2008

Follow-Up of Danville Community College Networking Track III Graduates form 2005-2007

Steven Carrigan
Old Dominion University

Follow this and additional works at: http://digitalcommons.odu.edu/ots_masters_projects

Part of the Education Commons

Recommended Citation
http://digitalcommons.odu.edu/ots_masters_projects/82
FOLLOW-UP OF DANVILLE COMMUNITY COLLEGE
NETWORKING TRACK III GRADUATES FROM 2005-2007

A Research Paper Presented to the Graduate Faculty of the
Department of Occupational and Technical Studies at
Old Dominion University

In Partial Fulfillment of the Requirements for the Master of
Science in Occupational Technical Education Degree with a
Concentration in Community College Teaching

By

Steven Carrigan

August 2008
This research paper was prepared by Steven Carrigan under the supervision of Dr. John Ritz in Problems in Occupational and Technical Studies. It was submitted to the Graduate Program Director in partial fulfillment of the requirements for the Master of Science degree in Occupational and Technical Studies.

Approved By:

_____________________________
Dr. John Ritz
Graduate Program Director

Date: ________________________
ACKNOWLEDGEMENTS

The author of this study would like to extend a special thank you to Dr. John Ritz for all his support and guidance in completing this study. His patience and understanding was well received and appreciated.

I would also like to thank my wife for all her support and love while I worked on completing my graduate degree and for understanding when I blew off steam from all the pressure.

Steven Carrigan
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>9</td>
</tr>
<tr>
<td>III</td>
<td>14</td>
</tr>
<tr>
<td>IV</td>
<td>19</td>
</tr>
<tr>
<td>V</td>
<td>25</td>
</tr>
</tbody>
</table>

**Chapter I**
- Introduction ................................................. 1
  - Statement of Problem ...................................... 2
  - Research Goals ............................................ 2
  - Background and Significance ............................. 3
  - Limitations .................................................. 5
  - Assumptions ................................................. 5
  - Procedures .................................................. 6
  - Definition of Terms ....................................... 6
  - Summary and Overview .................................... 7

**Chapter II**
- Review of Literature ....................................... 9
  - Opportunities and Benefits for IT Technicians ...... 9
  - Preparing Graduates for the Workforce ............... 10
  - Features of the Networking Track III Curriculum .. 11
  - Summary ...................................................... 12

**Chapter III**
- Methods and Procedures .................................. 14
  - Population ................................................... 14
  - Instrument Design ........................................ 16
  - Methods of Data Collection ............................. 17
  - Statistical Analysis ..................................... 17
  - Summary ...................................................... 17

**Chapter IV**
- Findings ......................................................... 19
  - Data Collection ............................................ 19
  - Survey Results ............................................. 20
  - Summary ...................................................... 23

**Chapter V**
- Summary, Conclusions, and Recommendations ........ 25
  - Summary ...................................................... 25
  - Conclusions ................................................ 27
LIST OF TABLES

Table 1, Number of DCC Networking Track III Graduates per Year 2005-2007 ...............16
Table 2, Number of Graduates Responding to Questionnaire .............................................19
Table 3, Responses to Question 1 ........................................................................................20
Table 4, Responses to Question 2 ........................................................................................20
Table 5, Responses to Question 3 ........................................................................................21
Table 6, Responses to Question 4 ........................................................................................21
Table 7, Responses to Question 5 ........................................................................................22
Table 8, Responses to Question 6 ........................................................................................22
Table 9, Responses to Question 7 ........................................................................................23
LIST OF FIGURES

Figure 1, Enrollment Trends ................................................................. 2

Figure 2, Graduate Population 2005-2007 ........................................... 15
CHAPTER I
INTRODUCTION

The process of completing surveys of student successes after graduating from college can provide a multitude of data that can be useful to any college and its success. For example, the information that can be obtained from post-graduate surveys includes marketing profiles that can be useful in recruitment of potential students, the ability to demonstrate the successfulness of the college through job placement statistics, and information for determining future budgets for the curriculum based on its success.

During the collection of this data, the opportunity for encouragement of the graduate to return for additional training or matching the graduate to an employment opportunity that is currently in need of filling can also be accomplished. As a result of tabulating this data, the results can be useful in determining if possible biases exist or changes are needed to the standards previously set for the curriculum. Therefore, it is the opinion of this researcher that the proper collection, interpretation, and implementation of the findings from a graduate survey can make a difference to any educational institution.

The collection of post-graduate information has been done by Danville Community College (DCC) for many years, but individualized department surveys have not been undertaken. According to Yaple, Director of Tech Prep and Career Placement at DCC, prior to recognizing the benefits of these statistics the college administration’s viewpoint was simply that there was no need for this particular information to be collected from departments, and it should be left alone (Yaple, 2008). However, as seen in the latest enrollment trends collected by Huffman, Director of Research and Development at DCC, lower student enrollments has forced the college to rethink its
stand on the methods of its statistical data collection and reconsider ideas that may have been overlooked or disregarded (Huffman, 2008).

As seen in Figure 1, the headcount showed some fluctuation in enrollment at Danville Community College between 2001-2006. The trends that began in 2003 through 2007 show that student headcount has steadily decreased and has now passed below the 2001 count. If this trend continues, it will have a direct effect on loss of jobs by college faculty and staff as well as an effect on the community service region the college supports.

![Figure 1. Enrollment Trend](image)

**PROBLEM STATEMENT**

The focus of this study was to determine the graduate job placement rate of the Networking Track III curriculum offered at Danville Community College and what impact did obtaining this training have on their success.

**RESEARCH GOALS**

The following questions have been established to assist in providing answers to this research study:
1. Did the training provided to the students improve their chances of obtaining employment?

2. Did the percentage of the participants surveyed say they were planning on returning to DCC for additional training?

3. What recommendations can be made from the collection of the data to improve enrollment in Danville Community College’s Networking Track III curriculum?

BACKGROUND AND SIGNIFICANCE

To address the lower student enrollment, college administration has begun to recognize the potential opportunities that are available with departmental surveyed data and has placed the collection of this data at a priority level. During discussions on the collection and use of this data, it was also determined that any information that was collected would be kept secured, updated each year, and modified as necessary.

DCC was not always aggressive with collecting data from its alumni on their career employment status in the past. The first records of this type of surveyed information were done in fall 2006 and have continued on through today. However, the statistical data collected by Yaple (2008), showed that prior to 2007 the information was inaccurate, not updated, and lacked any type of order. Now in 2008, graduate student surveys are being collected more regularly and include more types of questions regarding success after graduation. As reported by Yaple (2008), some of the surveyed questions included the following.

- Are you currently employed? If not, are you currently seeking employment?
• What is your current occupation? Please respond specifically to your current job title.

• Is your current job related to your program of study you completed at DCC?

• Has your degree helped you obtain a promotion in your present job?

• Do you plan to continue your education; and if so, do you plan to return to DCC?

Although these questions were well thought out, the methods used for collecting this data were sporadic and returned very little usable information. According to Yaple (2008), there are a few problems with the way the surveys are collected. To begin, problems with the collection of the data included surveys that were distributed but were never returned or returned incomplete and improper timing of the surveys being administered, which was immediately after graduation. In many cases it was premature since most had not begun to seek employment. Finally, in some cases the graduates were overlooked altogether due to their absence at graduation.

To continue the commitment of collecting alumni statistics, DCC also started a website devoted to statistical data collection from its alumni. To make the site known to alumni, a letter was sent to each offering the opportunity to register, but unfortunately the web site’s popularity has not increased. Listed below are the benefits of registering with the alumni database for DCC (Huffman, 2008):

• Opportunity to connect with other classmates.

• Network for jobs at postings across the U.S.

• Career Center access to local job posting.
• News and job search opportunities.
• Additional features added in the future.

The significance of performing this study will show that collecting this data by individual departments may provide solutions to our current decline in student population or help in formulating recommendations from the findings.

LIMITATIONS

The limitations of this study included the following:

• This research study focused only on graduates from Danville Community College.

• Graduates that were surveyed were selected from the alumni database of Networking Track III graduates.

• Graduates from the Microcomputer and Programming curriculums at DCC were not included due to time constraints and lack of proper access to resources.

• Surveyed graduates were from 2005 through 2007 due in part to students leaving the college service region after a period of time.

ASSUMPTIONS

The assumptions of this research study were based on the following criteria:

• If usable data is collected from alumni, it could be used for program improvement.

• Graduates obtaining a degree in networking will lead to a more intelligent, educated pool of workforce candidates.
• Graduates, who register with the Virginia Employment Commission, will increase their chances at obtaining degree specific employment.

PROCEDURES

The survey was administered via telephone calls to all 2005-2007 graduates of the DCC Networking Track III curriculum. The data collection instrument asked the graduates to respond to questions related to their current occupation. The questions they were asked included whether they were employed in their field of study or not, did they have plans of returning to DCC to update their skills, what was their overall satisfaction level with the degree they obtained, and in addition there was an opportunity for them to make comments. By allowing this survey to be of an open and closed form, it would provide an opportunity to allow for a deeper discussion between the interviewer and the graduate. It should be noted that with this type of survey additional time will be required to complete the data collection, although this researcher feels that it will be worth the additional effort once the final results are tabulated.

Once all the data had been collected from the surveyed questions, the information would be analyzed by this researcher and made available to DCC administration for review upon request. The methods used to document the surveyed data included documentation and categorization of the responses and strategically entered into a Microsoft Excel spreadsheet.

DEFINITION OF TERMS

The following definitions were provided to assist the reader in their meanings.

**Information Technology** – The branch of engineering that deals with the use of computers and telecommunications to retrieve, store, and transmit information.
**Danville Community College (DCC)** – Located in Danville, Virginia; DCC’s service region includes the City of Danville, Pittsylvania County, Halifax County, and some of the northern areas of North Carolina.

**Networking Track III** – Provided by Danville Community College, the Networking Track III curriculum was comprised of 66 credits of traditional and technical training. The emphasis placed on networking included Microsoft and Cisco Systems as well as certification preparedness courses.

**V.E.C** – Virginia Employment Commission. Although the V.E.C. did not play a major role in this study, it was worth noting that most of the graduates had registered with the commission in hopes of securing employment.

**SUMMARY AND OVERVIEW**

Chapter I included an introduction to the problem this study was to address. Its purpose was to collect graduate employment statistics to assist in recruitment efforts. The goals of this research contained three questions: Did the training provided to the students improve their chances of obtaining employment, what were the success rates of the participants in obtaining employment in their field of study, and what percentage of the participants surveyed said they were planning on returning to DCC for additional training? Each of these goals was considered important in its own way, but together they formed a strong connection to the future of DCC. The background and significance of this research study had provided support for the collection of this data, which was used to assist in enrollment issues faced by the college, in particular the Networking Track III curriculum. The boundaries that surrounded this study created a link between the description of the problem and the actual facts that were collected. The specific
procedures included in the collection of the data were limited to telephone calls directly to the graduates.

Chapter II provides for a literature review that contains statistical labor rates for the Danville service region, new business trends in Danville, workforce preparedness advantages, and components of the Networking Track III curriculum. Chapter III describes the methods and procedures used in this research study. Chapter IV presents the results of the survey and Chapter V will conclude this study and demonstrate any recommendations that may have been discovered during the research process.
CHAPTER II
REVIEW OF LITERATURE

This chapter will provide a review of literature for this study. To provide support for this study, Chapter II will illustrate the different opportunities and benefits available for IT technicians in the Danville and surrounding areas through labor rates and salary statistics. Chapter II will then address workforce preparedness opportunities provided for graduates by DCC and an overview of the Networking Track III curriculum.

OPPORTUNITIES AND BENEFITS FOR IT NETWORK TECHNICIANS

The term IT carries many titles and creates opportunities for individuals based on their own interests or abilities. As defined in the Merriam-Webster’s Dictionary, the letters IT stand for Information Technology and are defined as the technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data (Merriam-Webster, 2008). In recent years, the Danville area has seen an influx of companies both large and small who are in need of hiring IT professionals who live locally and who have the skills and knowledge necessary to keep their networks running. The problem was this rapid growth had surpassed the available skilled networking professionals being trained at DCC, which has forced these companies to look beyond the confines of the Danville service region for individuals to hire with the proper educational background and experience.

To illustrate the financial benefits of a well trained IT technician in the Danville service region, the average pay was around $65,000 (VWC, 2008); however, when compared to the average salary of $582 per week for a general worker in this area the benefits were noticeable (VWC, 2008). The Virginia Workforce Services reported that for the state of Virginia, there were approximately 32,000 businesses that had employed
over 363,000 IT professionals (VWC, 2008). With the numbers these statistics were reporting, there is justification for having well-trained network technicians available for hire.

PREPARING GRADUATES FOR THE WORKFORCE

To assist graduates in preparing for working in the field, DCC provided two services that could guide or assist them in finding their future careers. The first service DCC provides to its graduates is called Workforce Services, which is designed to help individuals find employment after graduation and to work with industries and local businesses to match employees with employers based on skill levels, technical expertise, and educational background (VWS, 2008). As another benefit of the VWS, it also offers services to both the employer and the employee that can include advanced educational training on or offsite that is designed specifically to be matched to an A.A.S Degree from DCC.

The second service DCC offered to help graduates prepare for the workforce was assistance in obtaining industry certification. When a graduate in the networking curriculum completes their studies they are ready to begin the certification process. However, due to the cost of the certification exams, paying for them can present a problem for graduates; especially for those who have not gained employment yet. To offset the cost of the exams, DCC offered the James Parrish Scholarship Fund that pays for 50% of the cost of the certification if the graduate passes. A copy of the scholarship form can be found in Appendix A.
FEATURES OF THE NETWORKING TRACK III CURRICULUM

Two of the most distinct features of the Networking Track III curriculum included the depth of the training provided and the selection of degrees and certificates offered. The overall goals of the networking curriculum was to provide high quality instruction with access to state-of-the-art equipment and to faculty who provide the skills needed to obtain entry level or better work in the networking field.

The networking curriculum offers two certificates and an A.A.S. Degree to assist in meeting the needs of the students who attend. The certificates, Network Technology and Networking with Cisco, both include key courses that provide training to those individuals who meet one or more of the following categories as specified by Danville Community College administration.

- Candidate already working in the field without a degree or simply wishes to update skills they already have.
- Candidate has already received a degree in networking and is simply looking to update the skills they already have.
- Candidate has degree(s) in different field and is looking for just the training that provides them the networking skills needed for obtaining work in the networking field.
- Candidate is currently seeking only training and certificates that will give them the job skills they will need to begin work in the field of Information Technology. See Appendix B for a complete list of certificate details provided by Danville Community College.
Skills and abilities provided by the Networking Track III curriculum and listed in the Danville Community College student handbook include:

- Emphasis on designing, creating, and maintaining local and wide area networks.
- Detailed instruction on the following concepts is also provided:
  - Network Management both logical and physical.
  - Digital Voice Telephony Services.
  - Cisco switch configurations.
  - Cisco firewall configurations.
  - Cisco router configurations.
  - Configurations of servers, workstations, hardware, software, and computer operating systems. See Appendix B for a complete list of certificates provided by Danville Community College.

Candidates seeking the A.A.S. Degree in Networking Track III will have the same benefits as those who follow the certificate path, but they will also obtain training in mathematics and English as well as other courses that make the degree certified by the state of Virginia. Therefore, either path the candidate takes will provide them with all the skills they need to begin their career. A copy of the Networking Track III curriculum A.A.S. Degree and Certificate opportunities are provide in Appendix B.

**SUMMARY**

Chapter II was focused on the importance of the training provided by DCC to fill the need for network technicians locally as well as state wide. It was then discussed how important it was for the college to have statistical data on its graduates and their current
employment status to assist in curriculum reviews that will assist in making possible recommendations for improvement.

The next discussion topic covered was on workforce preparedness for graduates, which discussed in detail the dedication DCC puts into preparing its graduates for the workforce and the services it offers. The final topic covered illustrated the different facets of the Networking Track III curriculum. In this area, the distinct features of the networking curriculum were discussed with an emphasis on the certificates and degree offerings provided by the college. It was also shown that although students may have different reasons for seeking education, the college is there to meet their needs.

This study will continue to provide details that are specifically related to the Networking Track III curriculum alumni and their impact on this study. Chapter III will contain detailed information on the Methods and Procedures used in this study.
Chapter III of this study will elaborate on the population and the survey instrument design used to collect the data. Chapter III will then discuss the methods of data collection and their statistical analysis followed by a summary of the chapter.

**POPULATION**

The surveyed population included all of the graduates from the Networking Track III curriculum from the years 2005-2007. The specific graduate contact information used for this study was retrieved from student population data on file with the college, which was provided by Gaffney, Information Technology Specialist, at DCC (Gaffney, 2008). The content of this data included the names, addresses, telephone numbers, email addresses, and date of graduation of all candidates for this study.

After the initial review of the graduate contact list used for this study, it was decided that due to the small number of graduates in the surveyed population, all would be included in this study. After determining the population for this study it was also decided that future collections of surveyed data from graduates would be easier if the students were contacted just prior to graduation to make sure all of their contact information was up-to-date. As seen in Figure 2, the distribution of graduates during the 2005-2007 time periods had a total population of 40, which divided into 23 males and 17 females.
Historically the networking curriculum at DCC has been dominated by a male population, but today that gap between the genders appears to be narrowing. While reviewing the graduate contact information it was found that the male population carried 57.5% of the total population and showed the female population gaining momentum at 42.5% of the total. Although these figures may not appear to be useful on the surface, they do show that when recruitment efforts are in place. They should be sure to not overlook the potential growth from both populations.

Continuing in the analyses of the selected population, documentation in the college’s student population data report provided by Gaffney, in 2005 the Networking Track III curriculum had a total of fifteen graduates; in 2006 the curriculum had a total of eighteen graduates; and finally in 2007 the curriculum had a total of seven graduates (Gaffney, 2008). See Table 1 for the yearly number of students.
Table 1. Number of DCC Networking Track III Graduates per Year 2005-2007

<table>
<thead>
<tr>
<th>Graduation Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Graduates</td>
<td>15</td>
<td>18</td>
<td>7</td>
</tr>
</tbody>
</table>

INSTRUMENT DESIGN

The instrument for this descriptive study was designed and based on the research goals of this study. The specific questions included in this survey were divided into closed-ended questions that required a simple yes or no answer and open-ended questions to allow the respondent to reflect on their own feelings and opinions. The development of the instrument design was based partly on a survey DCC already uses, but modified to reflect departmental objectives. Since this survey asked questions that were based on closed-ended and open-ended responses, each type of question would be alternated throughout the survey to keep a symmetrical flow and to assist in keeping the individual taking the survey interested and alert. All results from this survey contained forced responses that were based on a Likert scale and carried a point value of 1 to 5, with the “Very Satisfied” receiving a score of 5 and “Very Dissatisfied” receiving a score of 1. The survey also included personal feedback on the satisfaction and relevance of obtaining their degree and the impact it had on their career success. A copy of the survey is included in Appendix C.

To assist in keeping specific or identifying personal information from being revealed about the human subjects in this survey, graduates were not asked for their employer’s name, their salary, or anything that could be misconstrued as too personal, inappropriate, or offensive. The purpose of the questions in this survey was to verify
specific information that could be utilized by the college and contribute to its goals of increasing student enrollment in the networking curriculum.

METHODS OF DATA COLLECTION

The collection of the surveyed data was accomplished through telephone calls placed to graduates and began in May and was completed by August 2008. All collected data were maintained by this researcher. Additional efforts were made to contact participants who were not available during initial calls limited to three phone call attempts due to time constraints of this study. All respondents were sent a thank you letter for participating in the survey after all data had been collected, analyzed, and recommendations made. A sample introduction letter can be found in Appendix D and a thank you letter is provided in Appendix E.

STATISTICAL ANALYSIS

A Microsoft Excel spreadsheet was utilized and updated regularly to track the graduate responses for each question. The central tendency measurement was used to provide statistical analysis of the data collected. The Likert scale was used to determine the mean for the closed-ended questions in this survey and was defined through the use of a calculator function in the Microsoft Excel spreadsheet. The validation of the mean was determined by averaging data within the spreadsheet and all open-ended reactions for this study were assigned a point value of 1 for those who made comments and 0 for those who elected not to make comments.

SUMMARY

Chapter III produced a detailed analysis of the graduate population for this study, which included all of the alumni from the years 2005-2007. The content of the data
included the names, addresses, telephone numbers, email addresses, and the date of graduation. The instrument used for this study was a descriptive survey and was administered to each of the alumni in order to facilitate this study. Other factors that were addressed included the data collection methods, which were done through telephone calls to each participant; those who were unable to be reached on the initial endeavor were given additional attempts in order to help reliability and add support for this study, but was limited based on time constraints. The statistical analysis reported that the Likert scale would be used in calculating the mean and both open-ended and closed-ended questions were assigned point values based on the participant’s responses. Chapter IV will present the results of the survey and discuss any findings that may be discovered.
CHAPTER IV
FINDINGS

This chapter presents the findings for this study. The problem of this study was to determine the effectiveness of the Danville Community College Networking Track III curriculum between the years of 2005-2007 as it relates to the graduates of the program. The findings produced from this survey will reflect the responses of those graduates who were available to participate in this study. The survey utilized to collect the data was comprised of specific questions that related to the graduate’s current employment status and the impact their training at DCC had on their success.

In designating the population for this study, there were forty graduates who were identified and thirty-seven actually responded. Table 2 shown below references the number of graduates responding to the questionnaire that was collected in May, 2008.

<table>
<thead>
<tr>
<th>Total Number of Graduates Surveyed</th>
<th>Number of Responses</th>
<th>Return Rate Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>37</td>
<td>92.5%</td>
</tr>
</tbody>
</table>

Results of Surveyed Respondents

The first three questions of the survey were based on the graduate employment status and included responses based on the impact the degree had on obtaining their employment and their job title. As seen in Question 1, the survey requested employment status. Of the thirty-seven graduates, twenty-eight stated that they were employed and nine reported they were unemployed. The results of Question 1 showed that 92.5% of the surveyed population was employed, which demonstrated that
there was a high percentage of graduates employed. The results of this question can be found in Table 3.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answered Yes</th>
<th>Answered No</th>
<th>Percentage Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are you currently employed?</td>
<td>28</td>
<td>9</td>
<td>75.6%</td>
</tr>
</tbody>
</table>

Question 2 was used to determine if the employment status of the graduate utilized the degree they obtained from DCC. If the respondent was not employed this question was omitted. The results of Question 2 showed that 67.9% of the respondents who were employed held positions that utilized the degree they obtained from DCC in the Networking Track III curriculum. The results of Question 2 are found in Table 4. It should be noted that two of the participants said that although their degree was not utilized in their current position, it was beneficial in helping them obtain employment and could offer them opportunities in the future for advancement.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answered Yes</th>
<th>Answered No</th>
<th>Percentage utilizing networking degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. If “Yes” to question 1, does your current position utilize the degree you obtained from DCC in the Networking Track III curriculum?</td>
<td>19</td>
<td>9</td>
<td>67.9%</td>
</tr>
</tbody>
</table>

Question 3 was used to determine the job title of the respondents. These were collected to provide a general idea of the types of positions the graduates were currently holding. The results indicated that 71.4% of the respondents had actual IT job titles, although these titles were duplicated in some cases since IT job titles are specific to the employer. The job titles provided by the respondents were Desktop Support Technician,
Director of IT, Webmaster, Network Technician, Network Administrator, PC Technician, Help Desk Technician, and IT Manager. The results of Question 3 are shown in Table 5. It should be noted that although the data collected for this question was actually linked to Question 1, which asked the participant if they were currently employed, Question 3 requested more specific information to determine relevancy with the Networking Track III curriculum offered through DCC.

<table>
<thead>
<tr>
<th>Question</th>
<th>Has Job Title in IT</th>
<th>Does Not Have Job Title</th>
<th>Percentage of graduates who have an IT job title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. What is your job title?</td>
<td>20</td>
<td>8</td>
<td>71.4%</td>
</tr>
</tbody>
</table>

Question 4 was used to determine what impact the respondent’s degree played in obtaining their current position. The closed responses that were available for selection included Hi Impact, Moderate Impact, Neutral, and No Impact with a weighted point value assigned from 4 to 1 respectively. It was determined that out of the twenty-eight respondents, eighteen stated that there was a High Impact correlation between having their degree and the success of obtaining their current position. With the results from Moderate Impact coming in second with seven, Neutral at two, and No Impact at one with a total mean score of 2.5. The results of Question 4 can be found in Table 6.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. What impact do you feel your degree played in obtaining this position?</td>
<td>HI 18 MI 7 N 2 NI 1</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Question 5 was used to determine the overall satisfaction the graduate experienced from the level of workforce preparation the degree provided. The different
levels included Very Satisfied, Moderately Satisfied, Neutral, Moderately Dissatisfied, and Very Dissatisfied with a weighted point value assigned from 5 to 1 respectively. The results of this question showed that thirty-one of the respondents were very satisfied with the level of workforce preparation that they received from the DCC Networking Track III curriculum and six stating moderate satisfaction with a total mean of 3.0. None of the respondents indicated a neutral, moderate, or very dissatisfied opinion in the workforce preparation they received from DCC. The results of Question 5 are provided in Table 7.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Overall, how satisfied are you with the level of workforce preparation that the DCC Networking Track III Program has provided?</td>
<td>VS</td>
<td>MS</td>
</tr>
</tbody>
</table>

Question 6 of this survey was used to determine if the respondent had any plans of returning to DCC to continue their education. This question did not require them to state what program they would like to pursue, but it did provide an opportunity for discussion on new courses in the networking program that may be of interest to the graduate. The results of this question indicated that out of the thirty-seven respondents, twenty-three stated that they planned to return to DCC for additional training and fourteen who were not going to return. The total percentage of those returning for additional training was 62.1%. The results of Question 6 can be found in Table 8.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answered Yes</th>
<th>Answered No</th>
<th>Percentage Returning to DCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Do you plan to return to DCC to continue your educational training?</td>
<td>23</td>
<td>14</td>
<td>62.1%</td>
</tr>
</tbody>
</table>
Question 7 asked the respondents to make suggestions or other comments they felt would benefit DCC or the networking program. The results of this question indicated that only sixteen wished to make comments or suggestions and twenty-one stating they had no comments for a total of 43.2% stating comments or suggestions for the program. Of the respondents who made comments and suggestions, there was a clear indication that improvements could be made that would not only benefit new students, but would also create opportunities for alumni who wanted to return for additional training. The comments that were made by the respondents can be found in Appendix F. The results for Question 7 can be found in Table 9.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answered Yes</th>
<th>Answered No</th>
<th>Percentage of received comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Comments or suggestions you feel will benefit DCC or the networking curriculum?</td>
<td>16</td>
<td>21</td>
<td>43.2%</td>
</tr>
</tbody>
</table>

**SUMMARY**

This chapter has detailed the results of the DCC survey for the Networking Track III curriculum, which included graduates from 2005-2007. The results of the survey indicated that out of the forty graduates selected for this study a total of thirty-seven were available and willing to participate in this survey. This was a response rate of 92.5%. Out of the thirty-seven respondents, 75.6% stated that they were currently employed and 67.9% stated that their position utilized the degree they obtained from DCC in the Networking Track III curriculum. The collection of job titles from the respondents indicated that twenty actually held an IT job title and eight did not, reporting that a total of 71.4% of the graduates had a job title based on IT. Upon analyzing the respondents
answers to the impact their degree played in obtaining their position, it was determined that eighteen stated Hi Impact, seven indicating Moderate Impact, two indicating Neutral, and finally one respondent indicating No Impact. The results of the respondents overall satisfaction of the level of workforce preparation indicated that thirty-one were very satisfied and six were moderately satisfied for a mean of 3.0. The results of asking if the respondents had intentions of returning to DCC for additional training indicated that twenty-three were planning on returning for additional training and fourteen were not for a total percentage planning to return of 62.1%. In the final question the respondents were asked if they would like to provide any comments or suggestions to improve DCC or the networking curriculum. The results showed that sixteen said they would like to make comments and twenty-one stated they did not for a total of received comments being 43.2%. Their comments indicated that they had a sincere desire to see the curriculum and DCC be successful by way of suggesting that additional training opportunities and new advanced course offerings be implemented. Chapter V will present a summary of the study, draw conclusions based upon the collected data, and make recommendations that should be considered to improve or enhance the networking curriculum.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains three primary sections which provide answers to the research goals of this study. The first part of this chapter will be a summarization of the research process, followed by the conclusions that have been drawn from the collected data, and concluding with a list of recommendations for implementing the findings and conducting future research.

SUMMARY

The focus of this study was to determine the graduate job placement rate of the Networking Track III curriculum offered at Danville Community College and what impact did obtaining this training have on their success. The goals of this study were to answer the following three research questions:

1. Did the training provided to the students improve their chances of obtaining employment?
2. Did the percentage of the participants surveyed say they were planning on returning to DCC for additional training?
3. What recommendations can be made from the collection of the data to improve enrollment in Danville Community College’s Networking Track III curriculum?

The overall purpose of this study was to provide information that will prescribe solutions to ensure that the Networking Track III curriculum continues to provide skills and knowledge that can be transferred to the workplace.

The limitations of this study included the following:
• This research study focused only on graduates from Danville Community College.

• Graduates that were surveyed were selected from the alumni database of Networking Track III graduates.

• Graduates from the Microcomputer and Programming curriculums at DCC were not included due to time constraints and lack of proper access to resources.

• Surveyed graduates were from 2005 through 2007 due in part to students leaving the college service region after a period of time.

The population utilized for this study included all the graduates of the DCC Networking Track III curriculum from 2005-2007. The total population used for this study was forty.

To generate the survey instrument, an existing DCC graduate survey was modified to ask questions directly pertaining to the employment status in networking or IT related job fields and the level of utilization their degree has in its requirements. Other questions submitted to the graduate included the impact their degree had in obtaining their current employment, their overall satisfaction with the level of workforce preparedness they received from the program, what plans they have for continuing their education by returning to DCC, and finally what suggestions they would like to offer to benefit the networking program or DCC.

The data collection process used was a telephone questionnaire with a script that introduced the graduate to the survey and encouraged them to participate in the study. Of
the respondents selected for this survey, a total of thirty-seven were available, which indicated a participation of 92.5%.

This study provided a statistical analysis of the respondent data and reported data using number, frequency, and central tendency. The Likert scale was used for all forced choice questions provided to the graduate and the mean was determined. All open-ended responses were recorded based on the comments made by each graduate. Out of the thirty-seven respondents, 43.2% wanted to make comments or suggestions to improve the quality of service at DCC or the Networking Track III curriculum.

CONCLUSIONS

The following conclusions are being drawn to address each of the research goals.

Research Goal 1: Did the training provided to the students improve their chances of obtaining employment?

The survey results from Question 1 showed that 75.6% of the respondents were employed. This would indicate that although jobs in the Southside Virginia area may be hard to find, getting a degree from DCC has made a difference in obtaining employment. The survey results from Question 2 and Question 3 also showed that of the respondents who were employed, 51.3% were actually employed in an IT related field, and 71.4% actually held an IT job title. Therefore, this would indicate that the training provided to the graduates was effective in preparing them for the workforce in general, as well as being effective in having them gainfully employed in the IT networking field.

Research Goal 2: Did the percentage of the participants surveyed say they were planning on returning to DCC for additional training?
Of the thirty-seven respondents, 62.1% stated that they would like to return to DCC for additional training in the future. The survey results from Question 5, which asked “overall how satisfied are you with the workforce preparation you received from DCC”, indicated that thirty-one of the thirty-seven respondents, 83.8%, were very satisfied and six were moderately satisfied. This would explain the high number of respondents who stated they would return to DCC for additional training in the future based on their satisfaction with the courses they have already completed for their degree.

**Research Goal 3: What recommendations can be made from the collection of the data to improve enrollment in Danville Community College’s Networking Track III curriculum?**

The survey results from Question 7 indicated that 43.2% of the graduates stated they would like to make comments or suggestions and understood that they could say anything they wanted, whether it was positive or negative, as long as it was constructive.

In reviewing the survey results, there were several comments on improvements that could be made to the program to make it more appealing and useful, and there were general comments pertaining to the opinion of the training they received. The following are suggestions that were made by the respondents.

1. DCC should add more advanced training courses, so graduates would have a reason to return for more training. These advanced courses could be a continuation of the courses prescribed by the Networking Track III Associate Degree or could emphasize new technologies. A request was also made that the Cisco Certified Network Professional (CCNP) training program be opened again and be offered as a night course.
2. The program should offer more night classes to allow students to enroll who work during the day.

3. The program should increase room sizes for the labs. When there are a lot of students in the lab working at the same time, it becomes very crowded and difficult at times to get to the equipment. By increasing the size of the labs it would allow individuals to possibly work better.

4. The program should offer more transfer courses to four-year universities. This could possibly encourage students to attend DCC to achieve their Associate Degree, then transfer to a university setting allowing credits they obtained from DCC to transfer into the program they are entering.

5. The program should offer field trips to companies who utilize the same equipment the students learn to use in the lab. One respondent stated, “the experience of seeing the equipment being used in a ‘real world’ setting would have possibly provided more encouragement to try harder in classes.”

RECOMMENDATIONS

After an analysis of the surveyed results, and in particular the suggestions and comments made by the respondents, the following recommendations are being made:

- Continue to seek improvements to the current networking curricula and look for new advanced courses that can be offered to entice students to return for additional training. Look for other methods to improve the curriculum by collaborating with industries involving Information Technology to enhance the workforce preparedness already in place.
• Continue to implement follow-up studies of the Networking Track III graduates annually to keep abreast of any changes or updates that may be needed in a timely manner.

• Increase the number of evening courses by collaborating with other faculty members and college administration to determine if the need for additional faculty is in order or if the current faculty needs to re-analyze the course times they now offer to better accommodate night students.

• Discuss with Workforce Services and the counselors at DCC to determine if the support they provide in analyzing a student’s career path are adequate. Upon analysis of these departments make recommendations on ways that can help students make informed decision about their future and their careers.

• Although it was suggested that classroom labs be increased in size, this is not something that is currently possible due to the constraints of the building where the courses are currently taught. However, continuously watching for opportunities to move the networking labs to a larger capacity location should be considered.

• Analyze and interview local industry to determine if field trips can be scheduled to allow students the opportunity to view the technologies they have been trained to use, but in a “real world” environment instead of a classroom. Contact local industry to determine what options are available for allowing such visits to occur.
• Examine all networking courses in an effort to see which ones can be offered as transferable. Contact universities in the DCC service region to determine what options are available and any requirements or guidelines they may have for DCC.
REFERENCES


Appendix A

Scholarship Application

R. James Parrish Certification Scholarship Application

- be a program-placed, full-time or part-time student in the program related to the certification test.
- have completed a minimum of 18-credit hours of course work in a diploma or certificate program or 30-credit hours of course work in an Associate degree program. Your Cumulative Grade Point Average must be at least 2.5.
- have completed the course work related to the certification exam with at least a final grade of B.
- have taken the certification exam.
- submit the application, at least one recommendation from a faculty member, a copy of the receipt showing payment for the exam expenses, and a copy of the exam results.

Return your application to:

Danville Community College
Educational Foundation, Inc.
1008 South Main Street
Danville, VA 24541
(434) 797-8437 or 1-800-560-4291

Educational Foundation, Inc.

R. James Parrish Certification Scholarship Application

Please type or print your responses in ink and answer all questions on this application.

PERSONAL INFORMATION:

Name: ___________________________ SSN: _____________

Mailing Address: ____________________________

State: _____ Zip Code: ______ Telephone: (____) ______

e-mail address: ____________________________

Program of Study: ____________________________

Expected Graduation Date: ____________________________

Number of credit hours you have completed: ______

Cumulative Grade Point Average: ____________________________

Name of course completed which directly relates to the Certification Exam

Grade obtained in this course: ____________________________

Name of Certification Exam: ____________________________

Date completed exam: ____________________________

Did you successfully pass the exam: _____ Yes _____ No

Cost of examination: $____

(The Foundation will pay up to 50% (but not more than $100) of the cost of the certification exam. You must submit a copy of your receipt and a copy of the exam results with this application.)

Faculty Recommendation: (Faculty may attach a printed recommendation)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Appendix B

Networking Track III Curriculum and Certificates
Provided by Danville Community College

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>AST 117</td>
<td>Keyboarding for Computer Usage</td>
</tr>
<tr>
<td>BUS 100</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>ETR 115</td>
<td>D.C. and A.C. Fundamentals</td>
</tr>
<tr>
<td>ITN 115</td>
<td>Intro. to Computer Applications &amp; Concepts</td>
</tr>
<tr>
<td>ITN 154 Cisco I</td>
<td>Networking Fundamentals CISCO</td>
</tr>
<tr>
<td>MTH 121</td>
<td>Fundamentals of Math I or Approved Math Elective</td>
</tr>
<tr>
<td>SDV 100</td>
<td>College Success Skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 111</td>
<td>Accounting I</td>
</tr>
<tr>
<td>ENG 121</td>
<td>Technical Report Writing</td>
</tr>
<tr>
<td>ITN 114</td>
<td>Windows XP Pro</td>
</tr>
<tr>
<td>ITN 150 Cisco II</td>
<td>Introductory Routing CISCO II</td>
</tr>
<tr>
<td>or ITT 112</td>
<td>Visual Basic .NET I Programming</td>
</tr>
<tr>
<td>SPD 100</td>
<td>Principles of Public Speaking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 220</td>
<td>Intro Business Statistics</td>
</tr>
<tr>
<td>HLTPED</td>
<td>Elective</td>
</tr>
<tr>
<td>HUM</td>
<td>Elective</td>
</tr>
<tr>
<td>ITN 115</td>
<td>Windows 2003 Server</td>
</tr>
<tr>
<td>ITN 156 or</td>
<td>Basic Switching and Routing CISCO III</td>
</tr>
<tr>
<td>ITP 222</td>
<td>PC Hardware and OS Architecture</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO 120</td>
<td>Survey of Economics</td>
</tr>
<tr>
<td>ETR 145</td>
<td>PC Repair</td>
</tr>
<tr>
<td>HLTPED</td>
<td>Elective</td>
</tr>
<tr>
<td>ITN 116</td>
<td>Windows 2003 Network Infrastructure Admin.</td>
</tr>
<tr>
<td>ITN 157</td>
<td>WAN Technologies CISCO IV</td>
</tr>
</tbody>
</table>

### Career Studies: Network Technology

**Award:** CERTIFICATE

**Occupational Objective:** The Network Technology Career Studies Certificate Program is designed for individuals employed in the field of information systems who wish to upgrade their skills. It is also designed for individuals with previous occupational or academic experience relating to computing systems who may be contemplating a career change.

The program is structured within the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Lecture Hours</th>
<th>Lab Hours</th>
<th>Course Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 154</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>ITN 150 Cisco</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>ETR 228</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ITN 114</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>ITN 115</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>ITN 116</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Minimum Semester Credit Hours:** 23

### Career Studies: Networking with Cisco

**Award:** CERTIFICATE

**Occupational Objective:** The Networking with Cisco Career Studies Certificate Program is designed to give an understanding of the various components of CISCO networking through the four levels of the CISCO courses. Graduates can use these courses to complete the Cisco Network Administrator (CCNA) examination, update their skills or open new areas of expertise with networking through the use of CISCO.

The program is structured within the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITN 154</td>
<td>4</td>
</tr>
<tr>
<td>ITN 150</td>
<td>4</td>
</tr>
<tr>
<td>ITN 156</td>
<td>4</td>
</tr>
<tr>
<td>ITN 157</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Minimum Semester Credit Hours:** 16
Appendix C

SURVEY FOR RESEARCH STUDY


Purpose: The purpose of this survey is to determine the success rate of graduates of the Networking Track III curriculum and the impact their degree had upon their success.

Directions: Please check the appropriate box for each question. Note: This information will be treated as strictly confidential with answers being combined for group analysis.

Listed below are the sequenced questions asked of the alumni during the survey, which are broken down into a script form where progress is made based on the responses given.

1. Are you currently employed? Yes ☐ No ☐ If yes, proceed to Question 2. If no, proceed to Question 5.

2. Does your current position utilize the degree you obtained from DCC in the Networking Track III curriculum? Yes ☐ No ☐

3. What is your job title?

4. What impact do you feel your degree played in obtaining this position?
   - High Impact
   - Moderate Impact
   - Neutral
   - No Impact
5. Overall, how satisfied are you with the level of workforce preparedness that the DCC Networking program has provided?

| Very Satisfied | Moderately Satisfied | Neutral | Moderately Dissatisfied | Very Dissatisfied |

6. Do you plan to return to DCC to continue your educational training? Yes □ No □

7. Would you like to make any comments or suggestions that you feel will benefit DCC or the Networking Track III curriculum?
May 15, 2008

Hello [insert name]:

One of the best sources of information available to DCC is the feedback that alumni periodically provide on their educational experience and their opinions of the training they received. As one of forty graduates of the Networking Track III curriculum from the past three years, the information you can provide is very valuable and can be used to help implement any changes needed to the current curriculum. Your feedback can also be used to promote the program to future students, justify new course offerings and possibly new equipment where needed.

I would like to strongly encourage you to participate in this study. It will take no longer than five to seven minutes of your time. Any responses you make will remain confidential, and only summarized data for the group of participating alumni as a whole will be published. Your student ID number at the bottom corner of the survey is being used ONLY to assist DCC in determining which alumni responded.

DCC and I would like to thank you for your participation in this survey.

Sincerely,

Steven Carrigan
Assistant Professor: Information Technology
Danville Community College
Appendix E
Thank You for Participating Letter

Sunday, March 30, 2008

[Insert name]
[Insert address]
[Insert city, state, zip]

Dear [insert name]:

Steven Carrigan, Assistant Professor of Information Technology at Danville Community College would like to thank you for your participation in the Networking Track III graduate survey.

Your participation in this survey is vital to helping DCC better serve the needs of this community in addition to helping our students to achieve a higher level of education and hopes of gainful employment.

We hope your experience at DCC has been fulfilling and has met all your educational needs and if you wish to continue your educational training you will think of us.

Wishing you all the best for your future,

Steven Carrigan
Assistant Professor: Information Technology
Danville Community College
1008 South Main Street
Danville, VA 24541
Appendix F
Graduate Comments

Unidentified Graduate Comments: Collected through Email and documented verbatim.

1. The courses were fantastic and I am so glad I decided to enroll. Thanks to the training I received I am now working as an IT Network Admin and I love it. The only suggestion I could make would be to add field trips to companies that utilize the equipment we have been trained to work on. I think that seeing the actual equipment we were learning how to use in a “real world” environment would have helped encourage me to do even better.

2. I learned so much from the courses I have taken from you and look forward to coming back for advanced training once I save up enough money. Although I don’t have a job at this time, I know that with the training I received from DCC that it won’t be long before something comes my way. I really can’t think of any suggestions I could make to improve the program or DCC.

3. Overall the experiences and training I received from DCC was top notch. However, it would be great to see more new courses being offered for advanced students. As a suggestion, I personally would like to see a Network Security course offered.

4. The program was exactly what I was looking for and I know if it were not for the training I would not have the IT job I have today. I definitely will be back for more training in the future. I would like to add one suggestion and that is to offer more classes that are transferable to four year universities.

5. I really enjoyed the classes I took from DCC, but I think I selected the wrong field. It would have been nice to have had someone to talk to about other career choices so that we as students could make a better informed decision on the career that best suits
us. I realize that DCC does offer counseling to assist students in career choices, but I think it needs to be expanded.

6. I would like to have seen more advanced skills taught, but I understand that the class material has to find a medium ground between students who learn fast versus those who do not. I plan to come back in the near future to continue my training.

7. Although I don’t have anything critical to say about the program as a whole, I would like to see more IT courses offered in the networking degree. Mr. Carrigan explained that the Virginia Community College System requires students to take general education courses like English and math, but I wanted to concentrate all my time and money on the courses that would get me the job I needed.

8. I don’t really have any major suggestions that would improve an already great program. However, now that I am finished with my degree I would like to take a course that includes helping students get certified either with Microsoft or Cisco.

9. Thanks to Mr. Carrigan I not only have a degree, but a career too! The only suggestion I can make is please offer the Cisco CCNP training soon; and at night.

10. I really enjoyed the experiences that DCC and the networking curriculum provided to me. The courses were exactly what I needed to become an IT person and I know I will be back for more training in the future. I would like to add that I look forward to returning for additional training when more advanced courses are offered.

11. The reason I am not currently employed is because I am currently working on my B.A. Degree. I thoroughly enjoyed taking classes at DCC and found the professors to be very knowledgeable and helpful. My suggestion for DCC in the area of improvements would be to work on getting more courses transferable to four-year universities.
12. Overall, my experience at DCC was great. I thoroughly enjoyed the classes and feel that I have benefited. I just hope to find a job soon.

13. It was a fantastic experience. I know how hard Mr. Carrigan worked to get me where I am today and I am grateful for everything he did to make sure I succeeded. I can’t think of anything specific that I feel could improve the training, but I would like to see more night courses offered so that those of us who are working during the day can come at night to continue our training.

14. No question that my degree provided me opportunities I may never have been able to achieve without it. I don’t have any improvement suggestions.

15. I just wanted to say thank you to Mr. Carrigan for his faith in me and my abilities. The commitment he put into my success is something I will always remember.

16. I really enjoyed the courses I took at DCC and thanks to you and all my hard work I am now working as a network admin making the money I had always dreamed I would. As for a suggestion for the program I would like to see the labs larger because when you get 20 people in a small confined area it makes it harder to learn and to do the lab work.