Responses	%
Family events or demands	154	62%
Work-related events or demands (such as mandatory overtime, storms, outages)	111	44%
Personal events or health needs	93	37%
Restrictions or problems with employer tuition plan	48	19%
Computer/internet (technical) issues	38	15%
Change in professional responsibility	37	15%
Personal financial issues	31	12%
Program related issues (such as difficult or uninteresting course work; difficulty in contacting instructors, etc.)	21	8%
Other obstacle (specify below)	18	7%
Online learning not a good match	2	1%

Responses - Other Obstacle (23 responses or 9.2% of students responding to this survey)

- None - this is why online learning works so well (3 or 13%)
- Lack of high speed connection, cannot view most videos (2)
- As an adult it is hard not to have some of this effect [sic] you. NACTEL program counselors are great and have helped.
- Not enough time to complete work, late nights
- Personal time management skills. Laziness.
- Family time, children
- The internet here in China has been very, very bad due to a cable cut making online research from home quite hard. I am fortunate that the office network is still working well.
- Finding a notary for my proctors application
- I wish the courses were longer. I feel like we're taking the readers digest version.
- Restrictions on non-taxable amount of tuition, \$5260 only covers 3 classes a year.
- Vacations
- Blackboard has been down during two appointments I had with my proctor.
- Getting grants and loans in a timely manner
- Some text no [sic] well written, booklist changes, lectures did not work, at times quiz questions with dual answers
- The regular university support systems are not in tune with the online students.
- I have been taking other courses at a local college for certificate or personal interest.

- Needed help with online labs . . . no one to turn to
- The 1 week time frames, it would be better if all 12 weeks are listed on the web page since day 1. That way when forced overtime, I would still have a chance of working ahead of scheduled weeks. Sometimes my overtime is 32 hours a week on top of a 40 hour week and requires traveling to other states for months at a time.
- This latest class was my toughest to date. So many issues came up with work and some unforeseen health issues really interfered with my goals for this class. Although I enjoyed the assignments I felt I was not able to give my usual 100%. I think many people have a lot of preconceived notions that distance learning through a program/school like Pace is a pay for you degree type of program but I would just challenge them to try and take a class this way. You need total dedication and concentration to do this. In college classrooms its easy being the person in back not participating within the online experience if you do not participate, it negatively impacts your grade.

11. If you checked the choice “Program related issues” above, please briefly describe those issues. (21 responses or 8.4% of people responding to this survey)

- nothing really affecting the program overall . . . just sometimes having 5 children wears you out
- Subject matter
- Prior learning assessment is non-existent, wasting available credits that could be awarded and slowing the path toward completion of a degree. As much as I like Pace, and would like to get both my associates AND bachelors at Pace, other colleges offer a much faster degree program. For those like me who mainly want the degree (and are free to select any school), Pace will be an Associates only college.
- Not interested in english, history, or psych classes--uninteresting course work. not really related to my ultimate goal of a degree in IT. a necessary evil though, I realize.
- This hasn't been a big issue (but I did run into this problem before) but I do not agree with the teachers having 8-5 Mon-Friday hours when the assignments are distributed on Thursday mornings. I would say 99% of the students do their homework on the weekends and it is frustrating to not get an answer until Monday.
- 1) Have had a time where the instructor would not answer my specific question. After I e-mailed him three times he finally referred me back to the page that I originally had the question and told me to read that. 2) Sometimes I feel the teachers can't answer my question so I don't bother. 3) I thought Astronomy was way too hard to be an elective class.
- Difficulty getting into class during offered semester and would like better descriptions of classes.
- 1) I had to fund part of last years credits since the company tuition plan did not cover the cost. In addition I had to pay for kits and equipment that was required for the course since the tuition plan did not cover it. 2) One of the text we are using does a poor job of explaining concept. I am forced to go to other resources at times for a better explanation. 3) There were two or three lectures in one of my courses that had no audio and was never corrected. 4) I have encounter situation where a teacher has give conflicting instructions and then gave only partial credit for answers.
- Tuition assistance in the form of Grants are hard to get. Also, Honor Society Affiliations are not included in the course information.
- After 911, trouble in class worked with us so we did not fail while working 14/7 and technical troubles with computers /worked with us on those troubles.
- Unable to get response from instructor on questions, about course homework or assignments. When you have to work 8 - 5 m -f, you need access to instructors on weekends when you have time to do assignments.
- Some of the courses were very tough.
- There were a few Instructors that I had issues with: most notably they were teaching far above the level the course was intended for. How would I know this, I've attended three other Universities over 15 years and know the difference between freshman level course and a senior level or graduate course. Also, in the past I've had and made known quality control issues in the tests used for several courses. I must note that ALL of the Instructor issues and many of the Quality Control issues that I know of have

been corrected.

- The technical aspect of some the courses has been very difficult for me. However, they build upon each other and each course seems to have given me a better understanding overall.
- the regular university support systems (ie financial aid) are not able to deal with nactel students
- Unresponsive professors
- Uninteresting course work. I'm very interested in the tech courses, but the english reading and writing assignments are not only uninteresting, but it is also very demanding.
- Some courses were not that much of my interest like AC/DC or electronic circuit although the instructors were very good. There was a course which I didn't like the instructor's skill but it was a different course not the ones above.
- Course work is starting to take more of my private time and I am starting to rethink if this is how I wish to use my private time when my efforts will not help my financial situation but most likely I will stick w/my original goal of obtaining the communication certificates offered through PACE.
- Some instructors are excellent and always available, the others certainly not. Also on-line labs such as with the AIT 109 course stink. The router lab is run by someone in NYC that never resets or responds to the students. It caused a high level of frustration. Also, many of the on-line labs require you to have Microsoft Office 2003 or newer. That was never specified. I had to do all my work after hours at my office to avoid the expense of buying the new Microsoft Office.
- There were questions on the mid-terms and finals that we never covered in class. Some professors are not too successful in explaining or introducing the math questions.

	Definitely not	Probably not	Probably will	Definitely will	Mean
12. Assuming your employment status remains the same, do you plan to continue your studies with Pace University until you attain your most important goals?	0%	2%	17%	82%	3.8

13. Finally, what stands out for you when you think about your experience with Pace University?

Response	Responses	%
The convenience of being able to study and do assignments at any time of the day or night	212	85%
The knowledge gained	192	77%
The program's flexibility	185	74%
Your personal accomplishments	167	67%
The helpfulness of the Pace staff and faculty	158	63%
The quality of the program	153	61%
The support from your company's tuition assistance plan	148	59%
The link between this program and your work	91	36%
Encouragement and recognition from your employer	21	8%

Online Survey with Responses

Current Students - Bismarck State College

Total number of responses - 36

	Did not meet any of my needs	Did not meet most of my needs	Met some of my needs	Met all my needs	Met all my needs very well	Mean
1. Thinking back on your overall EPCE experience at Bismarck State College, how well would you say the program has met your needs?	0%	0%	23%	49%	29%	4.04

	1999	2000	2001	2002	2003	2004	2005	2006	not sure	mean
2. Approximately when did you enter the EPCE program at Bismarck State College?	0%	3%	6%	6%	23%	29%	31%	3%	0%	4.26

3. When you first began your studies at Bismarck State College, how important was each of the following goals to you?

	Un- important	Somewhat Unimportant	Somewhat Important	Important	Very Important	Not Applicable	Mean
Taking specific courses that your employer recommended	6%	6%	17%	17%	36%	19%	3.14
Taking specific courses that you thought would enhance your skills and make you a better employee	3%	0%	6%	31%	60%		4.46
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	3%	0%	9%	20%	69%		4.51
Completing one or more certificates	13%	6%	19%	25%	38%		3.69
Completing an Associate's Degree	6%	0%	9%	20%	66%		4.40
Other	20%	0%	20%	40%	20%		3.40

Please Specify: (4 responses or 11% of people responding to this survey)

- NERC Continuing Education Credits
- Understanding training that could be developed for the workers in my group.
- I took this course to fulfill a dream of mine obtaining a college degree.
- Have associates in mechanical engineering and needed job specific distributive electrical classes

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
6. Of those goals that you rated Very Important above, which one is the most important to you today?	14%	26%	23%	0%	34%	3%	2.58

	Unimportant	Somewhat Unimportant	Somewhat Important	Important	Very Important	Mean
Taking specific courses that your employer recommended	21%	0%	26%	18%	35%	3.47
Taking specific courses that you thought would enhance your skills and make you a better employee	6%	0%	12%	33%	48%	3.47
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	3%	0%	12%	18%	68%	4.47
Completing one or more certificates	19%	0%	19%	28%	34%	3.59
Completing an Associate's Degree	6%	0%	9%	18%	68%	4.41
Other	0%	0%	0%	67%	33%	4.33

Please Specify: (2 responses or 5% of people responding to this survey)

- Understanding training that could be developed for the workers in my group
- NERC Continuing Education Credits

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
6. Of those goals that you rated Very Important above, which one is the most important to you today?	6%	17%	26%	0%	46%	6%	3.20

	Very Dissatisfied	Dissatisfied	Not Sure	Satisfied	Very Satisfied	Mean
7. How satisfied are you with your progress in attaining your goals?	0%	0%	6%	57%	37%	4.31
	1-3 Courses	4-6 Courses	7-9 Courses	10-12 Courses	Not sure/ Too soon to know	Mean
8. How many courses do you usually take at Bismarck State College each year?	28%	33%	14%	22%	3%	2.61
	Fewer than 3	3-5	6-8	9 or more	Not sure	Mean
9. Approximately how many EPCE courses have you completed through Bismarck State College?	0%	9%	12%	68%	12%	2.18

10. Have you encountered any of the following obstacles in obtaining your goals?

Please check all that apply.

Response	Responses	%
Work-related events or demands (such as mandatory overtime, storms, outages)	23	64%
Family events or demands	22	61%
Personal events or health needs	9	25%
Change in professional responsibility	8	22%
Computer/internet (technical) issues	7	19%
Personal financial issues	4	11%
Program related issues (such as difficult or uninteresting course work; difficulty in contacting instructors, etc.)	4	11%
Restrictions or problems with employer tuition plan	4	11%
Other obstacle (specify below)	3	8%
Online learning not a good match	1	3%

Other obstacle: (4 responses or 11% of people responding to this survey)

- Some of the general courses have such a tight schedule that it makes it difficult to complete during this time when my work load is so high. I'm not one to make excuses for myself so I may suffer because of this with poor grades.
- Hurricane Katrina in 8/2005 and computer problems 1/2007
- bad experience with Professor [name removed] in UG Construction - this changed my attitude negatively about this program.
- A teacher that is incompetent

11. If you checked the choice "Program related issues" above, please briefly describe those issues.

(5 responses or 13.8% of people responding to this survey)

- There have been occasions when the quizzes had questions that were not covered in the material for the specific unit; timed quizzes (must read and type very rapidly).
- Time difference with instructor and student. Instructor not understanding the student and employers requirements for overtime during a storm, extended out of town trips. 4 and 5 weeks is often not enough time with other work and home needs.
- Trying to keep up with my job duties and take classes on my PC at work. I do not have internet at home.
- large out of town storms
- There has only been one instructor that I felt was unreasonable in the way he responded to questions/ requests.

	Definitely not	Probably not	Probably will	Definitely will	Mean
12. Assuming your employment status remains the same, do you plan to continue your studies with Bismarck State College until you attain your most important	0%	3%	31%	66%	3.63

13. Finally, what stands out for you when you think about your experience with Bismarck State College?

Response	Responses	%
The convenience of being able to study and do assignments at any time of the day or night	28	78%
The program's flexibility	22	61%
The knowledge gained	21	58%
Your personal accomplishments	19	53%
The support from your company's tuition assistance plan	16	44%
The quality of the program	14	39%
The helpfulness of the Bismarck State College staff and faculty	10	28%
The link between this program and your work	10	28%
Encouragement and recognition from your employer	6	17%

Appendix F

Online Survey with Responses
AS Graduates - Pace University
Total number of responses - 50

	Did not meet any of my needs	Did not meet most of my needs	Met some of my needs	Met all my needs	Met all my needs very well	Mean
1. Thinking back on your overall EPCE experience at Bismarck State College, how well would you say the program has met your needs?	0%	0%	7%	36%	57%	4.5

	2001	2002	2003	2004	2005	2006	Not Sure	mean
2. During what year did you complete your Associate's Degree?	4%	4%	13%	22%	22%	33%	0%	3.47

	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	Not Sure	mean
3. Approximately how many years did it take you to complete your Associate's Degree?	13%	52%	15%	13%	7%	0%	4.52

	1	2	3	4	5	6	7 or more	Not sure	mean
4. How many courses did you usually take at Pace University each year?	0%	9%	13%	28%	17%	17%	13%	2%	4.30

When you first began your studies at Pace University, how important was each of the following goals to you?

	Un-important	Somewhat Unimportant	Somewhat Important	Important	Very Important	Not Applicable	Mean
Taking specific courses that your employer recommended	24%	8%	10%	12%	10%	36%	1.68
Taking specific courses that you thought would enhance your skills and make you a better employee	0%	9%	7%	42%	42%		4.18
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	7%	0%	20%	31%	42%		4.02
Completing one or more certificates	30%	11%	16%	16%	27%		3.00
Completing an Associate's Degree	0%	4%	2%	11%	83%		4.72
Other	18%	0%	9%	9%	64%		4.00

Please Specify: (8 responses or 16% of people responding to this survey)

- Continuing education (2)
- To complete the bachelor's degree (2)
- Gaining technical knowledge to help me better understand my job for my own personal improvement.
- i sought my degree when i suspected that many of us would retire from bell with 30 years, and i

needed something that would distinguish me from all of the other ex-bell guys. as it turns out the telecommunications industry has not boomed and is doing quite the opposite.

- Having the freedom to choose other jobs at AT&T rather than feeling like Marketing was all I could achieve
- Gaining skills and knowledge that might help me maintain my job or secure a similar job were I to find myself in the job market.

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
6. Of those goals that you rated Very Important, which one was the most important to you when you first began?	0%	13%	15%	0%	63%	9%	2.61

7. Now that you have completed your Associate's degree, what are your new education and/or training goals? Please check all that apply.

Response	Responses	%
To work toward a bachelor's degree	29	58%
To take additional courses that you think will enhance your skills and make you a better employee	12	24%
No new goals at this time	7	14%
To acquire additional skills that might help you receive a promotion and/or a salary increase	6	12%
Other (please specify)	5	10%
To take additional courses that your employer recommends	1	2%

Other (5 responses or 10% of people responding to this survey)

- I have completed my BS and working on my MS (3)
- Completed my BS (2)

8. Did you encounter any of the following obstacles in obtaining your goals?

Please check all that apply.

Response	Responses	%
Family events or demands	25	50%
Work-related events or demands (such as mandatory overtime, storms, outages)	19	38%
Restrictions or problems with employer tuition plan	12	24%
Personal events or health needs	10	20%
Change in professional responsibility	9	18%
Personal financial issues	9	18%
Computer/internet (technical) issues	6	12%
Other obstacle (specify below)	5	10%
Program related issues (such as difficult or uninteresting course work; difficulty in contacting instructors, etc.)	2	4%
Online learning not a good match	0	0%

Other obstacle: (5 responses or 10% of people responding to this survey)

- My own procrastination
- Termination of employment
- [Staff name removed] helped me with the right connections to financial aide.
- proctor fees are \$200 the first hour and \$150 each add'l hour; you had to revolve around their schedule
- i did not have many issues other than our onerous tuition aid plan that seemed to change on a daily basis, my proctor on the other hand could check off everything on this list, and his trials became my trials as we worked together toward my goal.

9. If you checked the choice "Program related issues" above, please briefly describe those issues.

- No responses in program related issues.

10. Finally, what stands out for you when you think about your experience with Pace University?

Response	Responses	%
The convenience of being able to study and do assignments at any time of the day or night	40	80%
The knowledge gained	33	66%
The program's flexibility	32	64%
The helpfulness of the Pace staff and faculty	31	62%
The quality of the program	26	52%
Your personal accomplishments	25	50%
The support from your company's tuition assistance plan	20	40%
The link between this program and your work	12	24%
Encouragement and recognition from your employer	5	10%

Online Survey with Responses

AAS Graduates - Bismarck State College

Total number of responses - 45

	Did not meet any of my needs	Did not meet most of my needs	Met some of my needs	Met all my needs	Met all my needs very well	Mean
1. Thinking back on your overall EPCE experience at Bismarck State College, how well would you say the program has met your needs?	2%	0%	12%	42%	44%	4.26

	2001	2002	2003	2004	2005	2006	Not Sure	mean
2. During what year did you complete your Associate's Degree?	0%	0%	9%	14%	26%	51%	0%	2.81

	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	Not Sure	mean
3. Approximately how many years did it take you to complete your Associate's Degree?	43%	36%	14%	2%	2%	2%	5.09

	1-3 courses	4-6 courses	7-9 courses	10-12 courses	Not sure/ Too soon to know	mean
4. How many courses did you usually take at Bismarck State College each year?	11%	39%	11%	36%	2%	3.20

5. When you first began your studies at Bismarck State College, how important was each of the following goals to you?

	Un- important	Somewhat Unimportant	Somewhat Important	Important	Very Important	Not Applicable	Mean
Taking specific courses that your employer recommended	11%	2%	16%	9%	33%	29%	2.64
Taking specific courses that you thought would enhance your skills and make you a better employee	0%	0%	14%	28%	58%		4.44
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	0%	2%	18%	23%	57%		4.34
Completing one or more certificates	32%	10%	15%	15%	29%		3.00
Completing an Associate's Degree	2%	0%	5%	7%	86%		4.75
Other	0%	0%	0%	0%	100%		5.00

Please Specify: (3 responses or 6.6% of people responding to this survey)

- preparation for securing a job in the electric power industry
- For me personally it was important to start and finish this program and I did.
- Completing a program that was company approved to meet requirements for a specific career with the company.

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
6. Of those goals that you rated 'Very Important', which one was the most important to you when you first began?	11%	18%	2%	2%	66%	0%	3.07

7. Now that you have completed your Associate's degree, what are your new education and/or training goals? Please check all that apply.

Response	Responses	%
To work toward a bachelor's degree	29	64%
To take additional courses that you think will enhance your skills and make you a better employee	9	20%
To acquire additional skills that might help you receive a promotion and/or a salary increase	8	18%
No new goals at this time	7	16%
To take additional courses that your employer recommends	6	13%
Other (please specify) (4 responses or 8.8% of people responding to this survey) <ul style="list-style-type: none"> ■ increase my ability to secure a job in the electric power industry ■ I went on to complete a bachelor's degree in work management ■ My company let me go so I am now working on a bachelor's degree in education through Northern Arizona University on-line. ■ To complete the 3-yr in-house company specific progression/training required to become fully qualified in the position that required the AAS degree 	3	7%

8. Did you encounter any of the following obstacles in obtaining your goals? Please check all that apply.

Response	Responses	%
Family events or demands	27	60%
Work-related events or demands (such as mandatory overtime, storms, outages)	26	58%
Change in professional responsibility	8	18%
Computer/internet (technical) issues	8	18%
Program related issues (such as difficult or uninteresting course work; difficulty in contacting instructors, etc.)	7	16%
Personal financial issues	7	16%
Personal events or health needs	6	13%
Restrictions or problems with employer tuition plan	4	9%
Other obstacle (specify below)	3	7%
Online learning not a good match	0	0%

Other obstacle (4 responses or 8.8% of people responding to this survey)

- I had to take the english class at another school.
- Employer/Union did not accept the certificate for entry even into an apprenticeship.
- I lost my job because one of the journeymen in our shop thought this program was a waste of time seen no reason for a degree and said it was taking me to long to understand the job I was apprenticing for.
- My company offers \$5000/yr towards tuition; however, in order to attend full time, it was necessary for me to pay for a large portion of my own education. Through conversations with other employees, I am aware that most other employees will not use their own money, but will take one course at a time. It was also important for me to finish quickly by loading up on as many courses as possible in one semester. The curriculum schedule and the advisors strongly disapprove of such a demanding schedule. I felt that it would be best for me, in my circumstances, to decline the suggestions and take on as much as possible in order to finish in one year. The only reason I chose to obtain the AAS degree at this late date in my career was to obtain a position with my company that required this 2yr degree. These positions are not offered on a regular basis and I had to be certain that I was qualified when the position was offered.

9. If you checked the choice "Program related issues" above, please briefly describe those issues.

(6 responses or 13.3% of people responding to this survey)

- Most instructors were readily available to answer questions and provide help. One in particular, however, did not provide any feedback and could not be contacted for over a month. We (the students) finally had to get others at the school involved. I'm not certain as to why the instructor disappeared. Perhaps a family emergency? Overall, the course was a huge waste of time.
- Some instructors were not readily accessible.
- Changing of general procedure of classes as classes were happening. For example, making certain chapters having to be completed by a certain date. This was not in the syllabus nor announced by BSC. It took away from the flexibility of on-line learning
- At times I had difficulties in course work due to family or work obligations. Working ahead would have been helpful if it had been allowed at the time.
- Some of the instructors were difficult to contact. Dates on the class website were often not updated so it made it very confusing keep track of when things were due.
- Had difficulty due to the online registration changes that were being made at the time.

10. Finally, what stands out for you when you think about your experience with Bismarck State College?

Response	Responses	%
The convenience of being able to study and do assignments at any time of the day or night	38	84%
The program's flexibility	31	69%
Your personal accomplishments	26	58%
The quality of the program	25	56%
The helpfulness of the BSC staff and faculty	23	51%
The knowledge gained	23	51%
The support from your company's tuition assistance plan	22	49%
The link between this program and your work	17	38%
Encouragement and recognition from your employer	4	9%

Appendix G

Online Survey with Responses

Taking a Break - Pace University

Total number of responses - 98

	Did not meet any of my needs	Did not meet most of my needs	Met some of my needs	Met all my needs	Met all my needs very well	Mean
1. Thinking back on your overall EPCE experience at Bismarck State College, how well would you say the program has met your needs?	2%	0%	12%	42%	44%	4.26

	2001	2002	2003	2004	2005	2006	Not Sure	mean
2. During what year did you complete your Associate's Degree?	0%	0%	9%	14%	26%	51%	0%	2.81

	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	Not Sure	mean
3. Approximately how many years did it take you to complete your Associate's Degree?	43%	36%	14%	2%	2%	2%	5.09

	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	Not Sure	mean
3. Approximately how many years did it take you to complete your Associate's Degree?	43%	36%	14%	2%	2%	2%	5.09

Response	Responses	%
The convenience of being able to study and do assignments at any time of the day or night	38	84%
The program's flexibility	31	69%
Your personal accomplishments	26	58%
The quality of the program	25	56%
The helpfulness of the BSC staff and faculty	23	51%
The knowledge gained	23	51%
The support from your company's tuition assistance plan	22	49%
The link between this program and your work	17	38%
Encouragement and recognition from your employer	4	9%

Other (11 responses or 11.2% of people responding to this survey.)

- Transferred in lieu of being laid off during 2002 layoffs. Difficult to maintain proctoring requirements.
- courses i need are not offer in late spring
- Time spent studying was greater than anticipated, Time needed to achieve final goal was too daunting a task to continue
- I am taking some class in written communications at another school. I am trying to improve my written communications skills.
- when questions were asked, was told to 'go back over the lesson'. That was lots of help
- MY program at work (Qwest) was not taking care of its business(tuition) so they wouldn't let me go on until that was taken care of and it was but then I had to go through all the red tape again. I started to go through it again and then lost interest.
- you wont allow payments when waiting for tuition to be granted from my employer

- Laid off from Verizon they were paying my tuition
- High Speed Internet not available in area. Dial-up access too slow.
- Tuition reimbursement policy despite my 'A' grades
- had trouble locating a proctor for math tests

6. If you checked Item I – Program related issues—please briefly describe those obstacle(s) in the box below. (8 response or 8.1% of people responding to this survey)

- Problems with proctors (2)
- I had a problem with the way some classes required group projects. In an online environment, you can't rely on other classmates to show up to the chatrooms. I ended up doing all of the work on multiple assignments. The people assigned to my group got to reap the benefits even though they didn't participate.
- I had sent several emails asking for some assistance and heard nothing. When I did hear something it was from the TA and I responded to the email and heard nothing. The course was tough on me and I was looking for some assistance. I felt unsupported.
- Had health issue.
- Some of the Professors better understand the difficulties and needs of working family oriented students than others [sic]. I also had difficulty with the communication between the administrative staff and myself
- I had dropped my courses back in Sept.06 before the semester began. A few days afterwards there was a withdrawal from my bank account in which my tuition was accessed. I was under the impression that Student Aid had withdrawn the payment back out of the account. A month and a half later my account closed because of some over-charges. Pace University, without my knowledge of knowing because of relocating, returned the funds in which they had previously withdrawn several months earlier. When Pace University deposited the payment for tuition aid back into my account, which was delinquent, the bank accessed the funds to make necessary adjustments for the bank account and kept the account closed. Now, I am not able to be eligible for tuition aid until my employer has deducted the payment that Pace decided to withdraw and then place back whenever they decided!
- I was told by a young lady in the Pace financial AID department that i was not matriculated and that I was unable to receive financial aid. Therefore I had to apply for personal student loans. The second semester they denied me because of the amount that was requested in the time period.

	Once before	Two or more times before	Never before	Mean
7. Have you found it necessary to take a break from this program before?	22%	4%	74%	1.47

8. When you first began your studies at Pace University, how important was each of the following goals to you?

	Unimportant	Somewhat Unimportant	Somewhat Important	Important	Very Important	N/A	Mean
Taking specific courses that your employer recommended	15%	10%	20%	22%	13%	18%	2.53

	Unimportant	Somewhat Unimportant	Somewhat Important	Important	Very Important	Mean
Taking specific courses that you thought would enhance your skills and make you a better employee	1%	1%	11%	29%	58%	4.41
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	5%	6%	13%	22%	54%	4.14
Completing one or more certificates	22%	9%	12%	26%	32%	3.37
Completing an Associate's Degree	5%	3%	7%	21%	63%	4.33
Other	38%	6%	0%	0%	56%	3.31

Please Specify: (10 responses or 10.2% of people responding to this survey)

- To complete the bachelor's degree (6)
- Personal reasons
- Gaining the knowledge
- Learning! Trying to keep my mind active and what better way than something that interests me.
- Finding a school that wasn't there just to take your money? Priceless

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
9. Of those goals that you rated 'Very Important', which one was the most important to you when you first began?	2%	21%	20%	0%	51%	5%	3.07

10. Next, consider how important each of these goals is to you today.

	Unimportant	Somewhat Unimportant	Somewhat Important	Important	Very Important	Mean
Taking specific courses that your employer recommended	36%	8%	20%	20%	15%	2.69
Taking specific courses that you thought would enhance your skills and make you a better employee	7%	8%	10%	35%	41%	3.97
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	11%	5%	12%	29%	42%	3.87
Completing one or more certificates	22%	9%	16%	26%	27%	3.28
Completing an Associate's Degree	10%	1%	14%	20%	55%	4.09
Other	33%	0%	5%	19%	43%	3.38

Please Specify: (7 responses or 7.1% of people responding to this survey)

- Completing a bachelor's degree (4)
- Master's degree
- See above. I felt a certain disconnect with the program and administration. The communication lacked complete understanding in my opinion. Somewhat like this opinion pole [sic] which doesn't allow a specific section to express this opinion.
- Learning, and keeping my mind active, instead of early retirement.)

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	Mean
11. Of those goals that you rated Very Important above, which one is the most important to you today?	2%	18%	16%	1%	54%	9%	2.87

	Very Dissatisfied	Dissatisfied	Not Sure	Satisfied	Very Satisfied	Mean
12. How satisfied are you with your progress in attaining the goals that are most important to you today?	6%	23%	19%	41%	11%	3.28

	Definitely not	Probably not	Probably will	Definitely will	Not sure	Mean
13. Do you think you will continue your education in the future?	0%	1%	29%	63%	7%	2.25

14. Finally, what stands out for you when you think about your experience with Pace University?

Response	Responses	%
The convenience of being able to study and do assignments at any time of the day or night	76	78%
The program's flexibility	55	56%
The knowledge gained	49	50%
The helpfulness of the Pace staff and faculty	46	47%
The quality of the program	41	42%
The support from your company's tuition assistance plan	39	40%
Your personal accomplishments	29	30%
The link between this program and your work	29	30%
Encouragement and recognition from your employer	4	4%

Appendix H

Online Survey with Responses

Left the Program Permanently - Pace University

Total number of responses - 44

	Did not meet any of my needs	Did not meet most of my needs	Met some of my needs	Met all my needs	Met all my needs very well	Mean
1. Thinking back on your overall experience at Pace University, how well would you say the NACTEL program met your needs?	12%	5%	27%	22%	34%	3.61

	1999	2000	2001	2002	2003	2004	2005	2006	Not Sure	mean
2. Approximately when did you enter the NACTEL program at Pace University?	33%	12%	9%	5%	7%	9%	5%	7%	14%	5.93

	1 year	2 Years	3 Years	4 Years	5 Years	6 or more Years	Not Sure	mean
3. Approximately how long did you remain in the Pace University/NACTEL program?	52%	27%	5%	0%	0%	0%	16%	5.68

	1 - 3	4 - 6	7 - 9	10 - 12	13 or more	Not sure	mean
4. During that time how many courses did you take at Pace University?	48%	34%	7%	0%	2%	9%	4.98

5. Did any of these things influence your decision to take leave Pace University? Please check all that apply.

Response	Responses	%
Family events or demands	12	27%
Other (please specify)	11	25%
Restrictions or problems with employer tuition plan	10	23%
Program related issues (such as difficult or uninteresting course work; difficulty in contacting instructors, etc.)	9	20%
Online learning not a good match	8	18%
No longer employed in this industry	7	16%
Personal financial issues	6	14%
Work-related events or demands (such as mandatory overtime, storms, outages)	6	14%
Personal events or health needs	5	11%
Completing the courses you wanted to complete	5	11%
Change in professional responsibility	4	9%

6. If you checked the choice Program related issues above, please briefly describe those obstacle(s) in the box below. (10 responses or 22.7% of students responding to this survey)

- Online programs aren't a way that I learn.
- Learning becomes more difficult with age. It was easy to contact instructors.
- [sic] instead of grading on tests taken, she wanted us to have study groups. duh reason i did not go back to college in classroom . lack of time
- the group meeting was a joke. the question/answer response took almost the whole time for 1 question and no additional help available. i had to hire a tutor to get answers and help. so i decided to go community college and get one on one . i only went to pace thinking i could go at my own learning pace but that didn't happen.
- Lack of professional courtesy in addressing issues with administration
- The program was not challenging enough. I was bored most of the time. There was no real interaction with the instructor. If I have a question about something I do not want to wait 2 days to receive an e-mail back answering my question. I also learn much more by seeing not teaching myself which is pretty much what we do through the course. I just need to find a way to go to a traditional college.
- I ran into difficulty using online course for electrical class I took. For example wiring a circuit correctly using a computer program really didn't help me learn the concepts on electrical circuitry
- very cumbersome and uncomfortable to work with
- Some of the courses were difficult, I believe some of the required math included Trigonometry, very difficult when you have not been involved in math that complicated.
- I was given wrong information about tuition by your staff which cost me money and one of the advisor was so rude to me I stop going. 'Well maybe this is not for you' is what she said after i was trying to get a clear understanding about the tuition. I do another internet degree program at University of Toledo on which I am a honors student. thanks

7. When you first began your studies at Pace University, how important was each of the following goals to you?

	Unim- portant	Somewhat Unimportant	Somewhat Important	Im- por- tant	Very Im- por- tant	N/A	mean
Taking specific courses that your employer recommended	20%	5%	23%	18%	27%	7%	3.07
Taking specific courses that you thought would enhance your skills and make you a better employee	2%	5%	12%	28%	53%		4.26
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	7%	7%	16%	21%	49%		3.98
Completing one or more certificates	5%	12%	14%	29%	40%		3.88
Completing an Associate's Degree	12%	7%	2%	29%	50%		3.98
Other	57%	14%	0%	0%	29%		2.29

Please Specify: (3 responses or 6.8% of students responding to this survey)

- getting a bachelor degree
- I already have an A.S.. The B.S. was what I was shooting for but Pace didn't recognize enough of my previous credits
- I just took one course in telecommunications - already have my MBA but wanted to learn more about broadband technology

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	mean
8. Of those goals that you rated 'Very Important', which one was the most important to you when you first began?	0%	26%	31%	5%	33%	5%	3.38
	Very Dissatisfied	Dissatisfied	Not Sure	Satisfied	Very Satisfied		mean
9. How satisfied are you with your progress in attaining the goals that are most important to you today?	16%	14%	23%	36%	11%		3.14

	Definitely not	Probably not	Probably will	Definitely will	Not sure	mean
10. Do you think you will continue your education in the future?	7%	20%	22%	41%	10%	2.73

11. Finally, what stands out for you when you think about your experience with Pace University?

Response	Responses	%
The convenience of being able to study and do assignments at any time of the day or night	30	68%
The program's flexibility	20	45%
The knowledge gained	19	43%
The support from your company's tuition assistance plan	16	36%
The quality of the program	16	36%
The helpfulness of the Pace staff and faculty	13	30%
Your personal accomplishments	10	23%
The link between this program and your work	8	18%
Encouragement and recognition from your employer	0	0%

Online Survey with Responses

Left the Program Permanently - Bismarck State College

Total number of responses - 12

	Did not meet any of my needs	Did not meet most of my needs	Met some of my needs	Met all my needs	Met all my needs very well	mean
1. Thinking back on your overall EPCE experience at Bismarck State College, how well would you say the program met your needs?	9%	9%	27%	45%	9%	2.64

	1999	2000	2001	2002	2003	2004	2005	2006	not sure	mean
2. Approximately when did you enter the EPCE program at Bismarck State College?	0%	0%	18%	27%	27%	18%	9%	0%	0%	5.27

	1 year	2 Years	3 Years	4 or more Years	Not Sure	Mean
3. Approximately how long did you remain in the Bismarck State College / EPCE program?	82%	9%	9%	0%	0%	4.73

	Definitely not	Probably not	Probably will	Definitely will	Not sure	Mean
4. During that time how many courses did you take at Bismarck State College?	50%	40%	10%	0%	0%	5.40

5. Did any of these things influence your decision to take leave Bismarck State College? Please check all that apply.

Response	Responses	%
Completing the courses you wanted to complete	6	50%
Work-related events or demands (such as mandatory overtime, storms, outages)	4	33%
Change in professional responsibility	2	17%
No longer employed in this industry	1	8%
Family events or demands	1	8%
Other (please specify)	1	8%
Restrictions or problems with employer tuition plan	0	0%
Personal financial issues	0	0%
Online learning not a good match	0	0%
Program related issues (such as difficult or uninteresting course work; difficulty in contacting instructors, etc.)	0	0%
Computer/internet (technical) issues	0	0%
Personal events or health needs	0	0%

Other (1 response or 8.3% of students responding to this survey)

- My company asked me to try several classes as a pilot program.

6. If you checked choice Program related issues above, please briefly describe those obstacle(s) in the box below.

No responses for “program related issues”

7. When you first began your studies at Bismarck State College, how important was each of the following goals to you?

	Unim- portant	Somewhat Unimportant	Somewhat Important	Im- por- tant	Very Im- por- tant	N/A	mean
Taking specific courses that your employer recommended	17%	17%	0%	17%	42%	8%	3.25
Taking specific courses that you thought would enhance your skills and make you a better employee	0%	0%	27%	27%	45%		4.18
Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	9%	9%	18%	45%	18%		3.55
Completing one or more certificates	36%	18%	9%	27%	9%		2.55
Completing an Associate’s Degree	55%	9%	9%	18%	9%		2.18
Other	50%	0%	0%	50%	0%		2.50

Please Specify: (1 response or 8.3% of students responding to this survey)

- I took the course as a pilot for my company's participation.

	Taking specific courses that your employer recommended	Taking specific courses that you thought would enhance your skills and make you a better employee	Gaining skills and knowledge that might help you receive a promotion and/or a salary increase	Completing one or more certificates	Completing an Associate's Degree	The choice you entered above for Other, if any	mean
8. Of those goals that you rated 'Very Important', which one was the most important to you when you first began?	36%	27%	9%	18%	9%	0%	4.64
	Very Dissatisfied	Dissatisfied	Not Sure	Satisfied	Very Satisfied		mean
9. How satisfied are you with your progress in attaining the goals that are most important to you today?	0%	10%	20%	50%	20%		3.80

	Definitely not	Probably not	Probably will	Definitely will	Not sure	Mean
10. Do you think you will continue your education in the future?	0%	30%	50%	10%	10%	3.00

11. Finally, what stands out for you when you think about your experience with Bismarck State College?

Response	Responses	%
Completing the courses you wanted to complete	6	50%
Work-related events or demands (such as mandatory overtime, storms, outages)	4	33%
Change in professional responsibility	2	17%
No longer employed in this industry	1	8%
Family events or demands	1	8%
Other (please specify)	1	8%
Restrictions or problems with employer tuition plan	0	0%
Personal financial issues	0	0%
Online learning not a good match	0	0%
Program related issues (such as difficult or uninteresting course work; difficulty in contacting instructors, etc.)	0	0%
Computer/internet (technical) issues	0	0%
Personal events or health needs	0	0%

Appendix I ²

Comparison

Pace University and Bismarck State College

“What Stands Out for You When You Think About Your Experience with Bismarck State College?”

EPCE / Bismarck State College

	Current Students	A.S. Graduates	Taking Break	Left Program
Convenience of being able to study at any time	28 78%	38 84%	48 89%	8 67%
Knowledge gained	21 56%	23 51%	38 70%	3 25%
Program's flexibility	22 61%	31 69%	36 67%	3 25%
One's personal accomplishments	19 53%	26 58%	24 44%	4 33%
Helpfulness of BSC staff & faculty	10 28%	23 51%	19 35%	3 25%
Quality of program	14 39%	25 56%	25 46%	2 17%
Support from company's tuition plan	16 44%	22 49%	25 46%	1 8%
Link between this program and one's work	10 28%	17 38%	32 59%	4 33%
Encouragement & recognition from employer	6 17%	4 9%	10 19%	0 ---

NACTEL / Pace University

	Current Students	A.S. Graduates	Taking Break	Left Program
Convenience of being able to study at any time	212 85%	40 80%	76 78%	30 68%
Knowledge gained	192 77%	33 66%	49 50%	19 43%
Program's flexibility	185 74%	32 64%	55 56%	20 45%
One's personal accomplishments	167 67%	25 50%	29 30%	10 23%
Helpfulness of Pace staff & faculty	158 63%	31 62%	46 47%	13 30%
Quality of program	153 61%	26 52%	41 42%	16 36%
Support from company's tuition plan	148 59%	20 40%	39 40%	16 36%
Link between this program and one's work	91 36%	12 24%	29 30%	8 18%
Encouragement & recognition from employer	21 8%	5 10%	4 4%	0 ---

² For each comparison in Appendix J, respondents could check all that applied. Therefore, column totals exceed 100%.

**Comparison
Respondents Taking a Break
Pace University and Bismarck State College**

Variable: Factors influencing respondent to take a break

Question: “Did any of these factors influence your decision to take a break from your coursework at Pace University/Bismarck State College? Please check all that apply.”

	BSC Left Program	Pace Left Program
Completing courses wanted to complete	6 50%	5 11%
Work-related demands events or demands	4 33%	6 14%
Change in professional responsibility	2 17%	2 9%
No longer employed in industry	1 8%	7 16%
Family events or demands	1 8%	12 27%
Restrictions/problems with employer tuition plan	0 ---	10 23%
Personal financial issues	0 ---	6 14%
Online learning not a good match	0 ---	8 18%
Program-related issues	0 ---	9 20%
Computer/ internet (technical) issues	0 ---	0 ---
Personal events or health needs	0 ---	5 11%
Other	1 8%	11 25%

Appendix J

Focus Group of School Representatives

Interview Guide and Summary

Interview Outline

- Use pipeline as a framework for strategy discussion
- Overview of the pipeline within each school: first contact - application - registration - student advising, signed up for courses, continued registration, etc.
 - Strategies to support students at each step - document
 - How have these changed or evolved?
 - Any concerns about strategies -- any place where you're thinking about trying something new
- Besides these formal points of contact, are there informal ones?
- For current/ongoing students (i.e. early course survey, midpoint survey, end of course surveys, how's it going?)
 - Specific courses as stopping points. Case Study that surfaced during phone conversations: Student who had a difficult time in a course, problems with professor, school offered that she could take the course again at no cost, but she had had enough.
Probe - Do you see this often? Are there strategies in place to identify this?
 - 3rd party billing. Case study from phone interview: Student who had such a frustrating and difficult time with his company's tuition assistance program that he quit school.
Probe - Do you see this often? How do you manage this?

Closing

- Anything to add?
- If you something occurs to you later, chance to send it along to us
- Chance to review this report - another opportunity to add?

Focus Group: BSC EPCE/Pace NACTEL Program Staff Data Summary

INTRODUCTION

This Focus Group Interview was held by telephone April 27, 2007 with representatives from Bismarck State College (BSC), provider for the EPCE program and Pace University (Pace), provider for NACTEL. The purpose of the interview was to answer the question asked in the original proposal for this study: “What components of an institutional retention program are already in place and with what results?”

We structured the interview to examine strategies at each step of the institutional process through which all students move:

- First Contact
- Application
- Registration
- Student Advising
- Ongoing participation

For each of these steps we asked focus group participants to reflect on:

- The strategies in place to support students
- How these strategies may have changed or evolved
- Any concerns they might have about these strategies; any that they are thinking about changing.

We also introduced some data, in the form of ‘case studies,’ that were encountered during focused interviews with 12 students who had completed the online survey and indicated they would be willing to speak with us. Focus group participants were asked to respond to the issues raised by these case studies.

KEY FINDINGS

At first contact both schools have strategies in place for informing students about program offerings; registration procedures; costs; and other programmatic options, such as BSC’s apprenticeship program. The major difference between the two schools here is the methodology chosen to transmit the information. Pace’s methodology is primarily web and e-mail-driven, while BSC relies more brochures and other print materials which they mail. Both schools also make sure inquirers know whom they can reach by telephone with questions and concerns.

Pace has always relied on automated responses and has never tended to send print materials. They support the students in this manner at “every step on the way.” They have improved their process over time and continue to examine and modify it. They try to assure that their communication with inquirers is “engaging, welcoming and responsive.”

BSC began web support approximately two and one-half years ago and they have continued to improve it. A relatively new step is to keep an inquirer “in the loop” even if s/he does not immediately submit an application.

At this point we asked a question **about what each school does to inform students and prepare them for online learning.**

- Both institutions ask inquirers to complete questionnaires on their web sites, designed to assist

them in determining if online learning is for them.

- Both provide sample or demonstration classes. Pace provides online narrated tours of classes, samples of which can be found on their website. BSC emphasizes, several times throughout their demonstration classes, what online learning requires of the learner, what the learner should expect in terms of time requirements, and the need for strong self-starting and self-discipline.

Representatives from both BSC and Pace report that they do periodic reviews of these methods and work to improve them continually. Pace regularly surveys both inquirers and students to discern where changes are needed.

At the application and admission stage, BSC has step-by-step information available both electronically and in print materials. There is one individual who handles all admission and registration procedures for the college and this individual is fully available to online students.

After the EPCE program was initiated, the school adopted a new software that created additional steps in the admission process. At that point, BSC found that they had to enhance student support. This resulted in hiring an advisor who is totally dedicated to EPCE students. This advisor is very proactive with students, carefully outlining, upfront, the steps required during the application, admission and registration processes.

Pace has 3 online advisors who work solely for NACTEL. They are familiar with application, admission and registration processes and know the faculty. They are dedicated to the students at application time and thereafter. The NACTEL staff reports glowing comments from students with respect to their advisors.

In addition, the university has an electronic student information center. This is a relatively new addition to the program. With this, students can see what the university is about, what it can offer them, etc. They believe their online advisors make a great difference in easing students' paths. And, again, they continue to tweak what they do.

Both organizations report providing total support to students during the **registration process**, including, at BSC, a 24/7 help desk for software problems and questions. With respect to software for NACTEL: over time, Pace created a "shadow information system," using a very user-friendly software. All NACTEL student data are entered into this system and then uploaded into the University's system at the end of each day.

Working with **current and ongoing students**, both organizations use student surveys to gather student input. EPCE courses last only 5 weeks, therefore, BSC staff does one survey at the end of each class. They rely heavily on data gathered through ongoing conversations that their EPCE advisor has with students. This advisor introduces herself to new students via e-mail, explaining who she is and what she can do for the student throughout their participation in EPCE. In addition she addresses graduation and employment questions.

NACTEL courses are 12 weeks, and Pace staff embeds 3 surveys in each course—at 4 weeks, 8 weeks and 12 weeks. They pay close attention to the results of these surveys and make every effort to confront any problems immediately.

We presented two **"case studies"** to the focus group participants, taken from telephone interviews held with online survey respondents.

- The first of these with a woman who had taken 2 courses successfully through her program and then encountered problems with an instructor. Several students complained to program administration and when the course ended the school offered any student wishing to do so an opportunity to re-take the course at no cost. This student, however, had received a passing grade and considered that good enough given the circumstances. In her own words, she “ran,” and is no longer enrolled in the program.

Staff representing BSC discussed their mentoring program for adjunct professors who wish to teach online. This is a certification course that reviews the entire structure of online instruction. The contract presented to a new adjunct includes performance expectations. After receiving the certificate, the new adjunct is “shadowed” by a full-time instructor who observes the entire course.

Students are encouraged to discuss any concerns they may have with the EPCE advisor. In addition, at the end of each course, students are asked to complete a survey, sharing their thoughts about the course and the instruction. They have rarely had to replace an instructor.

Pace staff again alluded to their ongoing surveying of students. These are anonymous, go to a separate web site, and give students full opportunity to identify their problems. Pace tries to deal with student-instructor issues immediately. They believe that a key piece is to “never, ever, ever” become defensive but to move forward quickly with whatever information one has. Possible solutions include speaking with the instructor, moving the student to a different section, replacing the instructor if that seems necessary.

Pace also has a strategy called, the “roll-over.” When students inform them of any legitimate reason that will prevent them from completing a course, they may take it during its next iteration, for a grade, at no additional cost.

- The second case study concerned problems with employer tuition assistance programs. One respondent cited the amount of paper work demanded each term by his company and commented that the amount of time he spent on that paperwork negated all the efficiency gained through online learning. He had left the program, wondering why the school and his tuition plan administrator couldn’t communicate directly. A second student could not afford to pay all his tuition (required upfront) until he received his employer’s reimbursement for his completed courses. His problem was with automated e-mails, threatening to “kick him out of the class” unless he paid his tuition. “They know they’re going to get the money—why do they have to send me these e-mails?”

Both schools face these problems. Automated e-mails are “part of the game,” and tuition is due very early in the term. BSC is part of a state system and they can only “bend” the policies so far. EPCE staff works with their business office regularly, but the system is in place for traditional course delivery and doesn’t factor in block-style delivery or third party billing.

First semester students usually face the most frequent problems—the schools know more about their companies’ tuitions plans than they do. Both schools offer to help students work with their companies but students have to take note of those offers and then avail themselves of the assistance. In some cases, the schools can work directly with the tuition offices, but only when the student has given the school permission to speak with his/her employer. A student does not have to mediate between the school and the employer, but the student is responsible for putting the two organizations together. Both schools agree that it’s much easier to work with companies that have one centralized tuition plan.

It’s important to note here that students who are under pressure with respect to tuition payments frequently respond by taking fewer courses (or possibly one course) each term. Obviously this increases

their time to degree.

Additional items for discussion, initiated by group participants, included the following:

- BSC's placement program; and
- BSC's current exploration of establishing a virtual campus to enable online students to feel a stronger connection to the college and to each other, thereby enhancing retention.

A brief discussion of the **placement program**, which includes a career services office, an online job service, etc., concluded this is a stronger recruiting tool for the college than a retention tool for EPCE.

The vision of a **virtual campus** might enable online students to feel more a part of the school. They are not on the campus but they are a part of it. Ideas include a club for energy students; helping to establish support groups within companies; promoting a sense of community. Funding is not yet available to develop this concept.

Prior to this discussion, the representative from Pace University had to leave the call but we spoke to him later about BSC's concept. His own concern is the time constraint working adults always face. He believes that they already manage to form some friendships, study teams, etc., but would have little time for or interest in additional activities. However, if someone were willing to design a brief questionnaire to ascertain student interest in a virtual campus, he would be very willing to assist in launching the survey.

CONCLUSIONS

- Both Bismarck State College and Pace University report numerous components of an institutional retention system in place to support students at each step of the student's journey.
- Both are continually monitoring what they do and examining what new or different methodologies they might try.
- They both invite feedback from students and work to respond to that feedback to any extent that is possible.
- Obviously, many factors contribute to a student's decision to either remain with or leave one of these programs and a large proportion of these factors are not within the school's control. We examine these in the data gathered through the online survey. However, it appears that the schools' are doing a great deal to help and support their online students. Focused telephone interviews with students verify that this is accurate.
- Some exchange of information between BSC and Pace did take place during this focus group interview and we have encouraged the two staffs to continue to ask each other questions and provide help for one another whenever possible.

Appendix K

Employment Data - Telecommunications and Utilities

Bureau of Labor Statistics

Telecommunications

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann Av.
1990	979.9	979.4	976.9	978.4	981.7	984.3	984.5	984	980.1	980	977.6	977	980.3
1991	974.7	973	974.1	976	972.9	977.6	977.4	975	973	973.5	965.4	964.7	973.1
1992	944.7	947.1	944.6	941.2	944.4	948.7	949.8	950.7	947.7	945.1	945.7	942.7	946
1993	934.9	934	934.6	935.1	938.9	944.6	945.2	948.2	946	948	949.7	946.6	942.2
1994	945.2	948.6	949.8	952.2	959.3	964.2	965.6	972.6	965.7	968.9	970.9	970	961.1
1995	958.5	969.6	971.4	971.5	972.7	978.2	982.1	981	981	982.9	983	976.8	975.7
1996	973.1	970.8	972.7	977.3	983.5	998.5	1006	1014	1015.4	1012	1021	1019.9	997
1997	1023	1031.7	1041.9	1047.9	1054	1064	1068	1075	1069.9	1077	1080.2	1082	1059.5
1998	1084	1087	1090.7	1098.1	1105	1112	1115	1111	1111.6	1120	1127.2	1133.1	1107.8
1999	1141	1149.1	1152.1	1157.5	1169	1176	1184	1192	1196.1	1206	1214	1219.3	1179.7
2000	1222	1228.2	1235.3	1240.6	1254	1269	1278	1202	1292.7	1299	1307	1323.4	1262.6
2001	1315	1325.7	1329.4	1325.2	1321	1312	1304	1293	1284.7	1283	1276	1255.9	1302.1
2002	1238	1230.4	1221.4	1210	1202	1194	1182	1173	1156.1	1155	1148.6	1126.8	1186.5
2003	1116	1106.3	1097	1093.5	1087	1084	1076	1074	1068.3	1066	1061.1	1059.4	1082.3
2004	1058	1055.4	1052.5	1048	1043	1041	1037	1030	1015.9	1012	1011.1	1012.6	1034.6
2005	1007	1006.4	1003	1001.2	998.4	996	991.9	985.5	979.6	978.1	979.6	977.4	992
2006	970.9	974.8	971.5	973	974.1	969.2	970	971.6	972.2	974.1	975.8	977.8	972.9

<http://data.bls.gov/cgi-bin/dsrv>

NACTEL years in yellow

Series ID : CEU5051700001

Not Seasonally Adjusted

Super Sector : Information

Industry : Telecommunications

NAICS Code : 517

Data Type : ALL EMPLOYEES, THOUSANDS

Electric Power Generation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann Av.
1990	351.1	351.2	352.9	353	353.6	357.2	357.8	357.1	352.8	351.6	350.7	350.7	353.3
1991	349.6	348.7	349	348.5	349.2	352.3	352.9	353.3	348.8	347.8	347.7	347.3	349.6
1992	346.9	345.9	345.9	345	345.8	348	348.7	347.6	343.2	341.7	340.1	338.8	344.8
1993	338	337.4	337.2	336.8	337.4	340	340	338.8	334.3	333	330.7	329.5	336.1
1994	328.7	327.5	326.5	325.6	325.3	326.5	326.4	324.6	320.8	319.2	318.4	317.4	323.9
1995	314.8	313.8	313.1	312.6	312.9	314.7	314.3	313.2	310.2	309.1	308	307	312
1996	303.8	301.8	301.2	300.3	300	300.4	299.2	297.9	294.7	293.3	292.8	291.7	298.1
1997	290	289.3	289.1	288.5	288.8	290.6	290.9	289.4	287.6	286.7	286.1	286.2	288.6
1998	285.3	284.9	285.4	284.8	285.9	287.4	287.3	285.9	284	283.2	283.3	283.6	285.1
1999	281.7	281.8	282.8	280.6	281.9	284.1	283.4	282.7	280.7	279.6	279.8	280.1	281.6
2000	279.4	278.8	279.1	278.3	278.3	280.4	280.7	279.4	277.7	278	278	279	278.9
2001	277.3	277.4	277.6	276.2	276.8	278.7	277.8	277.2	275.8	274.5	275.5	275.2	276.7
2002	274.6	274	275.1	274	275.3	276.2	273.5	271.4	269.4	268.9	265.6	263.4	271.8
2003	259.4	259.1	258.6	256.8	255.1	256.2	255.3	253.7	252.4	251.5	249.6	249.4	254.8
2004	249.1	248.9	249.5	249.5	249.9	251	249.3	248.2	246.9	245.3	243.8	243	247.9
2005	242.6	242.6	241.6	239.9	240.5	240.3	241.3	241.7	240.4	240.2	239	237.8	240.7
2006	236.6	237.7	237.1	238.8	238.4	238.7	240.4	240.5	239.9	238.4	238.2	238.6	238.6

<http://data.bls.gov/cgi-bin/dsrv>

Series ID : CEU442211001

EPCE years in yellow

Not Seasonally Adjusted

Super Sector : Utilities

Industry : Electric power generation

NAICS Code : 22111

Data Type : ALL EMPLOYEES, THOUSANDS

What Is CAEL?

The Council for Adult and Experiential Learning (CAEL) is a national non-profit organization that designs and promotes strategies for adult learning and human capital development through partnerships among business, higher education, government, and labor.

CAEL works to remove policy and organizational barriers to learning opportunities, identifies and disseminates effective practices, and delivers value-added services. We believe learning is central to the vitality of individuals, organizations, communities, and regions.

The Council for Adult and Experiential Learning (CAEL)
1608 Walnut Street
Suite 1404
Philadelphia, Pennsylvania 19103
Phone: 215-731-0191
Fax: 215-731-0505

The Council for Adult and Experiential Learning (CAEL)
55 East Monroe Street
Suite 1930
Chicago, Illinois 60603
Phone: 312-499-2600
Fax: 312-499-2601

The Council for Adult and Experiential Learning (CAEL)
6021 South Syracuse Way
Suite 213
Greenwood Village, CO 80111
Phone: 303-773-3956
Fax: 303-773-0026

