Order Number 9419162

Economic development effectiveness of selected Piedmont Triad community colleges

Hennis, Anne R., Ed.D.

The University of North Carolina at Greensboro, 1993

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

ECONOMIC DEVELOPMENT EFFECTIVENESS OF SELECTED PIEDMONT TRIAD COMMUNITY COLLEGES

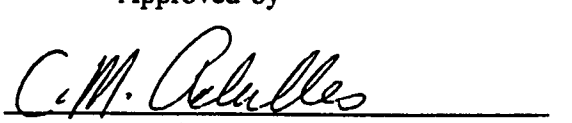
by

Anne R. Hennis

A Dissertation Submitted
to the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Greensboro
1993

Approved by



Dissertation Advisor

HENNIS, ANNE R., Ed.D. Economic Development Effectiveness of Selected Piedmont Triad Community Colleges. (1993) Directed by Dr. Charles Achilles. 223 pp.

The purpose of this study was to examine the effectiveness of selected community colleges in meeting economic development needs including job training and small business development within the Piedmont Triad area, an economic region in Central North Carolina that includes the counties of Alamance, Caswell, Davie, Davidson, Forsyth, Guilford, Randolph, Rockingham, Stokes, Surry, and Yadkin. The region contains a major metropolitan area with the cities of Greensboro, Winston-Salem, High Point, and Burlington; and it has a workforce of 690,000 and a total population of 1.2 million people.

A panel of experts (n=20) from the Department of Commerce, Department of Community Colleges, and from community colleges in North Carolina selected a sample of three community colleges they believed were most effective in addressing the economic development needs of their communities. Through a multiple-case study method each institution was analyzed in light of its community needs, demographics, impact upon the community, organizational structure, and nontraditional economic development programs. At each site, interviews were conducted with community college staff, a major employer, a chamber of commerce or economic development representative, and a city or county government official.

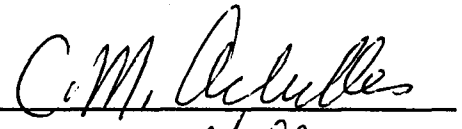
Thirteen institutional indicators and six outcome measures were identified to compare and contrast each community college's involvement in economic development. The three community colleges studied ranked consistently high on three indicators:

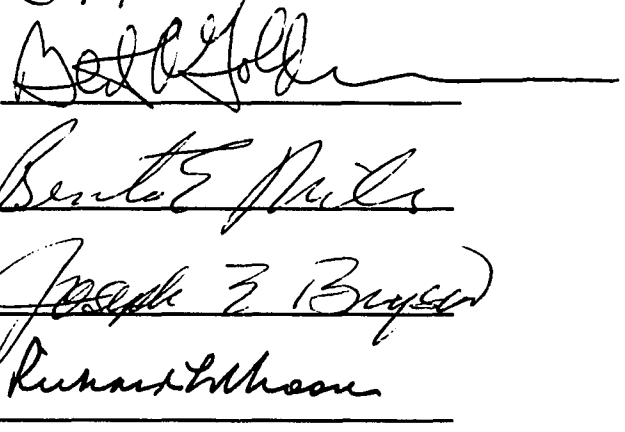
commitment of the president and the college community, linkages with the community, and commitment to community-based education. These institutional indicators were identified as necessary prerequisites to effectiveness in economic development by community colleges. In terms of the six outcome measures, the community colleges studied ranked highest on recruitment and training of new industries.

Each community college was found to be effective in economic development. A grounded theory was developed to explain how causal conditions, phenomena, context, intervening conditions, action/interaction strategies, and consequences are related. Shared vision among the major organizations and agencies involved in economic development and community colleges is essential to develop positive outcomes such as growth of jobs, an increased tax base, diversification of the industrial base, an improved quality of life, and economic stability.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Dissertation Advisor 

Committee Members 

10/21/93
Date of Acceptance by Committee

10/21/93
Date of Final Oral Examination

ACKNOWLEDGEMENTS

The author would like to thank Dr. Charles Achilles for his support and assistance in chairing this dissertation. His suggestions and recommendations improved the final product. Thanks also to Dr. Bert Goldman for his advice and support during my tenure at the University of North Carolina at Greensboro. In addition, special recognition is in order for Dr. Richard Moore, Dr. Benton Miles, and Dr. Joe Bryson, the other committee members sharing their expertise.

I would like to recognize my parents Dr. and Mrs. Swanson Richards who by their example have taught me the meaning and value of community. Special thanks to my husband, Jeffrey Hennis, for his patience and support during this project.

Personal gratitude goes to Dr. Bob Greene, President of Forsyth Technical Community College, for his continual encouragement during my writing. I am also deeply indebted to the Board of Trustees of Forsyth Technical Community College who generously granted my leave of absence to work on this project.

I am grateful to Ms. Glynda Lawrence, Associate Director of Business and Industry Services, with the Department of Community Colleges who read an early draft of this study and provided technical support. Thanks also to Dr. Jean Overton, Director of the N.C. Small Business Network who also provided information.

Lastly, I would like to thank the many people across Piedmont Triad, North Carolina who willingly shared their experiences and thoughts about economic development with me.

TABLE OF CONTENTS

Page

APPROVAL PAGE ii

ACKNOWLEDGEMENTS iii

LIST OF TABLES vii

CHAPTER

I. INTRODUCTION 1

Background and Rationale 1
Problem 2
Purpose 4
Theoretical Basis for the Study 5
Research Method 6
Limitations of the Study 7
Significance of the Study 7
Definitions and Terms 8
Organization of the Study 11

II. REVIEW OF THE LITERATURE 12

Community College History 12
Definitions of Economic Development 16
The Role of the Community College in
Economic Development 19
Community Colleges as Collaborative and
Catalytic Institutions for Economic Development 28
Institutional Effectiveness and Economic Development 32
Planning as a Basis for Effectiveness 34
Change Theory 40

III. METHODOLOGY 46

Multiple–Case Study 46
Research Population 46
Sample Selection 47

Page

Design 47
Research Procedures 47
Instrument Development 48
Data Collection 49
Data Analysis 51
Strengths and Weaknesses of the Methodology 52
The Pilot Study 54
Subsequent Case Studies 54

IV. RESULTS OF THE STUDY 56

Introduction 56
Contextual Variables: National Conditions 56
Southern Conditions 59
North Carolina Demographics and Economic Trends 60
The Piedmont Triad 62
State Programs to Enhance Economic Development 64
The Role of the N.C. Community College System in Economic Development 65
Case One: Piedmont Community College 72
Case Two: Alamance Community College 96
Case Three: Guilford Technical Community College 110
Cross-Case Analysis 129
Institutional Indicators of Effectiveness in Economic Development 130
Institutional Outcomes in Economic Development 144

V. SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FURTHER STUDY 152
Summary 152
Findings 154
Conclusions 159
Grounded Theory 162
Recommendations for Further Study 166

BIBLIOGRAPHY 168

APPENDIX A. PANEL OF EXPERTS 177

Page

APPENDIX B. ECONOMIC DEVELOPMENT SURVEY INSTRUMENT 181

APPENDIX C. CASE STUDY PROTOCOL 185

APPENDIX D. EFFECTIVENESS INDICATORS AND OUTCOMES IN ECONOMIC DEVELOPMENT 198

APPENDIX E. PIEDMONT TRIAD MODEL OF ECONOMIC DEVELOPMENT 217

LIST OF TABLES

TABLE		Page
1	Questionnaire Responses by Respondent	50
2	North Carolina New and Expanding Industry Training	67
3	North Carolina Focused Industrial Training	67
4	North Carolina Small Business Centers	69
5	Case Study Interview Schedule	71
6	Caswell County Employers 1993	86
7	Person County Employers 1993	87
8	Service to Industry at Piedmont Community College	94
9	Participating Firms in the New and Expanding Industries Program at Piedmont Community College	95
10	Alamance County Employers 1993	103
11	Service to Industry at Alamance Community College	108
12	Participating Firms in the New and Expanding Industries Program at Alamance Community College	109
13	Guilford County Employers 1993	120
14	Major New and Expanding Business in Guilford County in 1985-1992	122
15	Service to Industry at Guilford Technical Community College	127
16	Participating Firms in the New and Expanding Industries Program at Guilford Technical Community College	128

LIST OF TABLES (cont'd)

TABLE		Page
17	Excerpts from Interviews with Presidents of Piedmont Triad Community Colleges	131
18	Excerpts from Missions of Piedmont Triad Community Colleges	132
19	Components of the Composite Ranking of Economic Development	149
20	Composite Ranking of Economic Development	151
21	Institutional Indicators of Effectiveness in Economic Development	155
22	Institutional Outcomes in Economic Development	156

CHAPTER I

INTRODUCTION

Background and Rationale

The community college movement began to gain prominence in the United States in the early 1900s. One primary reason for the growth of community colleges was the need to develop a trained workforce for the country's industries. President Truman's 1947 Commission on Higher Education proposed that high school graduates could benefit from two additional years of education; this continued to spur the growth of community colleges. Today most community colleges identify five primary curriculum purposes: (a) college transfer, (b) vocational-technical education, (c) continuing education, (d) remedial education, and (e) community service (Brawer and Cohen, 1989).

Within the United States and its territories, there are approximately 1,200 community colleges (Carnevale, Gainer, Villet, and Holland, 1990). Most are conveniently located and easily accessible to the citizens residing in surrounding areas. Traditionally, the role of the community colleges has been to provide training for entry level workers and postsecondary education for students wishing to transfer to four-year colleges and universities. In recent years, faculty and administrators at community colleges have been quick to expand their roles in providing training and retraining both for employers and for employees. Community college leaders have worked with business and industry training to provide skills updating, in addition to retraining employees who have been displaced. According to Carnevale et al., "In fact, of all educational

institutions community and junior colleges have taken the most aggressive, directed, and progressive approaches to customized training and are particularly responsive to business, industry, and community needs" (p. 20).

Since its early beginnings the North Carolina Community College System (NCCCS) has been closely associated with the state's economic development. Through its community colleges, North Carolina offered the country's first customized training program designed to provide start-up training for new manufacturing and service industries entering the state or companies who were expanding within the state. To enhance economic growth further, the system began a network of Cooperative Skills Training Centers (renamed Focused Industrial Training Centers) in 1981-82 to provide customized skills training to existing manufacturing industries. In 1984 the NCCCS began a network of Small Business Centers to promote the development of small businesses and entrepreneurial activity. According to Joseph E. Sturdivant, Director of North Carolina's New and Expanding Industries program, after 30 years the state's program had trained approximately 160,000 workers for more than 1,400 new or expanding industries. On an annual basis the program served approximately 8,000 people employed in 100 North Carolina companies (Wiggs, 1989).

Problem

New technology is rapidly accelerating the pace of change in U.S. industries, altering the very nature of work. Most U.S. workers will change careers three times and jobs six or seven times during the course of their careers. The effects of international trade are also affecting the U.S. economy. Approximately 70 percent of U.S. industries

are now impacted from competition abroad and about 25 percent of the Gross Domestic Product is internationally traded (Choate, 1986).

As the pace of change in technology has increased, the skills of the workforce have become obsolete in five to ten years. If the U.S. is to maintain its competitive position, continuous skills upgrading of the workforce will be increasingly important. Braden (1987-88) identified five trends impacting the U.S. workforce: (a) manufacturing capability in lesser developed countries, (b) industry targeting for production capability improvements by other countries, (c) use of advanced technologies by other competitive nations, (d) demographic changes, and (e) changing beliefs and values of the workforce.

Four external pressures are influencing faculty and administrators at colleges and universities to become involved in economic development: (a) industry needs, (b) state government needs, (c) community needs, and (d) societal pressures (Chmura, 1986). The industrial economy of the past is being replaced by a new information-based economy, and much of the growth in U.S. jobs is occurring in small and medium-sized firms. In the current economic environment, new styles of management, modern technology, and a skilled workforce are important factors in gaining and maintaining a competitive edge.

Access to low-wage labor had been a regional economic development advantage in the past, but today economic developers must show that a region has access to technology, a skilled workforce, capital, and entrepreneurial management to remain competitive in economic development. Institutions of higher education and particularly community colleges working along with other organizations can contribute significantly to regional economic development efforts. The literature on community colleges and

economic development is filled with examples of colleges that have implemented economic development programs; however, almost no research has been conducted to evaluate the effectiveness of these programs.

Purpose

The purpose of this study was to examine the effectiveness of selected Piedmont Triad community colleges in meeting job-training needs within the Piedmont Triad area. The Piedmont Triad is defined as an economic region in Central North Carolina that includes the counties of: Alamance, Caswell, Davidson, Davie, Forsyth, Guilford, Randolph, Rockingham, Stokes, Surry, and Yadkin. The region contains a major metropolitan area with the cities of Greensboro, Winston-Salem, High Point, and Burlington. The area is the second largest metropolitan area in the state, with a workforce of 690,000 and a total population of 1.2 million people (Piedmont Triad Regional Data Center, 1992).

The study focused on the following questions:

1. How effectively are selected Piedmont Triad community colleges meeting the needs for economic development, workforce preparedness, and job training through nontraditional, economic development programs such as Focused Industrial Training, New and Expanding Industry Training, and Small Business Centers?
2. How can Piedmont Triad community colleges improve economic development, workforce preparedness, and job training to meet the needs of business and industry more effectively and to prepare employees for a changing economy?

Theoretical Basis for the Study

Linkages among business and industry and higher education improve the quality and competitiveness of both institutions. Over the last 20 years, the economic environment has changed rapidly; U.S. industry has found it increasingly difficult to compete in the new global economy. Frequently, community college faculty and administrators are working with management to provide human resource development, customized training, technology transfer, technical assistance, new business development, and other programs. In the future, community colleges will be called upon more often to assist in the economic development of their regions. Training for the workforce and the continual updating of skills must become increasingly significant for individuals, business and industries and the nation as a whole (Peters, 1987). The workforce of the country should be viewed as an asset composed of valuable skills whose worth will increase or decrease depending upon an investment made in the maintenance and improvement of skills. Peters believed that the value added component of products and services would occur most often through the efforts of workers, rather than through other means such as automation.

Unfortunately there is not a widespread belief that workers must continually update their skills while they remain in the labor force (Johnston, 1987). Education and training investments have been frequently limited to upper and middle management, with little effort expended on other workers. Lifelong education that encourages employees to retrain and update their job skills should become a national priority.

Research Method

The researcher established a panel of experts composed of 20 individuals from the North Carolina Department of Commerce, the North Carolina Department of Community Colleges, and North Carolina community colleges with knowledge of the effectiveness of Piedmont Triad community colleges. The panel of experts was asked to select from the population of eight community colleges in the Piedmont Triad, three community colleges that they believed were most effective in addressing the economic development needs of their communities. The panel of experts was also asked to identify measures of effectiveness that they considered in their selection and that could be used to evaluate economic development activities. The researcher's own institution was chosen as one of the top three, it was disregarded as a part of the sample for the study, and a fourth institution was selected as a part of the sample.

A multiple-case study method was used to analyze each institution in light of its community needs, demographics, impact upon the community, organizational structure, and nontraditional economic development programs. A community profile was developed for each institution consisting of information about its history, size, major employers, population and demographics, the labor force, and general characteristics. The three institutions chosen for the case studies were compared so the researcher could study similarities and differences among them. Interviews were also conducted with the President, lead administrators working with business and industry, Director of Focused Industrial Training, and Small Business Center Director at each of the three community colleges who were working with business and industry.

Limitations of the Study

Through the case–study method, the researcher studied the economic development activities of three community colleges located in a compact, geographic area of North Carolina. However, these colleges may not be typical of other community colleges in North Carolina or of others located throughout the nation. As a result, the findings may have limited application to other community colleges that have economic development programs. The Piedmont region is dominated by textiles, tobacco, apparel, and furniture companies and may not reflect employment trends occurring in other parts of the country. Because the sample of community colleges was limited in number, the generalizability of the results may also be restricted.

Significance of the Study

As the nation's economy continues to change rapidly, employers and employees have begun to realize the need for constant training to keep their skills updated and to introduce new technology that enables firms to become more productive. Colleges have begun to expand the range and number of programs and activities that could be classified under the category of economic development. As budgets have been cut in other areas, funds allocated for customized training have continued to increase. The study focused upon the impact of nontraditional economic development programs to determine the effectiveness of these programs in meeting the needs of their communities.

During 1993, the Piedmont Triad region was cited by the magazine, Site Selection and Industrial Development, as the second most frequently chosen metropolitan area for new industrial plants in the nation. (Charlotte, N.C. was selected as the most frequently

chosen location.) This study should assist community college leaders to recognize the importance of their efforts in economic development and the impact that a community college can have upon a community and its employment opportunities.

Definitions and Terms

Cole and Kingry (1985) formulated a definition of **economic development** drawing from previous studies performed by the American Vocational Association (Paul and Carlos, 1981) and Winnie, an economist (1977). The authors defined economic development as:

> a set of planned interventions within the normal economic process designed to improve the duration and stability of individual employment, to increase their (collective) income, and to maintain citizen satisfaction with the quality of life, while avoiding detrimental impacts on the environment (p. 11).

The primary role of the community college in economic development has been to provide educational training for the citizens of the community. Among the planned interventions provided by community colleges are: pre-employment training, job-specific training, skills upgrading, and entrepreneurship education.

Katsinas and Lacey (1989) developed a model that defines both **traditional** and **nontraditional involvement** of colleges in economic development. Administrators may classify economic development activities as traditional or nontraditional by examining 12 factors: accountability, accreditation, evaluation, locus of control, program development, payment for programs, teachers, participants, location, length of programs, learning objectives, and learning outcomes. **Traditional** community college economic

development programs are most frequently internally controlled by the college and culminate in the completion of an associate degree, certificate, or diploma. **Nontraditional** community college economic development programs are short-term in nature and control of the program is usually external to the college.

The following definitions are provided for clarification of programs offered throughout the N.C. Community College System:

Cooperative Skill Training programs may combine on-the-job training with classroom instruction. This program would not require the formal indenturing procedure and would combine pre-employment training with an apprenticeship-type program (North Carolina Department of Community Colleges [NCDCC], 1990).

Contract training is defined as "firm-specific skill training for individual firms--a form of training which is more responsive to a firm's needs than are general vocational programs" (Grubb, Lynch, and Palmer, 1990, p. 2)

Customized training "differs from conventional vocational education in preparing students for a specific employer rather than preparing them for the labor market in general, through the extent of 'customization'--or content developed for the particular employers varies considerably and customized training usually differs from other vocational programs in the particulars of duration, intensity, location, funding, and procedures for selecting students" (Grubb, 1989, p. 9).

In-plant training is defined as an occupational extension course that meets the following conditions:

(a) Training occurs in the facilities where a business or industry normally operates;

(b) Enrollment is limited to the employees of the business or industry where the training takes place. Training may be provided to develop entry-level skills or for the purpose of retraining due to changing technology;

(c) The employee receives training during the businesses' working hours in his or her work area; and

(d) Training is designed to teach production and/or job-related skills. (NCDCC, 1990).

New and Expanding Industry programs provide training for new industries that are moving into the state and also for existing industries undergoing expansions. The purpose of the New and Expanding Industry program is to provide skills training for new employees. (NCDCC, 1990). In order to qualify for training through the New and Expanding Industry Program, an employer must create a minimum of 12 new jobs.

Occupational Extension courses are provided for individuals who need work-related education, skills upgrading, or retraining (NCDCC, 1990).

Small Business Centers in the North Carolina Community College System provide instructional programs and services that lead to increases in the success rate and number of small businesses in North Carolina. The purpose of the Center is to provide small business owners and prospective owners with current information, educational programs, training, counseling or referral, and other technical or managerial information (SBC Guidelines, 1988-89).

Organization of the Study

The study consists of five chapters. Chapter I includes an introduction, the problem, the purpose, theoretical basis of the study, the research method, limitations of the study, significance of the study, and definitions and terms. Chapter II consists of the review of the research and literature pertinent to this study. Chapter III describes the methodology and research procedures used for the study. Chapter IV includes the findings of the study of effectiveness of economic development in the three Piedmont Triad community colleges. Chapter V presents the summary, findings, conclusions, and recommendations for further study.

CHAPTER II

REVIEW OF THE LITERATURE

Community College History

When it began in the late 1800s, the junior college was an innovative and a new educational institution. Leading the junior college movement were presidents from some of the country's most prestigious universities: Henry Tappan, University of Michigan; Nicholas Murray Butler, Columbia; David Starr Jordan, Stanford; and William Rainey Harper, Chicago. The mission and purpose of the junior college differed from the missions of already established four-year colleges and universities. Junior colleges provided vocational training and college preparatory courses, and a method of sorting the more qualified students from the less capable students.

In 1892, William Rainey Harper, President of the University of Chicago, separated the university into two colleges: a Junior College and a Senior College. The freshman and sophomore years constituted the Junior College and the junior and senior years made up the Senior College. The first associate degree was conferred by the University of Chicago in 1900. Harper was one of several college presidents who sought to purge their universities of lesser qualified students leaving the Senior College for only the most talented and intellectually gifted students (Brint and Karabel, 1989).

Thorton (1972) identified four periods of development in community college history:

(a) 1850-1920. Creation of the junior college as an institution offering the associate degree,

(b) 1920-1945. Acceptance of terminal and semiprofessional education through the founding of the American Association of Junior Colleges in 1920,

(c) 1945-1965. Accent on adult education and service to the community, along with increased transfer enrollments, and

(d) 1965 and Beyond. Emphasis on the "Open Door Concept" and service to the total community.

The fifth phase in community college development may be referred to as the period of partnership growth between community colleges and corporations. American businesses are competing in an international marketplace that is no longer dominated by American products. Faced with decreasing enrollments and declining budgets, community college administrators have been eager to explore new roles and respond to the educational needs of business and industry. One proposed solution to improving the nation's competitiveness has been to increase the education and training offered to the workforce (Deegan, 1988).

In the early twentieth century, community college founders focused primarily on the transfer function because many community colleges were linked with universities and colleges through their founding. The philosophy of vocationalism developed as a result of the realization that not all college students would be able to complete four-year college degrees. Therefore the early leaders of community colleges replaced the concept of equal education with that of differentiated education. Terminal vocational education programs

were developed to satisfy the need for occupational education and to develop students' marketable job skills (Brint and Karabel, 1989).

Occupational education in community colleges grew as a result of the Smith-Hughes Act and state vocational education agencies created through federal legislation. High unemployment during the depression, 1929-37, also contributed to the rise of occupational education because students realized that additional postsecondary education would improve their likelihood of employment (Thorton, 1972). The passage of the Servicemen's Readjustment Act in the mid 1940s was a significant contribution to the development of higher education (Parnell, 1985). As adult veterans were encouraged to return to school and to reinvest in their educations there was an influx of new students. The 1947 President's Commission on Higher Education formed during the Truman Administration stressed the value of higher education for all citizens. Many communities across the nation founded their own community colleges after the formation of the Commission on Higher Education. The Commission urged that the junior colleges be renamed as community colleges, to reflect their increased role in higher education (Brawer and Cohen, 1989). By renaming the institutions community colleges the Commission reflected the belief that community colleges should serve the total population as well as the community itself (Brint and Karabel, 1989).

Before 1970, students sought completion of the baccalaureate degree and the dignity that accompanied its completion. Two models--the consumer-choice model and the business-domination model--were developed to explain the transformation of the community college from an institution emphasizing college transfer to an institution

stressing vocational education. The consumer-choice model implies that students receive the type of instructional programs that they demand. Consumers shape the curriculum through their preferences. For example, during the 1970s some liberal arts graduates from four-year institutions were unable to find jobs, and vocational education became more prominent in the community college curriculum. The business-domination model suggests that the community college curriculum is shaped by a powerful business lobby with an interest in recruiting a trained workforce. This model implies that business and industry influence community colleges through their involvement in boards of trustees, advisory committees, and donations. The influencing factor in the consumer-choice model is the individual, but in the business-domination model the influencing factor is the social class. Business has an opportunity to limit the curriculum, training mid-level technicians. Both models suggest the ways that curricula of community colleges have been shaped in the formative years (Brint and Karabel, 1989).

In the 1970s vocational enrollments in community colleges began to climb as a result of increased support from government, foundations, business, and changing economic conditions. Enrollments of traditional college-aged students began to decline and college personnel recruited more part-time, older, predominately female, economically disadvantaged students. As these changes occurred, community college administrators realized that the fate of their institutions was invariably linked with the economic prosperity of their regions. In many states leaders began to emphasize customized training programs to attract and retain business investment in their states. (Brint and Karabel, 1989). Between 1982 and 1992, one of the most important developments in

higher education was a greater cooperation between business and education. With declines in enrollments and budgets, postsecondary institutions are moving outside their traditional educational roles (Deegan, 1988). Business and industry are turning to education and to community colleges in particular for assistance with their training and educational needs.

Definitions of Economic Development

As economic conditions worsened and competitive pressures grew during the late 1980s and early 1990s; companies downsized, workers lost their jobs, and industrial plants shut down or moved overseas. Linkages between economic development and education took on a new significance in cities and towns across America. Leaders in communities turned to economic and educational development programs to revitalize their communities. Kingry and Cole (1985) constructed a definition of the term economic development by combining definitions originated by the American Vocational Association (Paul and Carlos, 1981) and the economist Winnie (1977). Their definition states:

> Economic development is a set of planned interventions within the normal economic process designed to improve the duration and stability of individual employment to increase their (collective) income, and to maintain citizen satisfaction with the quality of life, while avoiding detrimental impacts on the environment (p. 11).

This definition emphasizes the process of planning to generate an improvement of employment opportunities for individuals culminating in higher income. The ultimate object of the process is an increase in collective income for a region or municipality.

The process of economic development refers to "organized, planned, and cooperative efforts between the public and private sectors designed to improve the economic conditions in the community and state" (Sanders, 1988, p. 117). This definition of economic development is based upon three suppositions:

(a) Economic development is process-oriented and promotes the recruitment, expansion, and retention of business and industry culminating in new job growth;

(b) Economic development occurs through organized and collaborative efforts among representatives of education, government, business and industry, and labor; and

(c) The economic development process demands that those involved in the activity have clearly defined tasks (Sanders, 1988).

The definition of economic development varies according to an individual's or an organization's frame of reference. SRI International (formerly Stanford Research Institute 1986) states that:

> Economic development means different things to different people. To some it means helping a failing industry to become more competitive. To others it may be recruiting a firm to expand local employment and strengthen the tax base. It can mean developing the capacity of a neighborhood group to generate new enterprises. Increasingly it connotes high-technology development, or promoting small business and entrepreneurial start-up, or commercializing new technologies. *Broadly economic development is a process of innovation that increases the capacity of individuals and organizations to produce goods and services and thereby create wealth.* This, in turn, can lead to jobs, income, and a tax base for communities, states, and regions (p. x).

Economic development programs range from the most simplistic efforts to sophisticated and comprehensive programs with large budgets and substantial resources. The major intent of these efforts is to influence individuals who make location and investment decisions to view their communities favorably (Moriarty, 1980). The three major aims of the economic development programs are workforce development, job creation, and community development (Leach and Sanders, 1983 cited in Sanders, 1988).

Education and economic development function within the political environment and both must compete for resources. Community economic development programs have tended to be politically popular when positive results were achievable. The primary benefit has been to bring job growth to a region. The area benefits from additional payroll expenditures, increased property values, lower unemployment, larger tax receipts, improved prosperity for local business, and greater popularity for the politicians who supported the development programs (Bartik, 1991). Economic development is not without its critics. Grubb and Stern (1989) point out that:

> economic development has become the focus of a sacred quest, promising to generate benefits for all citizens and political support for education, the term has been widely and indiscriminately used as a promotional phrase or rhetorical flourish. Unfortunately this widespread use has tended to empty the phrase of any specific content. It is often difficult to know exactly what economic development means, or why any particular program might enhance economic development; or what difference for public policies it makes to specify economic development as a goal, or what the role of education might be within general policies designed to promote economic development (p. 3).

The authors suggest that there are no real data or proof to indicate that economic development programs have succeeded in achieving the intended results.

Other critics submit the "zero sum game argument" which implies that economic development efforts do not lead to net gains in job growth. They suggest that in spite of development efforts, total employment within the United States remains unchanged, that jobs only shift from one region of the country to another. The gains from one region when matched against the losses from another region are equalized and no net change occurs (Bartik, 1991).

The Role of the Community College in Economic Development

Research involving community colleges and economic development is limited primarily to survey research providing descriptive information on the level of involvement of community colleges in economic development activity. Survey research has been completed by the National Council for Occupational Education [NCOE], 1985; Warford, 1989; Grubb, Lynch and Palmer, 1989; and Doucette, 1993. Cantor (1991) completed a qualitative research study of five sites throughout the nation participating in collaborative arrangements that involved economic development organizations and community colleges. The National Alliance of Community and Technical Colleges and the National Center for Research in Vocational Education (1987) worked together to develop a model of institutional effectiveness that included economic development. Other writings in the field of economic development and community colleges have been limited to theory exploration and theory building.

Community colleges have assisted the business community indirectly by developing students for employment. In turn the business constituency has influenced the community college curriculum through tuition reimbursement programs, service on

advisory committees, and participation in cooperative education and apprenticeship programs. In the last 15 years, community colleges have expanded their mission statements to include their role in economic development and the business community has become a major constituency. Community college leaders are working with business and community leaders to attract new firms to their regions, assist existing businesses, and provide technological information about new production methods and equipment (Palmer, 1990).

One mission of community colleges and technical institutes has been to provide a skilled workforce for the employers in the communities they serve. Vocational education has been supported due to its direct link with business and industry. Proponents of vocational education have suggested that it would solve social problems such as unemployment, slow economic growth, and competitive pressures.

North Carolina is recognized as the first state to intertwine vocational education and economic development within its community college system (Grubb and Stern, 1989). North Carolina's community college system was shaped by Governor Luther Hodges who conceived of a comprehensive system of technical training schools. Hodges instituted job-specific training offered through the community colleges and integrated the program with the state's efforts in industrial recruiting. In 1957 seven Industrial Education Centers were established; in 1958, 11 additional centers were added; and plans were made for another 20. In 1963 the junior colleges and Industrial Education Centers were merged and a comprehensive community college system was created (Rosenfield, 1992).

Following N.C.'s lead, all southern states now offer some type of customized training for new industry locating in their states as a part of their industrial recruitment strategy. A strong network of community and technical colleges is located throughout the southern region of the United States (Rosenfield, 1992). During the 1980s legislators in nearly every state enacted some type of job training related to economic development and many state systems emphasized customized training (Grubb and Stern, 1989).

The American Association of Community and Junior Colleges (AACJC) identified the following ways that community colleges were involved in economic development: (a) business and industry recruitment, (b) business development, (c) "one-stop" business assistance, (d) operation of business incubators, (e) entrepreneurship education, (f) management education, (g) assistance with procurement and grants, (h) customized training, (i) international education, (j) marketing education and assistance, and (k) provision of statistical and data reports. Palmer (1990) identified instructional roles of community colleges including customization and non-vocational courses and also four primary non-instructional roles of community colleges in relationship to business and industry: (a) assessment of employees skills, (b) assistance in contract procurement for businesses competing for state and federal contracts, (c) technology transfer, and (d) consultation for small business. The roles of community colleges in economic development are diverse and numerous, largely dependent upon the context of the community in which the college is operating (Murphy, 1989).

Emery (1988) recognized three roles of the community college educator working with economic development programs: (a) coordinating instructional programs related to

an institution's mission in economic development, (b) collaborating among community agencies engaged in economic development, and (c) developing a full range of resources which can be delivered through a community college. Maxwell (1990) believed that community colleges should establish economic development centers so that business and industry could in effect have "one-stop shopping." Business and industry would have one point of contact where their needs might be met for any type of instructional or support service.

The benefits of involvement in economic development for community colleges are both direct and indirect: (a) preservation and growth of the tax base, (b) retention and growth of jobs, (c) increased enrollment of students in traditional and nontraditional programs, (d) stronger linkages with community organizations, (e) improved awareness of labor and technology trends occurring in the service area, (f) opportunities for student and faculty internships, (g) awareness of industry specific training needs, (h) promotion of the concept of lifelong education, and (i) development of collaborative partnerships among business, government, labor, and community organizations and agencies (Sanders, 1988).

In 1985-86 the NCOE, an affiliate of AACJC, established a Task Force on the Role of the Community Colleges in Economic Development. The Task Force developed a questionnaire and sponsored a survey to determine how deeply community and junior colleges were engaged in economic development activities. The questionnaire was mailed to over 1100 community colleges, with a 37.8 percent rate of return.

Over one-third of the respondents referred to economic development in their mission statements. Forty-seven percent indicated that their community college employed an economic development specialist. Over three-quarters of the responding institutions indicated that they promoted faculty involvement in economic development. Established linkages with other economic development agencies such as chambers of commerce or local governmental agencies were in place in 95 percent of the responding institutions. Seventy percent indicated that their institutions provided start-up training for new or expanding industries in their service area. Community colleges located in states with state-wide programs aimed at economic development were more actively engaged in economic development activities than were community colleges in states without state–wide initiatives. The Task Force concluded that:

> the college that assesses its role in local economic growth and development, establishes related institutional objectives, designates the responsibility for coordinating the implementation of economic development activities, appropriates the financial support of the process, and provides in-service training for faculty and staff on the subject is making history in the community college movement (p. 102).

Frequently community colleges are linked with businesses and industries through contract training programs and customized training programs. Contract training is "firm specific skill training for individual firms—a form of training which is more responsive to a firm's needs than are general vocational programs" (Grubb, Lynch and Palmer, 1990, p. 2). Customized training usually "differs from other vocational programs in the

particulars of duration, intensity, location, funding, and procedures for selecting students" (Grubb, 1989, p. 9).

Funding mechanisms for contract training vary from credit formula funding to non-credit adult education support. Some states (n=18) require that companies benefitting from firm-specific training contribute up to 50 percent of the cost of the training. Delaware, Idaho, Indiana, Kansas, Kentucky, Massachusetts, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, Ohio, Oregon, South Dakota, Tennessee, Virginia, Wisconsin, and Wyoming require contributions from firms requesting firm-specific training (Grubb, Lynch, and Palmer, 1990).

Warford (1989) completed a doctoral study of contract training programs in institutions belonging to the League of Innovation, a group of 16 community college districts throughout the nation. He found that contract training programs expanded rapidly from 1980-1988, with enrollments growing from 5,000 to 68,000 students at League institutions. He established a panel of experts and used the Delphi technique to reach consensus on the following concepts: (a) Contract training programs form bonds between community colleges and employers, (b) Accomplishment of the community college mission is a major justification for colleges to participate in contract training, and (c) Participation in contract training is a major function of community colleges that benefits employers, students, and the college itself.

In 1989; Grubb, Lynch, and Palmer surveyed 246 colleges selected randomly from the membership rolls of AACJC and stratified by enrollment and location, producing nine categories. Ninety-four percent of the respondents said that they had offered at least one

contract training course during the 1988-89 fiscal year. Job-specific skills training courses were offered by 93 percent of the responding colleges, and a median number of 39 contract courses were offered at the institutions. The range of job-specific courses spanned from one to 550 courses, indicating a large divergence among institutions. The authors concluded that contract training involves much smaller numbers of students when compared with credit curriculum programs. Of the total courses offered, 48 percent were customized to meet specialized needs. The authors concluded that urban colleges customized job-specific skills training programs more frequently than did rural institutions. About one-third of the colleges returning the survey indicated that they provided other economic development activities that could be classified as services.

The League for Innovation in the Community College sponsored a survey of all two-year colleges in the U.S. during the fall of 1992 to determine the volume and types of training provided by the colleges for the employees of business, industry, labor organizations, and government agencies. Seventy-three percent of the 1,042 two-year colleges surveyed returned the questionnaire. Only four percent of the respondents indicated that they did not provide workforce training for employees. Ten to 15 percent of respondents indicated that their institutions were heavily involved in workforce training. The large majority of workforce training done by the colleges was for firms employing fewer than 500 workers. The most frequently offered training for business, industry, labor, and government was job-specific training, computer training, supervisory and management training, and workplace literacy. Approximately 90 percent of community colleges organized workforce training programs through a continuing

education division. Eighty-five percent of the respondents believed that they were effectively meeting the training needs of the regions. The major barriers to delivery of workforce training were insufficient budgets, lack of funding for training by employers, low recognition of the community college training capability, lack of qualified instructors, and insufficient support for curriculum development of training programs (Doucette, 1993).

The amount of information on contract training available from community colleges is limited. Little evaluation information regarding the results of contract training is available from either employers or employees. Grubb, Lynch, and Palmer (1991) concluded that "the role of contract training in economic development remains completely unclear" (p. 63).

The most frequently cited problems in contract training programs are: (a) a shortage of qualified instructors, (b) a lack of adequate facilities and equipment for training, (c) scheduling problems related to work schedules, (d) unenthusiastic institutional support for contract training, (e) excessive preparation time required for course development, and (f) inability to market contract training programs effectively (Deegan and Drisko, 1985). Customized training programs are generally short-term and job-specific. The question arises, how effective are short-term programs in meeting an employer's long-term training needs? If the training is something the firm would have engaged in without the involvement of the community college, the program is not contributing to the overall advancement of worker training (Grubb, Lynch, and Palmer, 1990).

The advantages to community colleges participating in contract and/or customized training are: (a) improved linkages with business and industry, (b) fulfillment of the community college mission by providing training for business and industry, (c) increased community exposure, (d) improved communication between college faculty and business leaders, and (e) improved opportunities for media coverage (Deegan and Drisko, 1985). Linkages that occur between employers and postsecondary institutions engaged in customized and contract training provide an added avenue of communication that might not occur through the operation of traditional vocational education programs. Placement rates of community college students may also improve. Management of small and medium-sized firms benefits particularly from an association with community colleges that are equipped to provide training at a lower cost than the firms themselves (Grubb, 1989). Community colleges offering contract training present the image of adaptable, flexible, and inventive institutions working to meet the needs of employers (Grubb, Lynch, and Palmer, 1990).

Outcomes achieved through customized and contract training programs are largely unsubstantiated. Many postsecondary institutions and employers are pleased with their programs, but successful outcomes are difficult to demonstrate. Little documentation exists regarding successful outcomes such as "placement rates, earnings, long-term employment of participants or changes in the firms' productivity" (Grubb, 1989, p. 23).

Some educators have proposed that the employers' level of satisfaction as a client should be used as one measure of success of customized programs. Grubb argues that measures other than client satisfaction should be used to gauge the effectiveness of

customized training programs. He suggests that evaluations should be developed that will measure the effectiveness of the programs, for diverse groups, under different economic conditions (Grubb, 1989).

Another role of community colleges in economic development is to provide assistance to small businesses through Small Business Assistance Centers. These Centers were funded through Congressional legislation, P.L. 86-302 in 1980, which was amended by P.L. 98-395 in 1984 (Carmichael, 1991). In 1983, the state of Oregon initiated the nation's first network of Small Business Development Centers. The network was modeled after an effective pilot center operating in Eugene, Oregon, at Lane Community College. Oregon community colleges were able to combine federal funds and state funds to operate their network of centers (Melville and Chmura, 1991). In their 1988-89 survey of community colleges Lynch, Palmer, and Grubb (1989) found that of the colleges that they surveyed, one-third promoted services to small business.

Community Colleges as Collaborative and Catalytic Institutions for Economic Development

The literature on community colleges and economic development refers to community colleges engaged in economic development as catalysts and collaborators. Early community college involvement in economic development began with the sponsorship of single events such as a customized training program for a single industry or as a single class for a group of business owners. Some community colleges have strengthened their involvement and progressed to long-term commitments to economic development (Burger, 1988; Michelich 1988; Charner and Gold, 1987; Kingry and Cole,

1985). Community colleges as collaborators operate in concert with business, labor, and other community colleges in partnership arrangements to promote economic development. Community colleges as catalysts act as a major impetus of community economic development activities in their communities.

Edmund Gleazer (1980) stated that the community college could serve as a "nexus of a community learning system, relating organizations into a complex sufficient to respond to the population learning needs" (p. 10). Community colleges with linkages to other public and private organizations derive strength from these organizations and connections. Community colleges benefit from ties with business organizations through better placement rates for graduates, programs that are better aligned to service-area needs and from donations of equipment. Community colleges benefit from the alignment by improving their public image and their instructional programs (Alfred, 1988).

The Task Force on the Role of Community Colleges in Economic Development used the word catalytic to describe activities instituted by community colleges to contribute to business and industry development. The Task Force defined catalytic activities to be: (a) linkages with state and local organizations to provide assistance for new and expanding industry, (b) technical support to business and industry for the implementation of managerial functions, and (c) implementation of customized and tailored training specific to entry-level occupations and individual jobs (TFRCCED, 1988).

Some community colleges have expanded beyond their primary roles to secondary roles of providing support service for business and industry in addition to instructional services. Community colleges are sometimes the primary supporter of economic

development in their service areas, working to recruit new business and industry, retain and expand existing industry, and developing the competitive advantage of the industries and businesses within their regions. In these instances, community colleges have moved beyond the primary purpose of providing educational services to tertiary roles of promoting community development and revitalization and acting as catalysts (Palmer, 1990).

Sanders (1988) believed that the Illinois community colleges functioned as catalysts in the economic development process. If the economic development process were to succeed, the groups involved had to exhibit commitment, communication, and coordination. The community college president must be committed to the economic development process and its implementation. Ideally the economic development officer should report directly to the president, signalling to the community the president's commitment. Communication between and among business, industry, labor, government, and education must take place to move the process forward. Coordination among community groups can speed the economic development process. Commitment, communication, and coordination must occur within and among all the groups involved for the economic development process to occur.

Collaborative efforts among persons from community colleges and other community organizations have led to long-term sustained efforts for the community in economic development. The three systems of job training, economic development, and education have traditionally operated as parallel systems. Cantor (1991) recommends improving the effectiveness of the systems by integrating the three components into a

single interorganizational system. Collaboration occurs when local government, Private Industry Councils (PIC), private industry, and the educational system work together in a coordinated system to achieve jointly established outcomes. Cantor identified and analyzed five sites throughout the nation where two or more agencies collaborated to provide small business assistance, sustained job creation, and placement of Job Training Partnership Act (JTPA) recipients. Cantor's first hypothesis, that new organizations were formed to integrate job training and economic development, was supported. At four of the five sites a new collaborating organization was formed. The sites consisted of a central organization with other collaborating organizations clustered around it. An economic development agency or chamber of commerce could serve as the core organization with the community college acting as a collaborating organization. Cantor (1991) concluded that: (a) Interorganizational collaborative efforts produce long-term results which could be reproduced at other community college sites, (b) The informal networks are more important than formal networks, and (c) Collaborative arrangements affect outcomes, but specific outcomes are not possible to predict.

Cantor (1991) developed a linkage model, a planning model, and a planning and development model. These models show that collaborative efforts produce short-term outcomes but they lead to sustainable efforts over longer time periods. He proposed the planning and development model to illustrate the case where economic development activities must be sustained over a long time before any job creation occurs. If economic development is viewed as a long-term process, then a collaborative interorganizational arrangement among organizations seems to be a benefit.

The strengths of the relationships among the organization members were found in development of informal networks, and communication among the group members was increased. Cantor concluded that interorganizational arrangements among community colleges and other organizations produced sustained, long-term involvement.

"Communiversity" describes the linking of schools, colleges, universities, and noneducational organizations. These organizations work together as flexible centers for education and training. The goals of communiversity linkages are to: (a) improve the community through coordinated action programs involving education, cultural, training organizations, and resources in the community; (b) improve the operation of the engaged organizations in meeting their goals; (c) increase awareness of the availability of community resources; (d) develop a better equalization of the community's use of resources for development; and (e) align the resources with the needs of the community (Kuhns and Martorana, 1988).

The role of community colleges in economic and community development is changing. Community colleges are no longer single players in the economic development process. They are one of several organizations working together to promote community and economic development and community renewal. Budget constraints are leading state higher education boards to recommend that higher education institutions work together regionally and locally to achieve results (Kuhns and Martorana, 1988).

Institutional Effectiveness and Economic Development

Measures of quality for institutions of higher education have been difficult for educators to define and to agree upon. One purpose of identifying such measures has

been to specify selected indicators so that all educators will know what actions constitute effectiveness. Measures of quality have included: the reputational view, admissions selectivity, library holdings, faculty credentials, accreditation of programs and the institution at large, assessment of funding, grant receipts, productivity of the faculty in research and publications, performance of the graduates, and age of the institution. McCleod and Carter (1986) questioned if any of these measures was appropriate in evaluating the two-year institution. They embarked upon a study of two-year community, technical, and junior colleges drawn from the rolls of AACJC. They developed a questionnaire to determine the level of assessment that existed in community colleges with respect to quality. Seventy-nine respondents returned their survey instruments for a response rate of 59.8 percent. Fifty-five or 69.7 percent of the 79 respondents indicated that their institutions utilized formal assessment programs to measure quality. Among the measures identified were: accreditation processes, student satisfaction surveys, program expenditures, faculty qualifications, analysis of students' grades, peer review by other institutions, transfer rates, job placement of graduates, and program reviews. The authors concluded that educational quality should be assessed, but the question still remains, how can quality most effectively be measured (McCleod and Carter, 1986)?

Community colleges are linked to fulfilling the needs of their service areas. Because of their uniqueness, it is difficult to evaluate the effectiveness of the institutions uniformly or by a single measure. Many legislative groups have developed systems that purport to compare all colleges on like measures. Community colleges vary immensely because each service area differs economically, socially, and culturally. Traditional

measures of institutional effectiveness such as numbers of students enrolled and number of degrees awarded have been called inappropriate standards for open-door institutions. Enrollments have been affected by changes in the economy and by tuition increases. The effects of access and equity should be examined and measured before institutional effectiveness is determined (SREB, 1987 cited in Grossman and Duncan, 1988). Enrollment data quantify only the number of individuals being served by an institution not the quality of their education or their skills (Richardson, 1988).

Community colleges and technical colleges vary according to the communities they serve, the programs they offer, and also in their identified missions and goals. To compare community colleges to one another is an imperfect measure of effectiveness. Yet

> performance evaluation in the absence of some objective criterion can appear to be a biased or self-serving exercise. It is difficult, therefore, for a community college to evaluate its own progress even for its own purposes. In short, not only must an effort be made to assess the effectiveness of community and technical colleges to address external demands it must also provide some information as to their own performances in terms of stated missions (Grossman and Duncan, 1988, p. 2).

Planning as a Basis for Effectiveness

The planning process is one means by which community colleges attempt to improve their effectiveness. Valuable planning enables faculty, staff, and administrators to discover environmental trends that require institutional adaptation. The leaders of community colleges are continually aligning themselves with the environment through the

deletion and addition of new programs, curriculum changes, and transformations in priorities (Alfred, 1991).

Richardson (1988) identified strategic planning as a process for improving institutional effectiveness. He defined planning in three ways: a goal–oriented approach with emphasis upon outcomes, a systems approach emphasizing processes, and the ecology model with elements from the previous two models. The ecology model emphasized the importance of achieving goals along with identifying the process for achieving them. The ecology model provides the basis for the concept of strategic planning. Planning has two polar alternatives: the scientific approach to planning and the political approach to planning. Scientific planning is grounded through facts, while political planning is grounded in the values of the participants who are influenced through the presentation of facts. Strategic planning lies midway between the two contrasting methods of scientific planning and political planning. Strategic planners must also realize that those representing institutions and others involved in education view effectiveness from different perspectives. Richardson believed that community college administrators who intend to become more effective must alter their organizational culture internally to promote unity while at the same time remaining open and flexible to the outside environment. The effectiveness of community colleges may be considered from the perspective of individuals and groups outside the system. Some ways community colleges might be evaluated by those outside the system include: (a) articulation of mission and goals bringing about general approval by the public, (b) institutional responsiveness to service area needs through programs and services, (c) production of educational outcomes

valued by funding constituencies, and (d) communicating successful student outcomes information to the public. Effectiveness of community colleges as viewed from the "outside-in" will become increasingly important during the 1990s as the need for additional funding increases. Most community college leaders have traditionally used "inside-out" measures such as mission and goal accomplishment, rate of growth, satisfaction among faculty and staff, and usage indicators to measure effectiveness. In the current environment "outside-in" indicators are preferred over "inside-out" standards (Alfred, 1991).

Gleazer (1980) identified the following characteristics in community colleges which he considered to be superior: (a) The college is responsive to the environment requiring change and flexibility, (b) The college is aligned with and knowledgeable of the community, (c) The college connects with learners through enduring associations, (d) The college offers educational opportunity to the unserved, (e) The college recognizes differences, and (f) The college functions in a nexus role in the community educational structure. As the community grows and matures, the effective community college must be able to change in response to new needs for programs and services. The superior institution also becomes a focal point for education in the community.

The National Alliance of Community and Technical Colleges (NACTC) and the National Center for Research in Vocational Education joined in 1987 to develop a model for institutional effectiveness. The NACTC surveyed its 46 member institutions located in 25 states. A majority of responses addressed the need to define the mission and goals of technical and community colleges.

The membership of NACTC believed that institutional effectiveness was "the process of articulating the mission of the college, setting goals, and using data to form assessments in an ongoing cycle of goal setting and planning" (Grossman and Duncan, 1989, p. 5). Through the development of a mission statement an institution activates its goals. The goals are demarcated through the identification of outcomes or measurements. The outcomes yield quantifiable data which can be used to measure the institution's performance in achieving institutional goals. Goal and mission statements can be continually assessed to see if changes are needed (Grossman and Duncan, 1988).

A seven-member task force of NACTC refined the model of institutional effectiveness using the DACUM (Developing a Curriculum) process. The Alliance Task Force (1988) identified six areas fundamental to the missions of community and technical colleges operating in the United States: (a) access and equity, (b) employment preparation and placement, (c) college/university transfer, (d) economic development, (e) college/community partnerships, and (f) cultural and cross-cultural development. Thirty-eight outcome measures encompassing the six categories were identified to measure institutional effectiveness.

The Alliance developed eight indicators of effectiveness for economic development. These are:

(1) The percentage of the adult population of the service area which has achieved associate degrees from the institution

(2) The percentage of displaced or unemployed workers enrolled in regular or customized training

(3) The percentage of displaced or unemployed workers who have completed regular or customized training who are now in appropriate employment

(4) The percentage of students (credit and noncredit) entering customized training programs for new, expanding, and retooling industries who are subsequently employed or retained by contracting employers

(5) The number of requests made for information and problem-solving services, such as technology transfer, resulting in cost-savings, new or improved products or techniques, or client satisfaction

(6) The percentage of the annual labor market needs of the area met by credit/noncredit program completers

(7) The number of jobs created or retained in the service area as a result of the college's work with employers

(8) The percentage of persons in the service area who use educational services related to small business to either start, improve, or expand a business (Grossman and Duncan, 1988, p. 27).

With North Carolina's data reporting system, many of these statistics are currently unavailable. Community colleges employing sizable staff with the means to conduct follow-up survey of graduates and employers would be able to obtain outcome information as suggested by the Alliance indicators. However, these surveys are expensive in terms of labor and opportunity costs. Unless legislators and others require college leaders to report such data, they may not allocate the staff to complete follow-up studies of students and employers.

Research completed at the University of Michigan in 1989, involving 2,410 faculty, trustees, and administrators recognized that effectiveness at community colleges is associated with paradox. "Paradox exists when colleges employ

simultaneously contradictory programs, practices, and delivery systems to respond to groups holding different expectations" (Alfred, 1991, p. 97). The Michigan study identified eight elements of paradox: (a) mission comprehensiveness and mission specificity, (b) open door admissions and selective admission, (c) simultaneous emphasis on technical education and liberal arts education, (d) support for traditional and nontraditional delivery systems, (e) planned change and natural change, (f) broadness and variety in defining student success and specificity of student success to organizations, (g) quantitative and qualitative concepts of academic quality, and (h) externally and internally originated linkages with community organizations (Alfred, 1991).

Many community colleges seem to operate as closed systems that do not respond to their communities. Flexible adaptive institutions are structured as open systems which encourage participative decision making from faculty and staff. Closed systems discourage participation from faculty and staff and focus on goals which have been defined by leaders within the system (Alfred, 1991).

Unfortunately not all programs designed to advance economic development will do so. Some programs may be more effective in enhancing economic development than others. Community college educators should begin to evaluate carefully these targeted programs to determine which are more effective than others.

State and local government leaders and educational policy makers should begin to examine whether education and training programs have a positive impact upon firms engaged in location decisions. Administrators should determine if the scope of

training programs or the amount of the training subsidy will affect a firm's location decision. If a state's policy functions to lure firms from other states by, in effect, lowering the costs of workers then no real economic gains have been made. Employers receive lower costs for employee wages, but employees lose because they receive lower wages. Retention efforts to induce firms to stay within a locality should also be examined. Some companies have succeeded in winning assistance from localities by threatening to move. These firms may not have intended to move or may later move regardless of the support they received (Grubb and Stern, 1989).

Assessing outcomes that occur through economic development policies or training and education programs is difficult at best. Palmer (1990) recommends examining the effectiveness of community college training programs by comparing community college programs with other available training options. This research would require developing experimental designs to compare groups or sets of employees learning the same material in different environments. Community college researchers and business and industry leaders have been unwilling to develop and conduct these complex and costly experimental studies. They have instead relied on simpler evaluations involving client satisfaction.

Change Theory

By the year 2000, major changes will occur in the types of jobs that are being created and the skills that are needed to perform new jobs. Miller (1989) estimates that:

"By the year 2000, between 5 to 15 million manufacturing jobs will be restructured, approximately the same number of service jobs will become obsolete, and an estimated 16 million new jobs will be created" (p. 2).

Most new jobs will require a higher level of proficiency than jobs that are being lost. In the new economy, education for the workforce must stress skills development for information-related industries, national and global markets, flexible, team-oriented environments, and rapidly changing job requirements. Education for the industrial age with a focus on manual labor skills requirements and production for narrowly focused markets will no longer be relevant in today's rapidly changing workplace (Luke, Ventrias, Reed, and Reed, 1988). The authors point out that:

> A distinguishing characteristic of the postindustrial economy and a major reason for the renewed attention to higher education, is the increased importance of information versus labor and energy in the production of goods and services. Information has become the most important raw material, and it is through information processing that economic value is added to goods and services. It is through information processing and knowledge development, for example, that agriculture and manufacturing continue to produce more with fewer employees (Luke, et al., 1988, p. 147).

In the new economy with an emphasis on information, deskilling jobs will not prove to be an effective means of increasing productivity. Employees will need to be more skilled in order to deliver products that meet new competitive standards and flexible delivery systems. Carnevale (1991) believes that: "In the new economy, the simultaneous pursuit of productivity and other competitive standards requires that

people be treated as assets to be developed in order to add value rather than as costs to be reduced" (p. 146).

Productivity is not the only measure of competitiveness in the new, information-based economy. Products are judged on the basis of "quality, variety, customization, convenience, and timeliness. People are demanding high-quality goods and services that are competitively priced, available in a variety of forms, customized to specific needs, and conveniently accessible" (Carnevale, 1991, p. 2).

The creation of a learning organization is a competitive advantage in the new economy. Companies increase their superiority over rivals competing in the same markets by being able to research innovative ideas and to utilize new information. The emphasis on product variety, customization, quality, and timeliness makes learning a valued trait. Organizations extend their product lines after an introductory product is brought to market, increasing the value of learning and experimenting with new applications (Carnevale, 1991).

Senge (1990) in The Fifth Discipline: The Art and Practice of the Learning Organization conceptualized a learning organization with five dimensions:

(a) Systems Thinking. To visualize the pattern of the parts that make up the whole to understand the entire interrelated system,

(b) Personal Mastery. Repeatedly defining and redefining our vision and goals to accomplish those things which mean the most and continually determining where we are in the process,

(c) Mental Models. Common concepts and suppositions developed so that people in organizations have a common vision of their group and its environment,

(d) Building a Shared Vision. Developing a common image of the future for employees which inspires loyalty and continued performance, and

(e) Team Learning. Individuals working together in a way that they learn together more rapidly than they would have working individually.

Each of these components must be thought of as learning disciplines that must be continually mastered and practiced within the organizational setting. Systems thinking is the discipline that binds personal mastery, mental models, building a shared vision, and team learning together. Through the learning organization, people continually re-examine how they are connected to the world at large. The learning organization is constantly increasing its ability to conceive and invent new ideas and products for the future.

A "high performance organization" is another model suited for the new economy. This organization exhibits the following characteristics:

(a) Careful attention is given to customer demands for quality, timely delivery, and costs;

(b) Production is viewed as a seamless process involving integrated work rather than discrete tasks;

(c) Authority and responsibility are decentralized, production workers are more responsible for independent judgements and decisions, and management layers are reduced;

(d) Provisions are made for communication up, down, and across the organization; and

(e) Ideally formal or informal education programs are integrated into operations to develop the skills of workers (Governor's Commission on Workforce Preparedness, [GCWP] 1992, p. 4).

Community college personnel are not relating well to external environmental changes that are necessitating internal organizational changes in the way that college staff relate to the external environment:

> Transitions occur when there is a mismatch between environmental conditions, institutional decisions, and positioning strategies pursued. These mismatches usually arise from changes in the external environment that alter constituency expectations and mandate new public policy initiatives or from self-generated changes in colleges (Alfred, 1988, p. 217 and 218).

In order to adapt to the external environment and to manage the organizational transition, community college leaders will need to examine the following issues:

(a) public cognition of the social adaptation role performed by community colleges,

(b) redefinition of finished products

(c) balance between general education and technical training in academic programs,

(d) reconceptualization of quality in the concept of academic renewal.

(e) velocity of institutional responsiveness to change,

(f) dualism in the organizational structure,

(g) breadth and depth of institutional relationships with public and private sector organizations, and

(h) planning strategies with operational meaning (Alfred, 1988, pp. 219-222).

The role of community colleges must continue to evolve or these colleges risk becoming unresponsive organizations that are out of touch with the needs of their constituencies. The operation of nontraditional programs and services advance institutions and the communities they serve, but they are largely ignored in the traditional reward structure. Community college governance must broaden and move toward participative management with inputs coming from all levels both within and outside the organization. The community college will become a more dynamic, powerful, and responsive institution when it strengthens faculty and staff within the system and responds to environmental change outside the system (Alfred, 1988).

CHAPTER III

METHODOLOGY

Multiple–Case Study

This research incorporates a multiple-case study of the nontraditional economic development activities of three Piedmont Triad community colleges in North Carolina. An in-depth, case study protocol with emphasis on contextual variables, process variables, and outcome measures guided the study of each individual college. A profile and description of each community college along with a comparative analysis of the three colleges provided an analysis of the outcomes and processes which contribute to effectiveness in economic development.

Research Population

The population for this study of community colleges from which three were selected includes eight community colleges in the Piedmont Triad region of North Carolina: Alamance Technical Community College, Davidson County Community College, Forsyth Technical Community College, Guilford Technical Community College, Piedmont Technical Community College, Randolph Community College, Rockingham Community College, and Surry Community College. The colleges are located in central North Carolina in an 11-county area designated as the Piedmont Triad due to the geographic location of the region's major cities of Winston-Salem, Greensboro, and High Point. Collectively the 1991-92 enrollment of the eight community colleges was 25,743 and faculty numbered 646 persons (Piedmont Triad Regional Data Center, 1992).

Sample Selection

A panel of 20 experts from North Carolina community colleges, the North Carolina Department of Community Colleges, and the North Carolina Department of Commerce was selected to assist in the determining sample for this study. The individuals nominated by the researcher to serve on the panel were chosen for their knowledge of business and industry training and knowledge of Piedmont community colleges. A listing of the individuals who served on the panel of experts along with their job titles and institutional addresses is shown in Appendix A. Panel members were mailed a questionnaire (Appendix B) and asked to rank the three most effective Piedmont Triad community colleges in relation to their nontraditional economic development activities, with "1" being the most effective and "3" being the least effective. Each respondent was also asked to identify outcome measures that could be used to determine community college effectiveness in economic development.

Design

The researcher described and evaluated programs at community colleges identified as "best" by the panel of experts. The study methodology was "case study;" an individual case study of each institution was completed, and then a comparative analysis across the three cases was also related and compared to prior research and models explained in the literature.

Research Procedures

A case study protocol was developed to guide the multiple-case study and to increase reliability. Generalizability was strengthened by using three sites to study the

characteristic of effectiveness in economic development. A pilot study was completed at Piedmont Community College, the college ranked third in effectiveness so that the researcher could refine the study before moving to the two other community colleges ranked as first and second in the study. Four primary sources of data were used for the case study: documentation, interviews, statistical data, and direct observation. The documentation included community college catalogs, fact books, planning documents, and annual reports. Community college annual reports from Focused Industrial Training and New and Expanding Industries programs were provided by the Department of Community College's Business and Industry's Services Division. The sources of data were chosen to strengthen the results of the study and to employ the technique of data triangulation whenever possible. A fifth source was a special-purpose questionnaire constructed for this study.

A structured-interview format was developed for each individual participating in the interviews according to his or her functional area. Approximately ten open-ended questions were developed and used as a guide for each interview. Each interview was tape-recorded for transcription at a later time.

Instrument Development

A questionnaire was developed by the researcher for use with the panel of experts. The questionnaire was sent to personnel at three other community colleges for their review and comments before it was sent to the panel of experts.

A case study protocol instrument (Appendix C) was also developed by the researcher, and reviewed by personnel at three other community colleges and by the

researcher's university research committee before it was used to conduct a pilot study at Piedmont Community College. The instrument was based upon the Conceptual Framework for Evaluating Customized Training in which contextual, process, and outcome variables were recommended for the evaluation of customized training programs (Bragg and Jacobs, 1991). Contextual variables included: indicators of the economic environment, educational institutions and systems, and employee and employer characteristics. Needs assessments, customized training subprocesses, and customized training approaches were the identified process variables. Outcome variables included: employee outcomes, employer outcomes, industry outcomes, educational outcomes, and societal outcomes. After the instrument was reviewed and field tested, minor changes were made to improve the clarity of the instrument.

Data Collection

A researcher-developed instrument was mailed to the 20 individuals who were selected to serve as a panel of experts in the first step to identify the three most effective Piedmont Triad community colleges with respect to economic development. The three schools to be studied were selected from the panel's ranked responses. A tally of the responses is shown in Table 1. A vote of one was given a weight of three and a vote of three was given a weight of one. Guilford Technical Community College was selected by the group as the most effective in economic development, followed in order by Forsyth Technical Community College, Alamance Community College, and Piedmont Community College. Forsyth Technical Community College was not included in the study because at the time of the study the researcher was employed by the institution.

Table 1

Questionnaire Responses by Respondent

Piedmont Triad Community Colleges in Economic Development				
Rankings of Respondents	Guilford	Forsyth	Alamance	Piedmont
1	3	2		
2	3			
3	3	2		
4	3	1	2	
5	2		1	3
6	3	1	2	
7	2			3
8	1	2		
9	3	2	1	
10	3		2	1
11	3		2	1
12			2	
13	1	3		
14	3	3		2
15	3			2
Total	36	16	12	12

Data from the three community colleges were collected from the lead administrators working with business and industry training, staff administrators, and presidents through structured interviews. Documentation from the sample was provided through annual progress reports, planning documents, mission statements, catalogs, and other publications. Data included information regarding enrollments, classes, budgets, companies served, and organizational structure. Statistical data describing state and local economic conditions, the labor force, community characteristics, and the local employer base were primarily drawn from the Piedmont Triad Regional Data Center.

Data Analysis

Each tape-recorded interview was fully transcribed by the researcher in order to process and integrate the data. A grounded theory approach was used to analyze the interview data. Strauss and Corbin (1991) defined a grounded theory as "one that is inductively derived from the phenomenon it represents. That is, it is discovered, developed, and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon" (p. 23).

A grounded theory also meets four tests in evaluating the theory and its application to the phenomenon under study: fit, understanding, generality, and control. The theory should fit the phenomenon which is being studied if it was induced from a deliberate study of the subject area. The theory should be understandable and practical enough to be useful to practitioners working in the field. If the theory was developed

through a broad–based study of data, then it should be applicable in a diversity of settings relating to the phenomenon being studied. Lastly, the theory should suggest control as the theory may be applicable only under certain conditions (Strauss and Corbin, 1991).

The data were coded using the three techniques applicable to grounded theory: open coding, axial coding, and selective coding. Open coding is defined as "the process of breaking down, examining, comparing, conceptualizing, and categorizing data" (Strauss and Corbin, 1991, p. 61). Axial coding involves restructuring the data to fit the paradigm model after open coding. The coding paradigm employs conditions, context, action, interactional strategies and consequences. Through the process of open coding the researcher separates the data into clusters or sets, generates characteristics or properties of the sets, and develops a dimensional location of the property on a continuum. Selective coding involves defining a core category under which all subcategories can be integrated. Through selective coding, the researcher also identifies other categories which may be needed to fill in the gaps (Strauss and Corbin, 1991).

Strengths and Weaknesses of the Methodology

Through the panel of experts the researcher was able to use the expertise of leading administrators in the NCCCS to identify the colleges to be studied. The survey offered a simple, direct method of establishing a research sample. The panel members were able to respond without being influenced by the interactions of their

associates. Each member of the team had an equal opportunity to voice his or her opinion.

The one-shot case study was defined by Campbell and Stanley (1963) as a pre-experimental design utilized in educational research "in which a single group is studied only once" (p. 6). The case study was further defined by Yin (1981a, 1981b) as an empirical inquiry that: "investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (p. 23).

The case study method is frequently criticized by scholars as an inferior method because researcher bias sometimes influences the findings of the study. In addition, single case studies provide limited generalizability because the results may not be applicable to other populations.

Research designs are usually judged for their merit by subjecting them to four tests: construct validity, internal validity, external validity, and reliability (Yin, 1984; Kidder, 1981). Construct validity was addressed by using at least three sources of data throughout the study whenever possible. Key informants used for the interviews were asked to review their interview transcripts. Reliability was improved by following the same case study protocol for all three research sites. External validity was improved by using the replication approach to conduct the multiple-case studies. Each case was studied and analyzed, then the three cases were compared and contrasted, and a theory emerged. Internal validity was addressed through the use of pattern matching across all three cases.

Although there was information that related to schools outside of the Piedmont community colleges, the researcher did not attempt to generalize beyond the original population. Based upon the data and the analyses, any readers may draw inferences as the context, etc. of the reader's situation accurately reflects the conditions of the study. In quantitative research, the researcher often takes steps to explain the "generalizability" of the study; in qualitative research the reader or user of the research must construct his or her own level of generalization.

The Pilot Study

A pilot study was completed at Piedmont Community College during May and June of 1993. The President of Piedmont Community College was contacted by letter and permission was obtained to spend one week at the school engaged in understanding the concept of economic development and the context in which the school was operating. Interviews of approximately one and one-half hours were scheduled with the lead administrators working in economic development. The President recommended three community leaders who should be included in the interview process and contacted each of them to inform them of the research project. All interviews with PCC staff members were scheduled in the board room at the college. Community leaders were interviewed in their offices.

Subsequent Case Studies

Following the pilot study, the researcher obtained permission from the President of Alamance Community college to study that school. Interviews of approximately one hour in length were conducted with each of the three lead

administrators in economic development and the President of ACC. The Director of Industrial Training recommended community leaders who he felt should be included in the project. Both community college staff and community leaders were interviewed in their office settings. The research at ACC encompassed four days over a two-week time span.

At GTCC the research followed essentially the same procedure. Permission was obtained from GTCC's President to study the school. Recommendations of community leaders who should be included in the project were made by GTCC's Assistant to the President for Economic Development. Both community leaders and community college staff were interviewed in their office settings. The research at GTCC encompassed four days over a three-week period.

CHAPTER IV

RESULTS OF THE STUDY

Introduction

This study was designed to investigate the effectiveness of North Carolina's New and Expanding Industries program, Focused Industrial Training (FIT) program and Small Business Centers (SBCs) in the Piedmont Triad region. Three of the eight community colleges in the region judged to be most effective were selected for case studies by a panel of experts. The three community colleges are discussed in the context of national, southern, North Carolina, and Piedmont Triad economic trends. A community profile was developed for each of the three community colleges including its history, service area population and demographics, labor force, and major employers. At each site interviews were conducted with community college administrative staff, a representative from a major employer, a chamber of commerce or economic development official, and a city or county government official.

Contextual Variables

National Conditions

As the nation approaches the year 2000, four important trends will impact the U.S. economy: (a) The growth of the U.S. economy will be steady, due to the expansion of U.S. exports, increases in productivity, and a robust world economy. (b) Manufacturing will continue to decline in importance in the U.S. economy. Most of the new job growth will be in the service industries. (c) The growth in numbers of employees in the

workforce will be slow and the workforce will be older, with more females, and more disadvantaged workers. (d) Service sector jobs will require a higher level of skills and education than were required in the past. Most new jobs will require some postsecondary education and training. One of the keys to continued economic growth will be an investment in human capital through education and training (Johnston, 1987).

Following World War II, the U.S. had achieved the highest productivity rate of real Gross Domestic Product (GDP) per person among the nations belonging to the Organization for Economic Cooperation and Development (OECD). Over time other OECD nations improved their rates of productivity relative to the United States. By 1989, most of the OECD nations had closed the productivity gap with the U.S. Between 1950 and 1989, nine OECD nations (Canada, Japan, Austria, Belgium, France, West Germany, Italy, the Netherlands, and Norway) had surpassed the U.S. labor productivity and growth rates of GDP. Denmark matched U.S. growth and Sweden and the United Kingdom lagged the U.S. growth rate of 3.2 percent. The OECD nations benefitted from technology transfer and capital formation which in turn improved their growth rates of GDP and labor productivity (Kendrick, 1991).

In the 1950s and 1960s changes in Gross National Product (GNP) were attributed to rising labor productivity. During the 1970s and 1980s the growth in GNP was due to an expanding labor force. During the 1990s labor force participation rates are expected to stabilize. Many economists have attempted to explain the lagging rates of productivity growth in the U.S. These explanations include greater government regulation, a less skilled workforce demographically and/or educationally, fewer innovations, and errors in

gauging productivity. The U.S. Bureau of Labor Statistics projects that GNP will grow at a rate of 1.8 to 3.2 percent per year to the year 2000 (Bowman, 1991). The 1990s are expected to be a period of slow and steady growth. DRI-McGraw Hill projects an average annual growth rate of 2.3 percent during the 1990s compared with an annual average growth rate of 2.6 percent during the 1980s. Slow growth is expected due to sluggish growth of the workforce, low rates of capital formation, and small productivity improvements. During the 1990s Americans will become increasingly intertwined in the international economy (Pennar and Mandel, 1989).

Growth in employment slowed during 1989 due to sluggish economic growth, and a recession started in July of 1990. By 1990 employment growth slowed and then declined after mid-year. During 1990 the greatest number of job losses occurred in the manufacturing and construction industries. By the fourth quarter, job losses were also occurring in the services sector. The jobless rate rose to 5.9 percent in the fourth quarter of 1990 (Haugen and Meisenheimer, 1991). Unemployment occurred throughout all sectors of the economy and remained stable due to slow growth in the workforce. During 1991 unemployment increased in the first quarter and continued to expand in the following three quarters. During the fourth quarter of 1991, the unemployment rate had risen to 6.9 percent. Job losses occurred in the textiles and apparel industries during 1989, 1990, and the first quarter of 1991. These sectors confronted serious threats from overseas manufacturers and retail sales were slow. In the latter half of 1991, job losses in textiles and apparel slowed (Meisenheimer, Mellor and Rydzewski, 1992). During the ten years between 1980 and 1990, North Carolina's average annual unemployment rate

had trended below the national average annual unemployment rate. The rate during the 10 year period peaked in 1982 at 9.0 percent, and the U.S. annual average rate was slightly higher at 9.8 percent (Employment Security Commission of North Carolina [ESCNC], 1992).

Southern Conditions

The South continues to lag the nation in educational attainment. In 1980, only 58.5 percent of Southern adults had completed a high school diploma, as compared with 66.5 percent of adults nationwide. By 1990, the percentages had improved with 70 percent of Southern adults completing a high school diploma compared with 75 percent nationwide. In 1990, 17.5 percent of Southerners had completed a bachelor's degree or higher level of education compared with a nationwide average of 20.3 percent.

Southerners continue to lag the nation in per capita income, earning $1600 less per year than the U.S. per capita average. U.S. per capita income is a poor benchmark because it had fallen from sixth place in the industrial world in 1987 to tenth place in 1992. The industrial structure of the South's economy is dominated by low-wage jobs in the non-durable goods producing sectors, predominantly textiles and apparel. These labor-intensive industries are substituting capital for labor whenever possible and are displacing low-skilled workers.

In the future the Southern economy will be at risk due to three trends: global competition, slow job growth, and industrial reorganization. For the South as a whole, job growth is expected to slow to approximately 14 percent between the years 1988 to

2000. North Carolina's projected rate of job growth of 12.1 percent will lag average growth for the South projected at 14.9 percent.

In the future, the occupations exhibiting the highest rates of growth are expected to be in sales, technical, professional, managerial, and service-related industries. Skilled and semi-skilled, occupations are expected to grow at slower rates during the 1990s. In Alabama, Arkansas, Mississippi, South Carolina, North Carolina, and Tennessee, blue-collar jobs represent over 20 percent of the workforce as compared with 14 percent nationwide. Skilled and semi-skilled workers will be less likely than management employees to adapt to changing technology due to their low rates of literacy and lack of technical skills (MDC, Inc., 1992).

North Carolina Demographics and Economic Trends

North Carolina's population growth generally mirrors trends exhibited across the nation. The number of young adults entering the labor force declined by approximately five percent during the 1980s and is expected to continue to decline during the early 1990s (GCWP, 1992).

Educational attainment in N.C. continues to lag the nation. The quality of the state's labor force will have a significant impact upon the future economic development of the state (Office of Policy and Planning, N.C. Department of Administration [OPPNCDA], 1990). High school graduation rates in N.C. for adults aged 24-65 rose to 70 percent compared with 75 percent nationwide during the period from 1980-90 (GCWP, 1992).

From 1950-1990, the number of jobs in North Carolina grew by approximately 25 percent in each ten-year period. From 1970 to 1980, growth reached a peak of 33 percent, followed by the period from 1980-1990 when job growth declined to 28 percent. In the years between 1990-2000, job growth is expected to slow to 12 percent (OPPNCDA, 1990).

Per capita income is a frequent measure of economic health because of its availability and comparability on an annual basis. North Carolina's per capita income has lagged the national average since the 1940s when it stood at 54 percent of the national average. The state's per capita income rose 16 percent during the 1940-1950 period, remained stable during the years between 1950-1960, increased 12 percent between 1960-1970, and declined two percent during the 1970-1980 period. Between 1980-1990 per capita income growth slowed, gaining only five percent to 87 percent of the national average. The Piedmont region has exhibited a higher per capita income as a percent of the U.S. per capita income than the mountain or coastal plains regions of N.C. In 1950 the per capita income for the Piedmont region was 83 percent of the national average and by 1988 per capita income in the Piedmont had risen to 97 percent of the U.S. per capita income (OPPNCDA, 1990).

Four major trends have impacted the structure of the N.C. economy during the period from 1950-1990: (a) declining employment in agriculture, (b) increased employment in manufacturing (1940-1970), (c) following 1970 a stabilization in manufacturing employment, and (d) employment growth in the service sector. In 1940, N.C.'s total manufacturing employment stood at 26 percent of the total labor force and

by 1970 manufacturing employment had increased to 35 percent of the N.C. labor force (OPPNCDA, 1990).

The state's recent economic growth is bringing N.C. closer to nationwide economic trends. Manufacturing is a significant component of the N.C. economy employing approximately 30 percent of the total workforce, compared with 19 percent for the nation. In the manufacturing sector, job growth is highest in durable-goods manufacturing firms that are capital intensive. A large percentage of the total manufacturing workforce is employed in non-durable manufacturing such as textiles, apparel, and furniture than in durable-goods manufacturing. Jobs in the non-durable goods manufacturing sector require the lowest levels of skills and are at the greatest risk of loss (GCWP, 1992). Jobs in non-durable manufacturing have traditionally paid lower wages than jobs in durable–goods manufacturing, capital–intensive industries with higher value added during the manufacturing process (OPPNCDA, 1990). Service industries are exhibiting the swiftest growth rates both in the numbers of jobs created and the percentage of growth (GCWP, 1992).

The Piedmont Triad

The Piedmont Triad is composed of N. C. Planning Regions G and I. Region G includes Alamance, Caswell, Davidson, Guilford, Randolph, and Rockingham Counties, and Region I includes Davie, Forsyth, Stokes, Surry, and Yadkin Counties. The three community colleges selected for this study are located within Region G; one also serves Person County which is not located in the Piedmont Triad.

Manufacturing employment accounts for a larger number of jobs and greater earnings in Region G than in the state in general. About one of every three people in Region G are employed in manufacturing. Approximately 40 percent of the manufacturing labor force is employed in either textiles or apparel manufacturing and another 20 percent of it is employed in the furniture industry. The remainder of the region's manufacturing labor force is diversified among a variety of industries (OPPNCDA, 1990). Tobacco manufacturing is also a significant employer in the region.

Tobacco, textile, apparel, and furniture manufacturing industries are confronting serious challenges. Sales of tobacco products are declining due to health concerns by consumers, but export sales are growing. Competition from overseas imports are impacting apparel manufacturing. Textile manufacturing continues to benefit from increased production output due to changing technology, but workers are being displaced. Furniture sales and employment are affected by economic cycles, interest rates, housing starts and sales, and the rate of household formation (Metro Insights: Southern Edition, 1990).

Among the area's largest manufacturing employers are R.J. Reynolds Tobacco Co., Burlington Industries, Cone Mills, and Thomasville Furniture. Each firm employs 4,000-11,000 local residents (Metro Insights: Southern Edition, 1990). In addition, Sara Lee Corporation, AT&T, Unifi, Lexington Furniture Industries, Klaussner Furniture, and AMP are among the Triad's top 25 employers. Service-related firms among the top 25 largest employers operating in the Piedmont Triad include: Bowman Gray/Baptist Hospital Medical Center, Sears Roebuck and Co., Carolina Medicorp, U.S. Postal Service,

Wachovia Corporation, Moses H. Cone Memorial Hospital, and American Express (Bouchey, 1993).

State Programs to Enhance Economic Development

North Carolina offers a limited program of financial incentives to recruit business and industry to the state and for expanding firms in some cases. The inducements offered to industry include Industrial Revenue Bonds, Taxable Industrial Development Bonds, Community Development Block Grants, Business Energy Improvement Program, Group Foreign Sales Corporation Program, Job Screening through the State's Employment Security Commission, an Industrial Training Program administered by the Department of Community Colleges (DCC), Access Road Funds available through the Department of Transportation, and Environment and Energy Savings administered through the Department of Environment, Health and Natural Resources.

Industrial companies may use Industrial Revenue Bonds (IRBs) to finance capital projects related to manufacturing. The advantage to an industrial firm is a long-term payback with low interest terms. Industrial projects under $10 million in capitalization may be financed totally through IRBs. If a firm does not qualify for IRBs, the state offers Industrial Development Bonds (IDBs). Income generated through IDBs is not taxable by the state to holders of the bonds (North Carolina Department of Commerce, 1993).

North Carolina also offers two additional programs available in the 50 designated distressed counties in the state: Job Creation Tax Credit and an Industrial Development Fund. Through the Job Creation Tax Credit in distressed counties the state issues a tax

credit of $2,800 per new job created over a minimum of nine positions over a four-year period. The tax credit is allowed for no more than 50 percent of the firm's tax liability when combined with other tax credits. An Industrial Building Renovation Fund is also available for manufacturers locating in the 50 designated distressed counties. The fund provides $1,200 of assistance per new job up to a maximum of $250,000 to renovate existing structures (Chapter 45, House Bill 654, 1993).

The Role of the N.C. Community College System in Economic Development

North Carolina's Community College System has provided for the economic development needs of communities across the state primarily through three targeted programs: the New and Expanding Industries program, Focused Industrial Training Centers, and the Small Business Network. To a lesser extent occupational extension, in-plant training, Human Resource Development, and literacy programs may also be tailored to assist business and industry needs as well.

The New and Expanding Industries program is available to any company, new or expanding that creates 12 or more new jobs. All of N.C.'s 58 community colleges have the capability to deliver the services. However, some community colleges have a greater commitment to economic development than others.

Through state funding, a Department of Community College program manager and a local community college representative assist a company to structure a customized employment program that may include pre-employment training, audio visual services, instructors' wages and travel, lease of a training facility during training, and the reimbursement of nonsalvageable production materials used for training purposes. Since

the program began 30 years ago, 3,000 companies and 250,000 trainees have benefitted from it.

Table 2 summarizes the program history for a five-year time period. As indicated, program expenditures and numbers of trainees peaked in 1988-90. The budget peaked in 1987-88, and the number of projects has ranged from 167-140 during the five–year period.

Focused Industrial Training Centers (FIT) are in operation at 31 of the 58 community colleges in N.C. The FIT program is supported by grants administered by DCC that enable a community college to offer training and educational services that would not be available through an institution's enrollment-based curriculum or continuing education programs. Each FIT program is staffed by an industry liaison who works within the community and local industry to assess training needs and provide educational programs targeted to those needs. FIT directors work closely with individual companies and targeted occupational groups.

Table 3 illustrates the five–year history of the state-wide FIT program since 1987-88. The data show that program directors have almost doubled the number of trainees involved in the program from 1987-88 to 1991-92.

Table 2

North Carolina New and Expanding Industry Training

Years	# of Projects	Total Expenditures	# of Trainees	Avg. Cost Per Trainee
1991-92	151	$5,484,869	15,738	$348.51
1990-91	140	$5,400,630	14,857	$363.51
1989-90	165	$7,828,250	16,807	$465.77
1988-89	149	$8,938,463	16,833	$531.01
1987-88	167	$5,874,136	12,263	$479.01
TOTAL	772	$33,526,348	76,498	

Table 3

North Carolina Focused Industrial Training

Year	# of FIT Centers	# of Industries	Total # of Trainees	Total # of Skills Classes
1987-88	19	613	4,766	557
1988-89	24	883	6,559	707
1989-90	29	954	8,861	892
1990-91	29	794	8,906	1,027
1991-92	31	962	9,461	957
TOTAL	31	4,206	38,553	4,140

Small Business Centers are located in 53 of the state's 58 community colleges. SBCs offer a variety of services including: educational programs, one-on-one counseling and referral, teleconferences and video replays, and resource centers. The SBCs offer owners and prospective small business owners a community-based resource for training and information. SBC state-wide program data for a five-year period are shown in Table 4. The data show a 65 percent growth in the number of seminars and 41 percent growth in the number of participants in the five-year period (The North Carolina Community College Fact Book, 1993).

Table 4

North Carolina Small Business Centers

Year	No. of Centers	Seminars/Workshops	Participants
1987-88	40	1,368	32,654
1988-89	50	1,682	36,161
1989-90	50	1,979	43,736
1990-91	50	2,257	43,563
1991-92	53	2,254	45,981
TOTAL	53	9,540	202,095

The Three Case Studies

This section presents each of the three case studies. The studies generally employed similar structures and were based primarily upon a series of interviews conducted at the community college and in the community they serve.

Case Study Interviews

At each site visited, at least four community college staff members and three community leaders were interviewed. At all three sites, the community leaders interviewed included: a city-county government official, a chamber of commerce representative, and a plant manager from a major local employer. Six interview protocols were developed for each category of individual interviewed, including: community college director, dean, president, government official, chamber of commerce representative and plant manager. Each interview was structured to last approximately one hour. All the interviews were tape–recorded and later fully transcribed. A detailed listing of the interviews completed at each site is shown in Table 5.

Table 5

Case Study Interview Schedule

	Case 1	Case 2	Case 3
Community College Staff	Director, SBC	Director, SBC	Director, SBC
	Director, Industry Training Services	Director of Focused Industrial Training	Assistant Dean of Focused Industrial Training/ Apprenticeship
	Vice President for Business/Industry Affairs	Director of Industry Training Services	Assistant Dean of Occupational Extension/New Industry
	President	President	Assistant to the President for Economic Development and Corporate Services
			President
Community Leaders	Caswell County Chamber of Commerce Executive	President, Alamance County-Wide Chamber of Commerce	Greensboro Chamber of Commerce, Economic Developer
	Caswell County Manager	Burlington City Manager	Manager of Business Assistance and Development, City of Greensboro
	Plant Manager	Plant Manager	Plant Manager

Case One: Piedmont Community College

Piedmont Community College, (PCC), a rural, multi-campus institution, is located in the northern Piedmont Triad of North Carolina. The institution's service area includes Person and Caswell Counties. PCC's main campus is located on a 178 acre site in Roxboro, N.C. in Person County. The main campus consists of 10 buildings with a total of 102,000 square feet. A satellite campus is located in Yanceyville in Caswell County. At present the satellite campus consists of one building containing 15,000 square feet (PCC Fact Sheet, 1993).

Person County Technical Institute was founded July 1, 1970. The institution has been renamed three times to reflect its changing mission. Person County Technical Institute was redesignated as Piedmont Technical Institute in 1971, Piedmont Technical College in 1979, and Piedmont Community College in 1988. The institution has exhibited a history of involvement in economic development dating from its founding. PCC's mission is stated as follows:

> A major purpose is to serve as a catalyst for the economic development of the service area, which includes Person and Caswell Counties, located in the North Central Piedmont. The service area is in transition from a rural agrarian society to a manufacturing service economy (Piedmont Community General Catalog and Student Handbook, 1992-1994, p.10)

Piedmont Community College offers 11 Associate Degree programs in business related areas, nursing, social service, and an Associate Degree in General Education. The institution offers 10 diploma and 25 certificate programs. Unique certificate and diploma programs are offered in gunsmithing and taxidermy (PCC Fact Sheet, 1993).

General Model for Economic Development

The college's operation and organization follows an integrated model for economic development. Three vice-presidents report to the college president: a Vice-President for Academic and Student Affairs, a Vice-President for Administrative Affairs, and a Vice-President for Business and Industry Affairs and Adult and Community Education. The structure is integrated because the institution's vice-presidents are in constant communication regarding community instructional needs and the availability of full-time personnel for customized training. There is crossover of personnel among the functional areas because full-time faculty work in continuing education programs when needed.

Full-time instructors are encouraged to teach customized training courses in industry settings in order to continue to keep up-to-date with equipment and technical subject matter. The Director of Industry Training Services offers opportunities to teach customized training classes to full-time personnel first, before referring classes to part-time faculty. Instructional programs offered through the Small Business Center are provided with part-time faculty. Administrators at PCC strive for an institutional balance between instructional programs offered for continuing education and terminal degree or certificate programs, between short-term and long-term training programs.

The Vice-President of Business and Industry Affairs and Adult Community Education oversees Human Resource Development, Literacy, occupational extension, Focused Industrial Training, and the Small Business Center. His role is to coordinate, integrate, and organize all the program areas for a smooth fit within the institution. He also functions as a bridge between continuing education and curriculum

instruction to utilize full-time personnel and to continuously update faculty skills whenever possible. Developing community awareness and integration of instructional services are continuous processes at PCC. The major accomplishment of the continuing education program has been broadening the base of industries that have been involved in customized training in Person and Caswell Counties. The Vice-President is located on PCC's main campus in Roxboro, and the institution's economic development offices are throughout the campus and also at off-campus locations.

The Director of Industry Training Services has four areas of responsibility: administering the Focused Industrial Training program, and the New and Expanding Industry program, working with occupational extension classes at industrial sites, and acting as institutional quality coordinator. The director is housed at the institution's main campus in Roxboro. At present his major focus is the institution's New and Expanding Industry program for GKN, an automotive manufacturer that will employ approximately 530 employees in Person County. The location of the plant in the area was cited as a major accomplishment of the college working with economic developers. Staffing for the GKN plant is not expected to be completed until 1996. The director outlined as a goal the location of two new industrial manufacturers, one for Person County and one for Caswell County. Both counties have built speculative industrial buildings of approximately 50,000 square feet.

The Director of the SBC performs a dual role: operating a Small Business Center at the main campus of the college in Roxboro three days a week and operating in Yanceyville at the Caswell County Chamber of Commerce two days a week. The major

responsibilities of the director are to coordinate short seminars and to provide counseling assistance for prospective and existing business owners. The SBC's major accomplishments have been in assisting a leading Caswell County employer adopt a new product line and in assisting a prominent food manufacturer become established. The SBC will be working in Person County to see that a business incubator is established and ideally the SBC would be housed in the incubator.

Needs Assessment Process

The needs assessment process at PCC was characterized as open-ended and on-going. The Director of Industry Training Services makes a personal contact with each of the major industrial firms to talk about the company's training needs for the coming year. In working with clients all the staff use an open-ended approach. The major goal is to discover the client's needs, the next step is to determine a way to deliver the services in an acceptable format, and if that is not possible to present the client with an alternative. Because manufacturing employment is limited to a small number of firms in Person and in Caswell counties, the Director of Industry Training Services is able to maintain communication on a weekly basis with the major point of contact at all local industrial firms.

The Vice-President of Business and Industry Affairs best described the needs assessment process:

> ...we just go open-ended into discussions with them. What are their needs? We don't always try to go sell them a textbook case. It's a negotiating type thing; what is it you need? We try to work with them and tell them, these are the

services we currently have available. How can we adapt those services to your needs? We're trying to keep customer focus.

Assessment tools used by the director include Career Area Placement Survey (CAPS) and computerized needs assessment. The director believes that the use of computer software will lead to more effective needs analysis because the managers and workers will be asked about tasks and whether they perform them daily, weekly, or monthly.

The SBC Director uses an informal needs assessment process. He asks seminar participants to complete an evaluation at the conclusion of each seminar for input. He is currently a member of a task force established to develop a common core of programs that could be offered by the NCCCS Small Business Centers across the state.

The Director of Industry Training Services most frequently uses client driven/custom designed training approaches in working with industry. Modification of courses is utilized when a course or a program had been previously delivered for another client. The program would be modified to suit the needs of another industry. The SBC Director uses training courses that have been developed for special populations and modification of courses.

The Director of Industry Training Services utilizes end-of-course evaluations and also feedback by telephone. He questions the major industrial contact upon course completion to determine three points:

(a) Did the instructor accomplish the training objective?

(b) How well did the instructor present the material?

(c) What changes should be made if the course is offered again?

The major barriers identified by administrators at PCC in economic development and customized training were lack of information and lack of resources. PCC operates in a dual capacity, serving the citizens of Person and Caswell Counties. Although the college operates two SBC sites, the Center receives the same base budget allotment as the other SBCs across the state with only one location. Lack of information and communication among Department of Commerce, Department of Community Colleges, local economic development officials, and institutional personnel was identified as a major problem. The secretive nature of the economic development process inhibits communication and clear identification of goals. Industries are particularly sensitive about releasing information regarding personnel and this inhibits institutional personnel in structuring effective instructional programs. The Director of Industry Training Services suggested that a way to break this barrier is to continue to gain credibility through long-term employment in the service area.

Since PCC's inception in 1970, administrators have been strongly committed to economic development. The role of the community college in the community has moved beyond education and training. PCC has been a catalyst for economic development and action by staff members has been proactive. The administrative staff at PCC exhibited strong community linkages with the Roxboro Chamber of Commerce, the Industrial Relations Committee of the Roxboro Chamber, the Caswell County Chamber of Commerce, the Person County Economic Development Commission, the Caswell County Economic Development Commission, Person County Schools, Caswell County Schools,

and the Roxboro Area Merchants Association. The community college also supports an organization called the President's Club with approximately 200 members from all major businesses and industries in the two-county area. Membership dues for the President's Club are $250 per year.

Strong community linkages have strengthened the role of the community college in economic development at PCC. According to the Vice-President for Business and Industry Affairs and Adult Continuing Education: "You have to be involved in community things where those same people are, so they see you as more than a role player from the college that comes in just to talk about training."

PCC maintains strong relationships with the Caswell and Person County Schools. Regular quarterly meetings are scheduled with each superintendent of schools and with central office personnel. PCC has approval for the largest Huskins Bill arrangement in the state with 341 high school students enrolled in the program during 1991. Through the Huskins Bill, community colleges are allowed to teach high school students and grant credit for college courses even though the students are still attending high school. Successful implementation of the Tech Prep program has been a key factor in working with industrial prospects in new plant locations.

The institution has aggressively encouraged and supported the implementation of a county-wide strategic planning process for Person County beginning in 1988. The five-year planning effort involved over 140 Person County residents who were divided into four task forces: economic development, education, government services, and people services. The project moved through five distinct stages: (a) Formation of the Steering

Committee, (b) Environmental Scanning, (c) Development of Mission Statements, (d) Formation of Task Forces, and (e) Development of Action Plans and Monitoring Schedules. The President of PCC served as a member of the Steering Committee. Through the planning process, principal community leaders were able to examine key issues and explore potential solutions. The process brought about consensus regarding the critical issues confronting Person County. In addition, the Person county-wide planning process provided a model for PCC to use in Caswell County (Person County Strategic Planning Committee, 1989).

The community college is strongly linked to Caswell County in its support of county-wide planning and through the joint staffing of the Caswell County Chamber of Commerce. The Small Business Center Director shares office space in the Old Caswell County Courthouse and operates SBC services for Caswell County two days per week. The Executive Director of the Chamber of Commerce and SBC Director function as a team supporting one another. The SBC Director said:

> We share the facilities and we have a mutual agreement to answer the phones Chamber of Commerce/Small Business Center. In a sense, I almost become the Assistant Chamber Director. At the same time, we furnish a secretary that's in the Chamber office over there. Her primary responsibility is the Small Business Center. When she is not doing work for me, she does work for the Chamber. It's a good relationship and we really dovetail in Caswell County. Consequently I help with a lot of the Chamber functions. We are deeply involved in the community aspect of Caswell County.

The Caswell County Economic Development Board is a nine-member body appointed by the Caswell County Commissioners. PCC has requested an ex-officio,

non-voting seat on the Economic Development Board. The County Manager is supporting the request because "they need to be officially on the team." The County Manager has recommended that the Chamber of Commerce, County Economic Developer, and the college's Small Business Center locate within the same suite of offices in the Old Courthouse so that these services could be coordinated and consolidated and clerical support could be shared among the three staff members.

The strategic planning model used by citizens in Person County was duplicated and enhanced in Caswell County during 1990. The planning process received considerable support from the administrative staff at PCC and from the Caswell County Board of Commissioners. A citizen survey was mailed to all households within Caswell County for input regarding the most critical issues within the county. Through the mail survey the steering committee achieved an 11 percent response rate. The six task forces are listed in their order of importance as ranked by the citizens of Caswell County: (a) Education, (b) Economic Development (c) Medical Facilities, (d) Solid Waste, (e) Child Development, and (f) Elderly Services. The project culminated in the production of a document funded by the North Carolina Rural Economic Development Center. Through this long-term planning process, community leaders were able to achieve consensus among the county's citizens and establish priorities and goals.

The establishment of leadership development programs for both counties has also strongly linked the college and the community. In 1988 PCC and the Person County Chamber of Commerce jointly sponsored Leadership Person. The program was implemented as a means of developing a strong leadership pool of candidates for county

and city elected offices and for other key community roles. In 1991 the Person County Leadership model was replicated in Caswell County and Leadership Caswell began. Over five graduating classes have completed the program in Person County and two in Caswell County.

The leadership programs have reinforced both counties' commitment to strategic planning and consensus building among community leaders. Leadership Caswell County included 12 class meetings that were designed to examine critical issues, develop participants' leadership and problem-solving skills, and to study governmental agencies of the county and the state.

According to PCC's President, the community college's leading educational partnership is with a Caswell county manufacturer of home decorative fabrics, employing over 500 employees. The company manufactures draperies, mattress ticking, upholstery, and apparel decorative fabrics. Approximately 60 percent of employees working at the plant are high school graduates, and 40 percent have not graduated from high school. The average level of seniority at the facility is approximately 15 years. During the last five years the college and the manufacturer have strengthened their partnership, working primarily in three areas: a learning center, management development training, and classroom and on-the-job training for production employees. PCC operates a learning center within the plant funded by a $300,000 National Workplace Literacy Grant awarded through the U.S. Department of Education. Sixty employees are currently participating in the instructional program, designed to upgrade reading and math skills through computer-based instruction. The industry provided classroom space, support staff, and

access to the employees. The college provided full-time instructional staff, computers, and software.

The President of PCC relates the depth of the relationship:

> We are like a family. We are like a part of them. This is a very sensitive thing because when in Rome you do as the Romans do. When you are in someone else's house you behave like you are expected to and that means the work schedule, the breaks, the telephone, the annual leave. Those things you have to schedule together. That's the secret to success when you can do it.

The company's implementation of work teams contributed to the success of the skills center. One member of the work team is allowed to rotate into the classroom without causing any disruption to production by the team. According to the plant manager:

> PCC focuses more on the softer skills, communication, work-team training...We moved in the direction of work teams or empowering employees. They have been a tremendous assistance to us. It would have been difficult to make changes within our work environment, such as empowering employees without the training provided by PCC.

A similar partnership has been established with Person County's major textile employer. Since its inception in 1970, the college has been involved with the company through various instructional programs. Over the 23 years, PCC has provided a range of instructional programs such as first aid and CPR, fire brigade training, and supervisory training. The firm has also been working with the North Carolina School of Applied Textile Technology and the Institute of Textile Technology as well as PCC to jointly develop an Associate Degree program for process technicians. The community college

has also worked to develop a part-time program to cross train industrial mechanics so that they can become multi-skilled in pneumatics, hydraulics, electronics, and mechanics. The textile manufacturer has also incorporated a literacy component into the partnership called the lifelong learning project. College staff have completed job-task analysis of all the company's positions to determine the levels of math and reading which are required to become technically proficient at those occupations. The literacy project has also been supported by a U.S. Department of Education grant.

PCC's third partnership is with a newly located automotive manufacturer. The relationship began when the company made several exploratory trips to the area searching for a new plant location. The administrative staff at the college made seven presentations before the company made a final decision to relocate in Person County. Through the process of successive visits, the college staff refined their presentation until the company was satisfied that Person County was their best choice. According to PCC's Vice-President for Business and Industry Affairs and Adult and Community Education:

> We've been told that our community college was a determining factor in several locations by the industrial recruiter. In a lot of these industrial recruitments they'll spend a lot of time; seven times we made presentations to different levels of people at GKN. Each time was a different group, a different presentation.

Community Characteristics

Roxboro is the major municipal center in Person County and is located in the middle of the county. Approximately 40 percent of the Person County workforce is employed in manufacturing. Total population for the county is approximately 31,000.

Caswell County is a farming center. The population in the county is uniformly distributed among nine townships: Yanceyville, Pelham, Stoney Creek, Milton, Hightower, Leasburg, Anderson, Dan River, and Locust Hill. Caswell County includes approximately 435 square miles. As many as 68.8 percent of the workforce commute daily to jobs in other localities. The population of Caswell County (20,960) is smaller than that of Person County and has shown no growth since the 1950s (Caswell County Strategic Planning Steering Committee [CCSPSC], 1992).

In 1990, Caswell County's civilian labor force numbered 9,690 persons, with a total employment of 9,270 persons and a 4.3 percent rate of unemployment. Service producing industries employed 21 percent of the labor force, with the largest number, 1,030 or 11 percent working in government jobs. Manufacturing employment for the county peaked in 1985, when 1,060 persons were employed in goods producing industries. Agricultural employment decreased from 830 persons in 1980 to 630 in 1990. In 1990, 55 percent of the Caswell County population over 25 years of age had completed a high school diploma compared with 41 percent in 1980. Approximately 65 percent of Caswell County's senior high school students plan to continue their education through postsecondary education: 27 percent of high school seniors plan to attend a four-year educational institution, while 38 percent intend to enroll in a community college. Twenty-six percent of the graduates plan to begin work (CCSPSC, 1992).

Major Employers

The major industrial employers in Caswell County are textile related as seen in Table 6: Burlington Industries, Classic Hosiery, Prospect Hill Manufacturing, and Royal Textiles.

State and local government is another of the county's major employers: Caswell County Board of Education, NC Department of Corrections, and Caswell County government (Piedmont Triad Regional Data Center, 1993). Approximately 25 percent of the labor force is employed in agriculture (CCSPSC, 1992).

Person County's civilian labor force numbered 15,440 persons during 1990, with a total employment of 14,430 persons and an unemployment rate of 6.5 percent. Unemployment rates in the county have tended to be high over time. In the period between 1980 and 1990, unemployment peaked at 13.4 percent in 1982 when 1,860 persons were unemployed (ESCNC, 1992). Person County has a larger industrial base than Caswell County with two major employers, Collins and Aikman and Crown Craft, Inc., each employing over 1000 employees. Person County's major employers are listed in Table 7. Collins and Aikman produces textile components for the automotive industry. Crown Crafts, Inc. manufactures comforters which are sold by department stores such as Macy's and Bloomingdales. Eaton Corporation is an automotive supplier, manufacturing air controls and other auto parts.

Table 6

Caswell County Employers 1993

Employer	(N)
Burlington Industries	740
Caswell County Board of Ed.	576
N.C. Department of Corrections	236
Caswell County Government	185
Classic Hosiery	110
Prospect Hill Manufacturing	75
Royal Textiles	70
Guilford Mills, Inc.	45

Source: Piedmont Triad Regional Data Center

Table 7

Person County Employers 1993

Employer	(Approximate N)
Collins & Aikman Corporation	1000-2499
Crown Crafts, Inc.	1000-2499
Loxcreen Company, Inc.	250-499
Tultex Yarns	250-499
Eaton Corporation	250-499
Carolina Power and Light Co. (Hyco)	250-499
Carolina Power and Light (Mayco)	100-249
Alsco	100-249
Dialight Corporation	100-249
Fleetwood Homes of N.C., Inc.	100-249
Irvin Industries	100-249
North American Aerodynamics	100-249
Person Co. Memorial Hospital	100-249
Person Industries	100-249
Bromma, Inc.	50-99
Pepsi Cola Bottling Co.	50-99

Source: Industrial & Manufacturing Directory for Roxboro and Person County.

Textile industries in both counties have been undergoing a changeover in equipment, moving toward more sophisticated technology. Much of the new equipment is fitted with programmable logic controllers and electronics. Caswell County's major employer determined that 80 percent of its workforce will need to use computers in the future. Unfortunately over 50 percent of the employees did not have the reading skills required to interpret the instructional and descriptive information that accompanied the computers. Leaders at several plants are also examining their productivity and implementing process engineering to improve productivity.

Caswell County has a colorful history drawn from the rural tradition of tobacco farming. The county was one of the most affluent in the state due to the discovery of the bright leaf curing process called flue curing around 1837. According to local legend, a slave tending a tobacco barn allowed the fires to go out by mistake. He went to a neighboring blacksmith shop and brought back some hot coals to renew his fire. When he threw the coals on the fire, a great heat resulted. The following morning the tobacco had turned a golden yellow, to his great surprise. Tobacco prices quadrupled due to the discovery of this innovative curing process. Caswell County became a top producer of tobacco which brought affluence to the area. Another local legend told by the Caswell County Manager pointed to Caswell County's resistance to growth and change:

> Nearly 100 years ago, Dan River Fabrics Corporation, that's in Danville, Virginia, was supposed to come to Milton. That was our only incorporated township and the people turned it down. They didn't want all the traffic. They didn't want the train coming through Milton because folks didn't want the soot from the train to dirty their laundry hanging on the lines. That's the way the stories are told. The county has traditionally resisted change.

In recent years Caswell County has experienced growth both in the number of new jobs created and construction of new industrial plants. In the period 1985 to 1989 the county gained 255 new jobs and added 13 million dollars of capital investment. Development continued between 1989 and 1992, when 435 new jobs were added and 8 million dollars of capital investment was created (CCSPSC, 1992).

Outcome Variables

Individual employee outcomes are difficult to measure without specific information from the employees involved in customized training programs. The plant manager of Caswell County's major employer and the college's leading industrial partner alluded to some of the employee outcomes:

> . . . a much higher learning level of employees today. We've had 200 employees elevate from a grammar school reading level to a high school reading level. We've had 19 employees complete a GED degree. We've had 500 employees who completed the Working training which teaches people to function in work environments and accept more responsibility.

Technical competence of the employees involved in the learning center has increased. As new positions become available these employees will be able to compete on an equal footing with other employees for higher paying positions. Employees were not rewarded with higher level wages for the completion of a GED. These employees must secure higher level positions before their wages are raised. Higher wages are a byproduct of the training, and not a direct result of enrolling in a community college customized training program.

Indicators do point to a higher level of job satisfaction among those working at this particular plant, which may or may not be related to the learning center. According to the plant manager: "In the last five years, we've worked with PCC, we've enjoyed a 10 percent increase in productivity, quality improved by 80 percent, and turnover reduced from 12 percent to 7." Not all of these improvements can be attributed to customized training because there are too many extraneous factors working within the manufacturing environment. According to the Director of Industry Training:

> At some of the textile plants we went in and did the Zenger Miller Program: Front-line Leadership and Working, that enabled them to move from an individual piece rate to a system where they had work teams. Productivity increased and almost everyone in the plant was making more than before. They dropped the piece rate and they were one of the few plants to do that and not have a drop in production.

The President of PCC noted that this employer had experienced changes in the operating environment which led to organizational changes in the company. Fifteen to 20 years ago the company employed its own training staff in each one of its plants. Today, after going through a leveraged buy-out the company no longer employs a training staff because these jobs became expendable during the 1980s. Instead, the company relies heavily on the services provided by the local community college.

An overall trend within the service area that the president cited was a stronger willingness among the local industry to work with the college than could be seen ten to 15 years ago. He referred to a number of trends that had influenced these industries:

> . . .a combination of factors, certainly the changing markets, the changing world markets, the global competition, the changing level of training, the workforce preparedness that is necessary have heightened their interest in knowing what the college can do for them. For instance, there are some industries where today that maybe fifteen years ago would not have been interested in anything that the college could have provided. Today I can think of a couple of cases—it's like we can't do enough.

As economic conditions have changed, Piedmont's President believes that workforce preparedness may be the primary issue of concern for his institution.

The college has received numerous gifts in recent years including equipment such as programmable logic controllers. Funds have been donated by area industries in which the companies set aside a scholarship for an employee of the company. PCC also sustains a President's Club in which approximately 200 members pay dues of $250 a year. Many members of the President's Club are representatives in the two-county area from business and industry.

PCC also supports a scholarship program in which each sponsoring business or industry endows a scholarship with a minimum of $5,000 in funds. The $5,000 is used to generate interest income and the proceeds of the scholarships are awarded to company employees.

PCC has assisted one local Caswell County hosiery employer that hired over 120 employees. For those 120 jobs, the employer received 600 active job applicants. The recent location of a major automotive supplier in Person County will add approximately 500-530 additional jobs to the labor force.

The Caswell County Manager believes that Caswell County is making identifiable progress in the realm of economic development. He believes that the construction of a satellite campus by PCC in Yanceyville is an asset to the community. Another benefit of having a satellite campus has been day-care provided by PCC at the satellite campus. The day-care service has enabled more mothers to enter the workforce, improving family income. The community has been slow to respond in the past, but over the last five years progress in Caswell County has accelerated compared to previous years. The county recently received a grant to double the capacity of the town's wastewater treatment facility which will improve industrial recruitment efforts.

Through the strategic planning efforts initiated by the county and the college, community leaders were able to achieve consensus on the needs of the community and implementation of future strategies to address those needs. The leadership development program sponsored jointly by the chamber and the college has led to a better informed citizenry, a higher quality of political office candidates, and local leaders leading the community. PCC's instructors have also worked with the county to train emergency service personnel moving them from basic service to advanced life support. All ten of the county's fire department volunteers have been trained as first responders. Currently, the county has only two ambulance crews available, so the first responders are critical in working with patients until an ambulance arrives. Caswell's County Manger said: "The first responder can make the difference between life and death and that's a service, a training program that's been possible through the community college."

Table 8 summarizes the service to business and industry provided by PCC from 1987-88 through 1991-92. PCC enrolled over 1100 students each year as shown. The combined labor force of Person and Caswell Counties in 1990 numbered 25,130 persons. Table 9 summarizes the industries participating in the state's New and Expanding Industries program. For a community college serving a small labor force, the level of service provided is high.

PCC has contributed to societal improvement in Caswell County by assisting a new employer, improving the county's strategic planning, improving the county's leadership, building a satellite campus with a day-care facility, and sponsoring first responder training for the county's fire departments. Not all the identified outcomes were directly related to the development of business and industry, some outcomes are a by-product that improve the community and enhance the quality of life for Caswell County's citizens.

Table 8

Service to Industry at Piedmont Community College

	Years				
Program	1987/88	1988/89	1989/90	1990/91	1991/92
FIT					
Industries Served	46	37	19	18	14
Students Served	353	567	766	325	546
Courses Offered	28	16	25	31	22
SBC					
Enrollments	324	244	285	474	266
Counseling	179	182	218	212	172
Seminars/Workshops	31	28	30	26	31
New and Expanding Industry					
Students Served	344	128	279	293	193
Industries Served	6	1	4	6	6
Number of Expansions	-	1	3	4	4
Total New and Expanding Industry Budget	$202,092	$20,824	$141,368	$154,677	$87,953

Table 9

Participating Firms in the New and Expanding Industries Program at Piedmont Community College

Years				
1987/88	1988/89	1989/90	1990/91	1991/92
Arrowood Tech.	Dialight Corp.	Collins & Aikman	Burlington Industries	Fleetwood Homes
ATEC Aluminum Extrusion		Dialight Corp.	Classic Hosiery	Design Cast
Burlington Industries		Eaton Corp.	Collins & Aikman	Classic Hosiery
Cogentrix		Fiberboard Tech.	Crown Craft	Irvin Industries
Fleetwood Homes			Dialight Corp.	Dialight Corp.
Tarheel Sewing			Fiberboard Tech.	Crown Craft

Case Two: Alamance Community College

Alamance Community College, (ACC), located in Graham, N.C., serves a metropolitan population. Alamance began operation in 1959 as an Industrial Education Center. In 1964, the name of the Center was changed to Technical Institute of the Alamance and the institution began conferring the Associate in Applied Science degree. ACC began offering classes at its present location in 1976. A Burlington campus began operation in 1978 when the college acquired Glenhope School from the Burlington City Schools. In 1979 Technical Institute of Alamance was renamed Technical College of Alamance and ultimately renamed Alamance Community College in 1988. The philosophy and purpose of the college does not refer to the term economic development. However, one of the college's purposes is: "To provide specific, job oriented training for new, existing, and/or expanding industries/businesses" (Alamance Community College General Catalog, 1993-95, p. 7).

ACC offers 42 certificate and diploma programs categorized under four divisions: business, industrial technology, humanities and public service, and human services. Alamance is the only community college in N.C. to offer an Associate Degree in biotechnology, and one of only a limited number in the U.S. (ACC General Catalog, 1993-95).

General Model for Economic Development

The college's organization and operation follows a centralized model for economic development. All of the services provided to business and industry are organized under the Director of Continuing Education. The Directors of the Small Business Center,

Industrial Training, Focused Industrial Training, and Off-Campus Credit Courses report to the Director of Continuing Education. The Director of Continuing Education reports to the Dean of the College. Three Deans report to the President: the Dean of Institutional and Resource Development, the Dean of Administrative and Fiscal Services, and the Dean of the College (Instruction).

The Director of Focused Industrial Training and the Director of Industry Training divided the existing industries in Alamance County between them; and each is responsible for calling on half of the industries. The role of the Director of Focused Industrial Training is to provide FTE generating, instructional programs and also non-FTE generating programs through the FIT program. The Director also teaches Zenger Miller Working, Front-Line Leadership, and a newly developed Leadership 2000 certificate program. A major accomplishment during the past year was the development of the Leadership 2000 program consisting of 14 twelve hour courses ranging from leadership awareness to communications to managing diversity. To qualify for a certificate of completion in the program, students must complete nine courses. Six classes are designated as core courses and three are designated as electives. During the coming year, the director hopes that the Leadership 2000 certificate will become an important instructional program for supervisory employees in Alamance County. The director has also developed a program called Employment Preparation for the unemployed who he hopes will become better job applicants.

The Director of Industrial Training spends approximately three-fourths of his time working with the college's New and Expanding Industries program. Prior to 1992, ACC

operated a large in-plant instructional program, but changes in regulations passed by the N.C. General Assembly during the 1992 session led to the virtual termination of the program. Since the director has been on staff, the institution has never had fewer than four New and Expanding Industries projects at any one time, and he has managed as many as 12 projects within a single year. During the coming year, he will concentrate on marketing occupational extension programs to restore FTE to its previous levels.

The Director of the Small Business Center is responsible for instructional programs for prospective small business owners and functioning small business owners. He manages a variety of instructional programs: curriculum courses, occupational extension courses, self-supporting seminars, chamber programs, and N.C. Bar Foundation programs. The SBC is designed to be a one-stop center for small business owners rather than a referral unit. During the past year the Director purchased a program called Self-Employment Education (SEE) marketed by Control Data. At ACC, the program for long-term entrepreneurship education, will be referred to as SEEACC.

The Director of Off-Campus Credit Courses was established as a part-time position in 1983-84. The current director has been managing the area full-time for the last five years. She receives referrals from the Director of Focused Industrial Training, the Director of Industry Training, business and industry, community agencies, and city government. Growth in off-campus credit offerings has been strong. Three years ago approximately 35 courses per quarter were offered; today that number has risen to approximately 100 per quarter, with approximately three-quarters of those having sufficient enrollment to operate. Courses are offered at three area high schools, one

elementary school and approximately 50 business and industry locations throughout the county. Through the community-based credit courses the director is able to recruit students who might otherwise not attend college. These students are often reluctant to travel to Alamance's main campus in Graham, but will attend classes closer to their community sometimes in a location where they attended high school. During the coming year, the director will be searching for additional sites, but the major barrier will be the logistics of managing diverse locations.

Needs Assessment Process

The needs assessment process at ACC is informal. Until approximately one year ago the personnel serving business and industry had used only one-on-one client contact to assess needs. During 1992 the administrative personnel sponsored six working luncheon sessions for 100 industry representatives in Alamance County. The purpose of the sessions was to stimulate a dialogue between local industry and ACC to determine if the industrial training community had educational needs that were not being met. Personal contact among industry and college personnel is stressed to keep the lines of communication open. According to the SBC Director: "... you've got to identify the need, but then the problem becomes that you talk to so many different people and the needs are so fragmented and so diverse and so individual that at least in small business it is a one–to–one type situation." End–of–course evaluations are used as a part of the needs assessment process, but no additional assessment tools were identified.

ACC's industrial training staff has made extensive use of client driven/custom designed training courses, modification of courses, and alternative delivery of training courses. Training for special populations has been done occasionally. One staff member shared an example where deaf students participated in a pre-employment program, the company hired them, and ACC followed up with additional sign language courses for company personnel.

The major barriers identified by ACC personnel were their inability to access full-time faculty to teach in industry training programs. Full-time faculty are being utilized by the college to their capacity and in most cases are not available to teach. Lack of financial resources to do adequate needs assessments and supplement instructional resources has been a constraint. Also lack of understanding regarding the role of the directors was also mentioned. ACC is linked with the Alamance County Chamber of Commerce whose primary focus has been industrial recruiting. The Chamber has compiled an excellent record of recruitment, diversifying the region's industrial base. The community college also has linkages with the Burlington Downtown Corporation, the Employment Security Commission, the Piedmont Triad Small Business Group, and the Alamance County Economic Development Board. The staff of ACC has contributed to the economic growth of the community through its strong support offered by the New and Expanding Industries program.

During 1991-92, the staff at ACC coordinated a $140,000 workplace literacy program at Burlington Industries that was made possible through a federal grant. The institution also trained more than 500 employees in the Zenger Miller Frontline

Leadership and Working programs for three employers (Meeting the Challenge: Annual Report for Alamance Community College, 1991-92). The staff at ACC have strong partnerships with Glen Raven Mills, Roche Biomedical, and Copeland Fabrics.

Community Characteristics

Alamance County's largest city is Burlington, well-known for its manufacturing outlet centers, with over 200 outlets in the area. Over 39,000 of the county's 108,213 residents live within the city of Burlington. The county's other municipalities include: Graham, Mebane, Elon College, Gibsonville, and Haw River. Alamance County is centrally located with excellent access to Interstate 85/40 (Oliver, 1992). The land area encompassed by Alamance County is 431 square miles (Alamance County Area Chamber of Commerce, 1993).

The civilian labor force of the county in 1990 numbered 65,440 persons with employment of 63,280 persons and a 3.3 percent rate of unemployment. Thirty-four percent of the labor force are employed in manufacturing, 52 percent are employed in the service occupations, and only about one percent are employed in agriculture. Between 1980-1990, unemployment peaked in 1982 and 1983 with rates of 11.3 percent and 11.2 percent, respectively. Also in the 10-year period, the civilian labor force grew by 16,330 persons or about 25 percent. Textile employment declined during the 10-year period from 14,810 persons in 1980 to 12,220 persons in 1990 (ESCNC, 1992). Only 19.9 percent of Alamance County residents commute outside the county to work, while 80.3 percent work within the county (Alamance County Area Chamber of Commerce, 1993).

Major Employers

The major employers in Alamance County are textile-related: Burlington Industries, Glen Raven Mills, Kayser-Roth, J.P. Stevens, and Copeland Fabrics, as shown in Table 10. The county's non-textile major employers include: Roche Biomedical, Alamance County Schools, and Alamance Health Services (Piedmont Triad Regional Data Center, 1992).

Textiles provide the county's underlying economic base, but in the last 20 years, Alamance County has begun to diversify. In 1837, E.M. Holt founded the county's first textile enterprise, a dyeing operation located on the Alamance Creek. In 1850, the N.C. Railroad built a railroad line through the county, which led to the eventual development of the Company Shops. In 1866 Burlington was referred to as Company Shops, but the town's name was changed to Burlington in 1887. In 1896 the railroad shops moved out of the area which led to the growth of small manufacturers and eventually led to diversification. Burlington Mills was founded in 1923 and today continues to be a major employer in Alamance County (Napoli, 1993). Because the textile industry is linked with the economic cycle, producing peaks and troughs in employment, community leaders undertook an economic development program to diversify the area's economic base. An organized community effort in economic development in Alamance County began in the early 1970s. Alamance County has had many economic development successes in the last year, including:

(a) Location of Baumgartner USA, with a capital investment of $10 million and employment of 75 residents,

Table 10

Alamance County Employers 1993

Employer	(N)
Burlington Industries	1,913
Roche Biomedical	1,625
Alamance County Schools	1,334
Glen Raven Mills	1,250
Alamance Health Services	1,200
Kayser-Roth	1,008
General Electric	900
J.P. Stevens	850
Copeland Fabrics	825
Burlington City Schools	812
Culp, Inc.	743
Annedeen Hosiery Mills	720
GKN Automotive	625
Sci, Inc.	600
City of Burlington	508
Brown Wooten Mills	450
Engineered Controls International	425
Carolina Biological	425
Elon College	400
Bankers & Shippers Insurance	400
Lawrence Industries	350
A.O. Smith Electrical Products	340

Source: Piedmont Triad Regional Data Center

(b) Expansion of Bankers and Shippers Insurance with a capital investment of $15.4 million and possible addition of 200 new employees,

(c) A plant consolidation of A.O. Smith from a Kentucky plant to Mebane, N.C., and the addition of 220 jobs,

(d) A new plant start-up by Luxfer, USA, a $15 million dollar investment, employing 120 workers, and

(e) A $7.3 million capital investment in a state-of-the-art spinning plant by Glen Raven Mills (Oliver, 1992).

The Burlington City Manager expects strong growth in Alamance County to continue based on the availability of water, utilities, natural resources, and excellent transportation through the area. Improvements to enhance economic development include: upgrading the municipal airport, joint city-county funding of utility extensions, and planning to ensure the availability of industrial sites.

Outcome Variables

The manufacturing manager of a high-pressure cylinder manufacturer employing 87 employees, described the impact of the customized training program provided by ACC:

> ...I see the fastest coming up to speed of a workforce I've ever seen. I've never seen a workforce who from the date of hire gets up to speed faster on a modestly technical, highly motivational type of activity out there. I think it's all a part of a whole series of things. The training fits with our philosophy, it fits with our approach, it fits with the way we deal with people.

The management of the plant developed a complex selection procedure to assess and screen applicants, along with a training program designed to build employee competency. The selection process consists of a four-hour aptitude test and a three-part or four-part job interview. The aptitude test includes English, math, mechanical reasoning, and spatial relations components. The customized training is composed of 120 hours of training, including: a math refresher course, instrumentation, industrial safety, statistical process control, leadership, team building, industrial physics, and total quality management.

Career advancement occurred as a result of the initial customized training. The plant manager cited the following examples:

> ...we've had a lot of promotions from the hourly ranks. Some of that has got to be attributable to training as well. We've had two people go in the machine shop, four or five go in the maintenance department, three master operators promoted off the plant floor into team facilitator and training coordinator, a shipping and receiving person. What effect the training has had into those areas is not consistent, but it's certainly had some impact in most of those cases, especially the gang that went from the operator level to the maintenance department where they were already engaged in beginning technical training.

The plant manager cited three ways that employers could boost their wages: annual cost of living adjustments, wage progression based on length of service, and four skill classifications based upon technical competence. The advancement of employees among operator classifications does entail a training component; however, the other two salary adjustments do not involve any training-related components. Employees achieve competence at a higher rate based upon the extensive customized training provided by ACC.

The employer benefits from a higher level of job satisfaction among the employees as a result of customized training. The plant manager explained his experience:

> And I think one of the outcomes is just the workforce itself, things like job satisfaction and caring about your job. You don't really measure it, you're just able to see it, see it in the eyes of everybody, see the way they act, and their attitude out on the floor. Again the training provided by the community college is a significant link in a whole series of events in a chain, none of which in today's business world can guarantee success. We can have the best performance and have tremendous success here whether it's the maximum amount of success we should have who knows, but it's still no guarantee.

The Director of Focused Industrial Training at ACC spoke about his involvement with firms in the area that were implementing self-directed work teams. Their organizational charts are becoming flatter and the companies are moving away from the traditional hierarchical pyramid. The director illustrated:

> They're working on work teams and they have a team leader who is an hourly employee. They trade off that responsibility so therefore they own their jobs. When they own their jobs, they like their jobs a lot better. The responsibility is shared and they've done away with whole layers of management, which gives them a voice in the top. They're happier because they're being asked for the first time, we want to know what you think. And now they see management caring.

The President of ACC believes that industries in Alamance County today are more likely to "share with us a training need or a manufacturing problem, than they were ten years ago." He cited the need for the college to be responsive to local industry, although it is becoming more difficult due to constrained resources.

The City of Burlington benefitted from customized training provided by ACC for its fire department and police force. Training has been customized by location and flexible scheduling to meet the city's needs. The Burlington City Manager believes that his city may have the most highly educated police force in N.C. with 70 percent of the police force having completed at least two years of postsecondary education, and 42 percent having completed a Bachelors degree or graduate–level education. Burlington benefits because conflicts and confrontations can be resolved more rapidly, improving the quality of life. The City Manager believes: "These people understand, they're not just police officers or fire fighters, but they're also communicators, managers."

Forty-one percent of employees in Alamance County are working in manufacturing: with 58 percent of those employed in textiles, 10 percent in apparel, and 8 percent in machinery. One of the major aims of the Alamance County economic development program has been diversification of the industrial base. Tables 11 and 12 show that over the five-year period between 1987-1992, ACC has provided training to 39 new or expanding industries and to 3,739 employees. The county's unemployment rate remains one of the lowest in the Piedmont Triad, 3.3 percent in 1990 and the labor force has increased by 16,330 persons during the 10-year period between 1980 and 1990. The community college has been a pivotal partner in the economic development of the region.

Table 11

Service to Industry at Alamance Community College

	Years				
Program	1987/88	1988/89	1989/90	1990/91	1991/92
FIT	-	-			
Industries Served	-	-	7	13	13
Students Served	-	-	92	154	267
Courses Offered	-	-	44	37	48
SBC	-	-			
Enrollments	-	-	537	375	316
Counseling	-	-	114	73	70
Seminars/Workshops	-	-	25	43	19
New and Expanding Industry	-	-			
Students Served	1,154	1,256	794	220	315
Industries Served	11	9	8	4	7
Number of Expansions	6	5	6	1	3
Total New and Expanding Industry Budget	$404,727	$313,419	$237,235	$277,215	$114,685

Table 12

Participating Firms in the New and Expanding Industries Program at Alamance Community College

Years				
1987/88	1988/89	1989/90	1990/91	1991/92
AT&T Technologies	AT&T Technologies	AT&T Technologies	Elastex, Inc.	Woodworkers Supply, Inc.
Durham Drapery Co.	Durham Drapery Co.	Elastex, Inc.	Glen Raven Mills	C.T. Nassau Corp.
GKN Automotive Components	General Electric Co.	Engineered Controls International	Luxfer USA, Ltd.	Baumgarten, Inc.
Honda Power Equipment Mfg., Inc.	GKN Automotive Components	General Electric Co.	Torik, Inc.	A.O. Smith
Injectronics, Inc.	Injectronics, Inc.	GKN Automotive Components		Glen Raven Mills
Nova Designs	Nypro Carolina	SCI Mfg., Inc.		Holt Mfg. Co., Inc.
Permatech, Inc.	Rego Co.	Stevens Alamance Center		Luxfer USA, Ltd.
Rego Co.	Scholl America	Torik, Inc.		
SCI Systems, Inc.	SCI Systems, Inc.			
Sweaters, USA				
Zeller Corp.				

Case Three: Guilford Technical Community College

Guilford Technical Community College, (GTCC), is a multi-campus institution with an 85 acre main campus at Jamestown, N.C. and satellite campuses in Greensboro and High Point. The institution also operates an aviation complex at the Piedmont Triad International Airport. GTCC was founded in 1958 as one of the five original Industrial Education Centers operating in N.C. Since its inception, part of GTCC's mission has been to provide job training for local citizens. In 1965, the institution was renamed Guilford Technical Institute and operated under that name until a college transfer program was added and the school became Guilford Technical Community College on July 1, 1983 (Guilford Technical Community College General Catalog, 1991-1993).

One of the first instructional programs operated by GTCC was an upholstery course designed to meet the needs of the furniture industry. In its mission statement, college leaders have identified seven educational opportunities, including: "Business and industry training services to provide course occupational upgrading and retraining of skills for employers of Guilford County to promote the economic growth of the community" (GTCC General Catalog, 1991-1993, p. 13). GTCC offers approximately 40 Associate Degree programs, 13 diploma programs, and 39 technical-vocational certificate programs.

General Model for Economic Development

GTCC's operation follows a centralized model for economic development to focus the institution's goals and objectives to meet community needs. The president is studying the implementation of an integrated model that would more fully utilize all the

institution's resources to achieve economic development goals. The Assistant to the President for Economic Development and Corporate Services reports to the President. All instructional services related to economic development are coordinated under the institution's Business and Industry Services Division. The Assistant Dean of Focused Industry Training/Apprenticeship, the Assistant Dean of Occupational Extension/New Industry, and the Director of the Small Business Center report to the Assistant to the President for Economic Development. The Director of the Small Business Center is located at the Center for Entrepreneurship, a small business incubator, in Greensboro. The other administrative staff working in Business and Industry Services are located in an office complex at GTCC's main campus in Jamestown, N.C.

The Assistant to the President for Economic Development and Corporate Services is the liaison with the community, manages most of the institutional funds for occupational extension, and coordinates special projects. She organizes marketing efforts and entry into new educational markets. The Assistant is also coordinating GTCC's three-year commitment to the Academy for Community College Leadership Advancement Innovation and Modeling (ACCLAIM). Personnel from N.C. State University are working with GTCC's staff over a three-year period to train them to conduct community-based programming. This fall, GTCC and four senior colleges in Guilford County: Guilford College, Greensboro College, North Carolina A & T State University, and the University of North Carolina at Greensboro, will begin offering on-site degree programs for employees at Konica, American Express, and AT&T.

The Assistant Dean for Occupational Extension/New Industry works with all the institution's New and Expanding Industries projects and occupational extension for existing industry. He communicates with the economic development staff at the Greensboro Chamber of Commerce on a weekly basis. GTCC employs five full-time instructors working in occupational extension. Two woodworking instructors, a total quality management instructor, a supervisory skills instructor and a customer service instructor report to the Assistant Dean of Occupational Extension. The Assistant Dean would like to triple the institution's FTEs in occupational extension, but he believes that a major limitation in enrollment expansion is the lack of qualified instructors. The Assistant Dean recommends that New Industry and occupational extension be divided among two Assistant Deans to make the area operate more efficiently.

The Assistant Dean of Focused Industrial Training operates and manages classes in three program areas: Focused Industrial Training, occupational extension, and apprenticeship. He has the flexibility to cut across three budgets so that the classes can be funded from the budgets that are most cost effective for the institution. The Assistant Dean coordinates approximately 30 to 40 classes per quarter and works with 40-50 part-time instructors, and a full-time instructor in computer science. The goals outlined for the immediate future include: developing a resource to identify instructors alphabetically and by subject area, promoting instructional programs for ISO 9000, and operating self-supporting classes. The goals for the coming year are: sponsoring six to eight classes for insurance certification, developing a certificate of completion for insurance, promoting the electrical apprenticeship program by direct mail, sponsoring

nursing assistant classes for students that are not economically disadvantaged, developing a course for food-service sanitation, coordinating a course with the Carolina-Virginia Chapter of Purchasing Mangers, and sponsoring additional total quality management workshops.

The Director of the Small Business Center works with occupational extension and small business center funds. He coordinates approximately 100 classes per year. Many of GTCC's linkages with outside organizations and agencies are maintained through the SBC, including: the Greensboro Chamber of Commerce, the High Point Chamber of Commerce, the Center for Entrepreneurship, the Minority and Women Business Enterprises for the City of Greensboro, the U.S. Department of Commerce, the N.C. Bar Association, SCORE Chapters, Greensboro Housing Authority, Piedmont Entrepreneurial Network, Triad Chapter of the World Trade Association, the Internal Revenue Service, and others. In the last survey of business center clients completed for 1984-1989: 726 new jobs were created, 200 new businesses were created, 109 businesses expanded, and 100 businesses stabilized. The Center has been serving an average of 1900 clients per year through counseling and classes. Of the 900 people enrolled in classes, five percent declined to start a business at this time due to the demands of the business environment.

The goals for the immediate future identified by the SBC Director are: to sponsor approximately 100 courses per year, upgrade the Center's equipment, continue job creation, schedule special classes for minority and women businesses, and develop the potential of multi-media through grants and other special funds.

Needs Assessment Process

GTCC has recently been involved in an institutional needs assessment of Greensboro and High Point using its own staff to implement the process. Staff members were assigned to specific organizations and personal interviews were completed with a contact at each organization. The interview process was standardized with each participating staff member following a prescribed list of questions. The Assistant Dean of Occupational Extension worked with Proctor and Gamble and AT&T. Survey forms to assess training needs are distributed at all public forums coordinated by GTCC and evaluations are completed at the conclusion of every course to gather information about local training needs.

As a result of GTCC's needs assessment, the institution contracted with an individual to complete 100 hours of direct telephone contact with Guilford County industrial firms. About three-quarters of the individuals that she has contacted by telephone are scheduling appointments for personal visits to learn about the training and educational services GTCC has to offer. The Assistant Dean hopes that 50 percent of the companies that are visited will implement some type of educational program. The Assistant Dean of Focused Industrial Training has also completed targeted needs assessments of the textile and furniture industries in Guilford County. The Division of Business and Industry Services has also occasionally done special needs assessments before implementing programs. For example, before hiring an instructor to work full-time in supervisory skills training, the division completed a comprehensive needs assessment

to determine if hiring an additional staff person was warranted. The SBC uses counseling sessions to informally assess potential students' needs.

GTCC's Division of Business and Industry Services has used four approaches in working with industry: client driven/custom designed training, modification of courses, alternative delivery, and courses targeted for special populations. The Assistant Dean of Occupational Extension/New Industry believes that the client driven/custom designed approach best describes the courses taught through the institution's New Industries program. The modification approach is employed with Expanding Industries courses and training for existing industry. Alternative delivery describes the on-site degree programs that GTCC will offer with AT&T, American Express, and Konica. Courses for special populations are most frequently offered for JTPA candidates and the unemployed; however, the institution has worked with special groups such as Industries for the Blind. The SBC has modified courses for special groups; for example, when a local company was sold, the SBC altered the Starting Your Own Business course and offered it to employees of the company. The SBC uses alternative delivery of courses working through mentors and laser disk instruction.

According to GTCC's President, the institution's three most effective industry partnerships are with American Express, Gilbarco, and with the local automobile dealers. GTCC's partnership with American Express is well-known. In 1986 when the company located a new customer service center in Greensboro, GTCC made commitments to assist American Express through the state's New and Expanding Industries program. GTCC provided customer service training for the company in its start-up phase, but the training

for American Express led to a new curriculum program. GTCC surveyed other community colleges across the country to determine if customer service degree programs were available at other community colleges across the nation. The administrative staff could not locate a single program in place anywhere, so they set out to develop a two-year degree program suited to the company's needs. In 1989, GTCC won a national award from the National Council of Instructional Administrators, an affiliate of AACJC, for providing the exemplary program in the United States with a major corporation. Today GTCC has expanded that relationship further, by being able to offer on-site degree programs at American Express and other companies in Guilford County.

In automotive technology, GTCC has established strong partnerships with both General Motors and Ford. The school operates the Ford Asset program and the GM ASEP program. The dealerships provide cars to work on, software packages, and other equipment. GTCC provides the educational training and the local car dealerships provide work experiences for the students. The alternating co-op allows a student to attend classes for one quarter, to work the following quarter, and then return to school for a quarter. Through the co-op program students attend classes and gain practical experience for a two-year period while earning wages. Employers have an opportunity to observe the students during the program and evaluate their potential for full-time employment at a later time. According to GTCC's President: "I can say over the past three years, we have placed 45 automotive students right here in the Piedmont Triad area in dealerships."

Gilbarco was the catalyst that led GTCC to become involved in total quality management. GTCC's partnership with Gilbarco has led to the implementation of a total

quality management program at the school and also impacted the institution's culture. Initially Gilbarco provided two instructors to GTCC to train the institution's top administrative employees in total quality. Since that time over 400 GTCC employees have participated in eight hours of training in quality awareness. GTCC's President visited Fox Valley Community College in Wisconsin and studied their model in total quality management and economic development before implementing the program in Greensboro.

GTCC is well-linked with many community organizations. The institution's most critical linkages are with the Guilford County Schools in promoting the Tech Prep curriculum and with the Greensboro and High Point Chambers of Commerce. GTCC in conjunction with their local Chamber of Commerce, economic developers, and local business leaders has developed a position paper on workforce preparedness. Through the collaborative effort the group developed seven objectives in workforce preparedness:

(a) Continue to build partnerships among Guilford County Schools, Guilford Technical Community College, and four-year institutions,

(b) To create a superior K-12 public education system,

(c) Make the Tech Prep curriculum available at all middle schools and high schools in Guilford County,

(d) Publicize literacy programs for adults and recruit more adults into technical training and retraining programs,

(e) Continue to increase the number of partnerships involving business and education in all educational systems,

(f) Strongly support the Engineering and Science Research Center, a joint venture among North Carolina A & T, UNC-Greensboro, Bowman Gray School of Medicine, and Winston-Salem State, and

(g) To appoint a group of community leaders representative of city and county governments, chambers of commerce, public schools, public and private postsecondary institutions, Employment Security Commission, the Private Industry Council, Department of Social Services, and others to monitor workforce preparedness (Workforce Preparedness Position "White Paper," 1993).

Community Characteristics

Greensboro and High Point are the major urban centers located in Guilford County. The county population is 354,000 with a labor force of 192,548 persons. High Point, N.C. is well-known world-wide as the site of the International Home Furnishings Market held twice yearly (Bouchey, 1993).

In 1990, Guilford County's civilian labor force numbered 191,710 persons, with employment of 184,880 persons and an unemployment rate of 3.6 percent. In 1990, 69 percent of employees in Guilford County were employed in service-producing industries and 31 percent were employed in manufacturing. Between 1980 and 1990, the Guilford County civilian labor force grew by 26,020 persons and the unemployment rate ranged from 8.1 percent in 1983 to 3.2 percent in 1989 and 1988 (ESCNC, 1992).

Educational attainment in Guilford County is higher than that of N.C. as a whole. In Greensboro, 79 percent of the population holds a high school diploma, compared with

76 percent in Guilford County and 70 percent in N.C. Twenty-one percent of Greensboro residents have completed a four-year degree, compared with 18 percent of Guilford County residents and only 12 percent of N.C. residents (A Look at Greensboro, N.C., 1992). In 1991, 3,195 students graduated from high school in Guilford County and 80 percent planned to continue their education (PTCOG, 1992).

Major Employers

The major employers in Guilford County are shown in Table 13. Public schools are the county's major employer, with a total of 6,564 employees when Guilford County, High Point, and Greensboro City Schools are combined. Colleges and universities are also a primary area employer with 2,772 employees at UNC-G and North Carolina A & T combined. City and county governments are principal employers with Guilford County, Greensboro, and High Point combined employing 5,815 persons. Health care is a leading industry employing 5,250 persons with Moses H. Cone, Wesley Long Community Hospital, and High Point Regional Hospital combined. City and county governments, education, and health care employ more persons than the county's major manufacturing employer, AT&T. Guilford County's leading textile employers include: Cone Mills Corporation, Guilford Mills, Inc., Culp Ticking, VF Corporation, and Precision Fabrics Group, Inc. The county's major furniture employers include: U.S. Furniture Industries and Leggett & Platt, Inc. When local community leaders were asked to describe the local economy, all referred to the textile industry as the community's underlying economic base. As the industry became more automated and less labor intensive, other industries began to move into the area. A Greensboro Chamber of Commerce economic developer described Greensboro's economy:

Table 13

Guilford County Employers 1993

Employer	(N)	Employer	(N)
AT&T	4,400	U.S. Furniture Industries	1,250
Sears, Roebuck & Company	4,000	Thomas Built Buses	1,250
U.S. Postal Service	3,500	High Point Regional Hospital	1,250
Old Dominion Freight Line, Inc	3,500	Culp, Inc.	1,250
Guilford Co. Public Schools	3,074	Corporate America Federal Credit Union	1,250
Moses H. Cone	2,740	City of High Point	1,250
Greensboro Public Schools	2,740	Adams-Millis	1,250
Cone Mills Corporation	2,675	VF Corporation	1,000
American Express	2,500	Ciba-Geigy Corporation	1,000
Guilford County	2,300	AMP, Inc.	1,000
City of Greensboro	2,265	Southern Bell	900
Lorillard, Inc.	2,100	Duke Power Company	900
NationsBank of N.C.	1,900	TIMCO	800
Culp Ticking	1,750	U.S. Postal Service	750
University of N.C. at Greensboro	1,500	The Fresh Market	750
Guilford Mills, Inc.	1,500	Precision Fabrics Group, Inc.	750
Gilbarco, Inc.	1,330	Leggett & Platt, Inc.	750
Jefferson Pilot Life Ins. Co.	1,300	Koury Corporation	750
N.C. A&T State University	1,272	Holiday Inn	750
Wesley Long Community Hospital	1,260	High Point Public Schools	750

Source: Piedmont Triad Regional Data Center

> . . .today Greensboro is neither identified with one kind of industry like High Point is identified with furniture nor is Greensboro identified with one kind of employer like Winston-Salem is identified with R.J. Reynolds. We are neither industry dependent or employer dependent and I think that's the key to describing the trends that Greensboro has enjoyed over time. The importance of textiles has not diminished. Several textile employers are some of the biggest in Greensboro, but over time Greensboro has become a center for many, many other kinds of businesses and not just manufacturing businesses, also warehousing and distribution businesses like K-Mart and American Express.

The diversity of Guilford County's economic base was also noted among the community leaders. An Assistant Dean at GTCC said:

> I think we are very fortunate in Guilford County that we have got such a widely dispersed industrial base. It's diverse as well as dispersed. It goes from every corner of the county and there are all kinds. Fortunately for us, furniture is no longer king. It is subject to the economic trends. We go from pharmaceutical to farm equipment, you name it. We're diverse. We're not overloaded or lopsided in furniture or textiles or any one thing. I think that makes us very fortunate.

Between 1985-1992, Greensboro successfully recruited 16 new or expanded businesses adding approximately 7,985 new jobs to the labor force. Table 14 indicates the number of new businesses moving to the area since 1985. Two of the largest employers recruited to the area, American Express and Sears Telecatalog were service industries.

Outcome Variables

As a part of the New and Expanding Industries program, a major employer in Greensboro, N.C. hopes to engage a group of "highly, trained, highly qualified employees." Although the company currently employs only four people in Greensboro, and the company's facility is under construction the company is beginning to implement a plan for training its employees. According to the company's manufacturing director:

Table 14

Major New & Expanding Business in Guilford County in 1985-1992

Year	Company	Operation	Projected Emp.
1985	American Express, T.R.S.	Service	2,300
1986	Focke and Company	Manufacturing	100
1986	Konica Manufacturing, USA	Manufacturing HQ	300
1988	Sears Telecatalog	Service	1,800
1988	TIMCO	Aircraft Maint.	800
1989	First Data Resources	Communications	750
1989	Bonset America Corp.	Manufacturing	80
1990	Kmart Distribution Center	Distribution	500
1990	AT&T Information Services	Service	75
1991	Health-tex Inc.	Apparel HQ	150
1991	Ben Cooper Inc.	Manufacturing	120
1991	Dalfort Aviation	Aviation Training	80
1991	AT&T	Manufacturing	800
1992	Dunsirn Industries	Manufacturing	40
1992	Camvac	Manufacturing	50
1992	Crellin Inc.	Manufacturing	40
TOTAL			7,985

> The benefits are obvious on the training side of it. We will through the course of this training program take resumes on the front end of it and end up with highly trained, highly qualified individuals on the other end of it. The training center will bring our employees up to about a 60 percent skill level and we'll be able to do that in we estimate about three months time. They'll all be trained consistently...

He continued the same concept later in the interview:

> ...if you're truly focused on continuous process improvement and you need to have your workforce start from a common base particularly in a start-up operation and that's one of the valuable things that this program can offer us. We have one content expert who is a good trainer and he or she will deliver the same message to 200 employees.

The value of consistent training is immeasurable, but the benefits might include greater productivity, an improved work ethic, higher quality products, less employee turnover, and ultimately greater profits for the start-up company. The company has a 110,000 square foot manufacturing facility under construction and will employ 200 workers in Guilford County with 190 of those employees hired locally. Distribution of the product will be worldwide. The Business and Industry Services Division of the NCDCC and the company are working together to develop a training center with a simulated manufacturing environment so that prospective employees will be trained using the equipment that will be used in the manufacturing process.

GTCC's President recommended five outcome measures that should be considered in evaluating the effectiveness of economic development programs: graduates working in occupations for which they were trained, college responsiveness to local needs for

retraining, the rate of in-migration vs. out-migration, the economic impact of the community college, and growth in the number of jobs in a community. GTCC uses the DACUM process (Developing a Curriculum) to develop training for business and industry, and the school has had over 500 people on their campus participating in DACUM workshops. According to GTCC's Assistant to the President for Economic Development and Corporate Services:

> ...we look at where people are and what competencies we want to achieve with this training program and basically develop a checklist so that everyone who goes through the training is able to perform a particular skill level. The other type of outcome is feedback to determine if the organization or company feels like the training accomplished what it set out to accomplish. That would be in areas, not in skills training areas, more in the conceptual areas, the management training, and supervisory skills. Those are skills, but there are a lot of conceptual things involved; enhanced awareness, those kinds of things. We rely on the company to say if we accomplished what we set out to accomplish...

The Assistant Dean of Occupational Extension/New Industry Training in assessing effectiveness of economic development programs recommended two measures be considered: number of jobs created and capital investment. He said: "Those are the two criteria that the state uses to measure the effectiveness of economic development so I suppose we could do the same thing in terms of the companies with which we have become aligned."

A Greensboro Chamber of Commerce economic developer felt that the only outcomes considered in evaluating training should be a targeted survey directed to the company participating in the training program. He explained:

> ...customized labor training is done for the sake of the companies that are using the service. I would think that the best and the only measure would be their satisfaction. In that regard, did we do what we contracted to do? Was it done on time? Was it done on budget? Was it done with a minimum of confusion and miscommunication? Was it effectively done?

GTCC has benefitted from its linkages to business and industry through gifts. American Express donated $17,500 to promote the Tech Prep program in the community. The funds will enable faculty from the public schools and GTCC to meet together periodically to discuss curriculum improvement. In High Point a business leader's family donated $10,000 to provide scholarships for the Tech Prep program. Cone Hospital donated over $30,000 to assist GTCC to begin a surgical technology program.

GTCC has been impacted by industry, with the most notable example being American Express. GTCC extended its service to the industry through the state's New and Expanding Industries program, but the link did not end there. The community college implemented a two-year curriculum program in customer service to continue to meet the company's needs. GTCC's President explained the linkage:

> ... today we still have that program going and that program continues to provide jobs not only to American Express (but also) for banking industries and others that use customer service representatives. I think that's a perfect link and a direct development of economic development where we have taken ideas from business and industry; they work with us. We develop a program.

The on-site degree program offered by GTCC for American Express, Konica, and AT&T illustrates that GTCC continues to respond to the needs of local employers.

Education and training affects the quality of work life for employees through quality management programs and team building programs. According to the Assistant Dean of Occupational Extension/New Industry:

> I think we are having a significant and real world impact on how people function, in terms of management how they manage their employees, in terms of employers, how they become more involved in their industries through this total quality management development that we're offering here. It's really having some impact.

The SBC has had a significant impact in Guilford County. The Center for Entrepreneurship and the Piedmont Entrepreneurs Network are both direct results of the director's efforts. Table 15 summarizes the service to business and industry provided by GTCC from 1987-88 through 1991-92. The data show fluctuations in the level of service provided and the number of students enrolled. Table 15 shows that in 1988-89 and 1989-90 GTCC's enrollment in the New and Expanding Industries program peaked. Table 16 shows that a greater number of firms were also served during those years as well. Table 15 also illustrates a strong institutional commitment to small business training and development. In Greensboro, a few examples about the college's impact on the community's quality of life were cited. The City's Manager of Economic Development said: "... the case of Konica and American Express, those were companies that I don't think would have located here had there not been a commitment for education." A Greensboro Chamber of Commerce Economic Developer summed it up by saying:

> I think the ultimate goal of economic development is to upgrade the pay scales in the area, the skill levels in the area...When you've got low wages, low skills, a low education type of population, then the best you are going to look for is the Family Dollar Store, an occasional Eckerd's and a gas station and a barber shop. The areas that are viewed as nice places to live, nice places to be, are places where things going on are those cities where the population has more disposable income.

Table 15

Service to Industry at Guilford Technical Community College

	Years				
Program	1987/88	1988/89	1989/90	1990/91	1991/92
FIT					
Industries Served	26	-	13	50	85
Students Served	298	-	397	333	258
Courses Offered	26	-	42	34	28
SBC					
Enrollments	1,081	1,185	2,399	2,002	1,548
Counseling	946	1,172	863	304	3,206
Seminars/Workshops	52	73	118	126	95
New and Expanding Industry					
Students Served	1,067	5,185	6,116	2,765	895
Industries Served	12	14	17	12	6
Number of Expansions	2	1	2	3	3
Total New and Expanding Industry Budget	$1,152,290	$2,576,217	$2,215,782	$1,013,094	$200,546

Table 16

Participating Firms in the New and Expanding Industries Program at Guilford Technical Community College

Years				
1987/88	1988/89	1989/90	1990/91	1991/92
Alloy Wire Services	American Express	American Express Card Center	American Express Card Center	TIMCO
American Express	CEMA/Capital Records	American Express Fulfillment	American Express Fulfillment	Panel Concepts
Durex Products	Fieldcrest Cannon	AT&T - Eagle	AT&T - Eagle	Sears Credit Central
Focke & Co., Inc.	Karastan-Bigelow Div.	Bonset of America	Bonset of America	Culp, Inc.
Hyundai, Inc.	First Data Resources	Lee Carpet	Burlington House Draperies	American Express
Konica Mfg., USA	Focke & Co., Inc.	CEMA/Capital Rec.	Burlington Inds.	AT&T
Levelor Lorentzen	Levelor Lorentzen	Konica Mfg., USA	Lee Carpet	
Meredith/Burda	Meredith Burda	MAC Equipment	Kayser Roth Direct Fulfillment	
Proctor & Gamble	Proctor & Gamble	Meredith Burda	KAO Corp. of America	
Stockhausen, Inc.	Sears Repair Ctr.	Polo Ralph Lauren	Konica Mfg., USA	
Torik, Inc.	The Telephone Ctr.	Proctor & Gamble	Sears Credit Central	
TRW	Torik, Inc.	Sears Marketing Center	Sears Marketing Center	
	TRW Steering	Sears Repair	TIMCO	
		Sears Telecatalog		
		The Telephone Center		

Cross–Case Analysis

Through the review of the literature, prior research, and the field work for this study, the researcher identified 13 indicators and 6 outcome measures that may be used to gauge an institution's effectiveness in economic development. The effectiveness indicators are: commitment of the president and the college community, the mission statement, institutional organizational structure, number and quality of the administrative staff, the instructional staff, institutional responsiveness including timeliness and thoroughness, allocation and focus of budget resources, business and industry partnerships, commitment to community-based education, level of service and strength of programs, and competency-based instruction. The effectiveness indicators could be used as a means to certify community colleges that would like to demonstrate their effectiveness in economic development.

The outcome measures identified to gauge the success of an institution's economic development programs include: recruitment and training of new business; retention and advancement of existing business; growth and training of small business persons; gifts, foundation and community support; contiguity with curriculum programs; and the economic vitality of the community. Some outcome measures are directly controlled by the community college, others are a result of trends in the local economy. All of the institutional indicators and institutional outcomes have been defined and appear in Appendix D. Also the researcher rated the three institutions on a scale of one to five on each of the indicators and outcomes, with a score of five being the most effective and a score of one being the least effective. Results are located in the Findings section of the study in Chapter 5.

Institutional Indicators of Effectiveness in Economic Development

Commitment of the President and the College Community

A strong commitment to economic development was exhibited by presidents of all three community colleges. Two of the sites, GTCC and ACC, were Industrial Education Centers prior to the passage of the state's Community College Act of 1957 (Wiggs, 1984). These college presidents alluded to a commitment to the economic development concept from the inception of their institutions. Excerpts from the three presidents indicated that community colleges have an important role in economic development in their communities. Selected quotes from each president concerning their comments on the role of community colleges in economic development are shown in Table 17.

Mission Statement

Each institution's mission statement refers to economic development. All segments of the mission statements relating to economic development are shown in Table 18. The staff at PCC identified economic development as a major purpose of the institution. The philosophy and purpose of ACC do not directly mention the term economic development, but do however mention short-term, concentrated instruction to improve job skills and skill-specific training for new and expanding and existing industries. GTCC's mission statement includes the term economic development and refers to "its role as an instrument of service and economic development to the community as a whole" (GTCC General Catalog, 1991-1993 p. 12). The purposes of GTCC also include industry training and retraining which reflects an institutional commitment to the economic development of the service area.

Table 17

Excerpts from Interviews with Presidents of Piedmont Triad Community Colleges

Case 1	Case 2	Case 3
We are a key and vital player in economic development in the community. When Governor Hunt and the president of the company came for the announcement earlier this year, the college was cited as being the key factor in the location because there was one other community in North Carolina in the running and one other community in Virginia.	In a way it pervades everything we do. We impact economic development every time we teach a student. More broadly our role in economic development ought to be working with all of the agencies in the area and in the state so that the things that we do are well coordinated with regional and state goals and are working together to help current business and industry, to help new business and industry, to help employees get the training to fill the jobs for new and existing businesses and industry. As long as we coordinate that effort of what's really needed, then I think we are performing the proper role. There's always been a role, even when this institution started out in 1958 as an Industrial Education Center. I think even that was seen as a significant development for the economy in the area because trained manpower was a problem even then.	I believe the community college's role should be very proactive. I think I have to go back to the establishment of the community college system in the earlier days, particularly back in 1958 when we established the five Industrial Education Centers which GTCC was one of those five. I think from the very inception from 1958 to the present our role has been to serve business and industry and to play a role in economic development that takes a couple of avenues—one being for new industry, to help new companies locating in our area to be able to have a productive workforce when they begin and secondly, I think the whole retraining initiative is very important in the role of community colleges and certainly with the technological changes that are occurring in our society today then we have a large role to play in assisting the companies and making the necessary adjustments to compete competitively in a world market.

Table 18

Excerpts from Missions of Piedmont Triad Community Colleges

Case 1	Case 2	Case 3
A major purpose is to serve as a catalyst for the economic development of the service area, which includes Person and Caswell counties, located in the North Carolina Piedmont. Under specific purposes: To provide programs, courses and services to support the economic development of the region (Piedmont Community College General Catalog and Student Handbook, p. 10).	Under purposes of the college, ACC identifies: To provide short-term, concentrated instruction designed to help individuals improve their occupational credentials, upgrade job related skills, and enhance their abilities to function as productive human beings. To provide specific, job-oriented training for new, existing, and/or expanding industries/businesses (Alamance Community College General Catalog 1993-95, p. 7).	Guilford Technical Community College believes in the worth and dignity of each individual, and the importance of quality education to a democratic society and its role as an instrument of service and economic development to the community as a whole. The college has identified under opportunities: Business and industry training services to provide course occupational upgrading and retraining of skills for employees of Guilford County to promote the economic growth of the community (Guilford Technical Community College General Catalog, 1991-1993, pp. 12-13).

Organizational Structure

The organizational structure for economic development at two of the community colleges ensures a direct line of communication to the president. GTCC has organized its business and industry training services under an Assistant to the President for Economic development and Corporate Services shown in Figure 1. The direct line to the president indicates an institutional commitment and concern for economic development. At GTCC the function is centralized ensuring that a business and/or industrial client would only need to make a single request for training. Any request can be channeled through this institutional office, constituting one-stop shopping for the business or industrial client. At PCC all economic development-related services are organized under the Vice-President for Business/Industry Affairs and Adult Community Education. Under the organization of the Vice-President, four directors and two coordinators operate the programs for business and industry training. A direct link to the president is also present in this organizational chart shown in Figure 2. At ACC, there is not a formal link between economic development and the president within the present organizational structure. The instructional services for business and industry training are organized under a Director of Continuing Education who reports to the Dean of the College, shown in Figure 3. The president does not have a formal line of communication with a business/industry liaison. All communications related to economic development and business and industry training are channeled through the institution's dean. The three directors working with economic development have indicated that they can meet with the president if necessary.

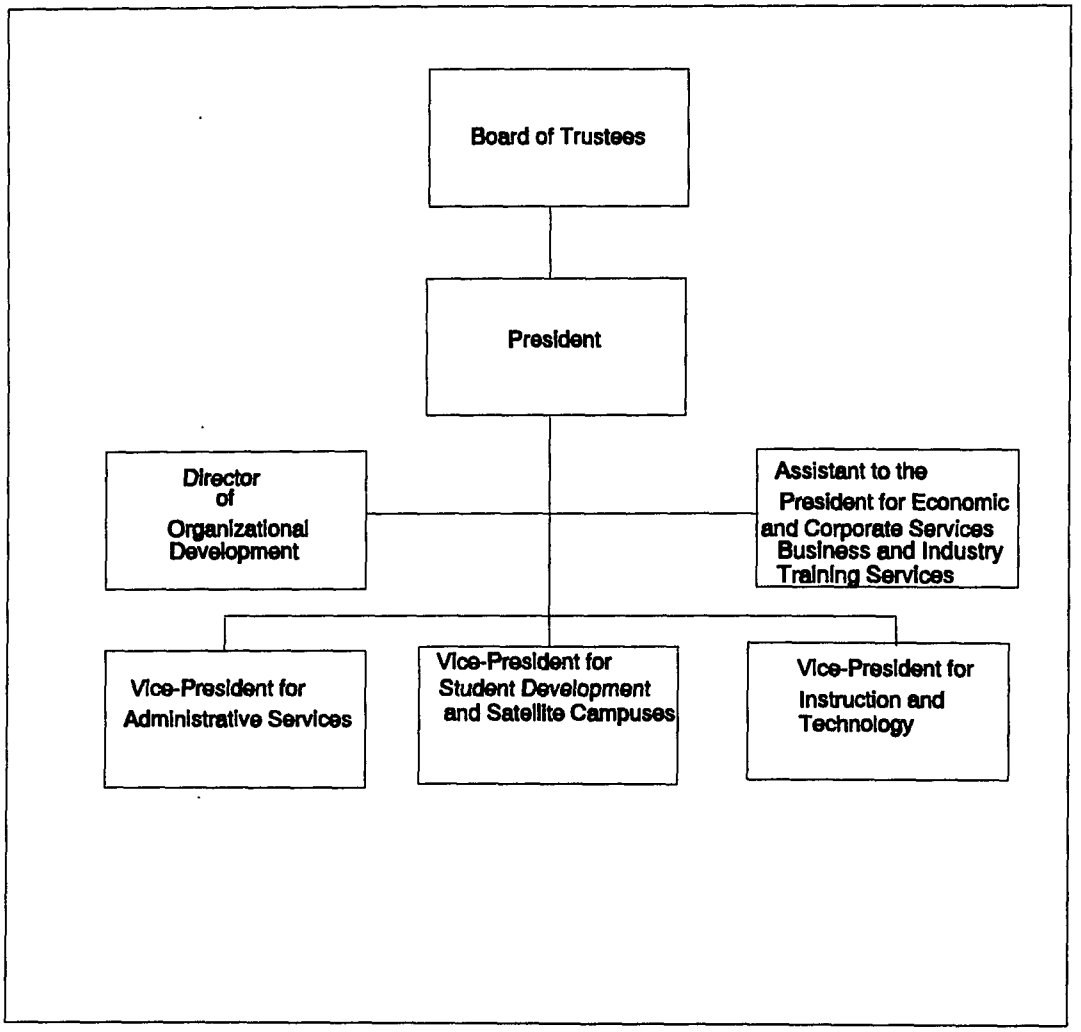


Figure 1

Guilford Technical Community College Organizational Chart

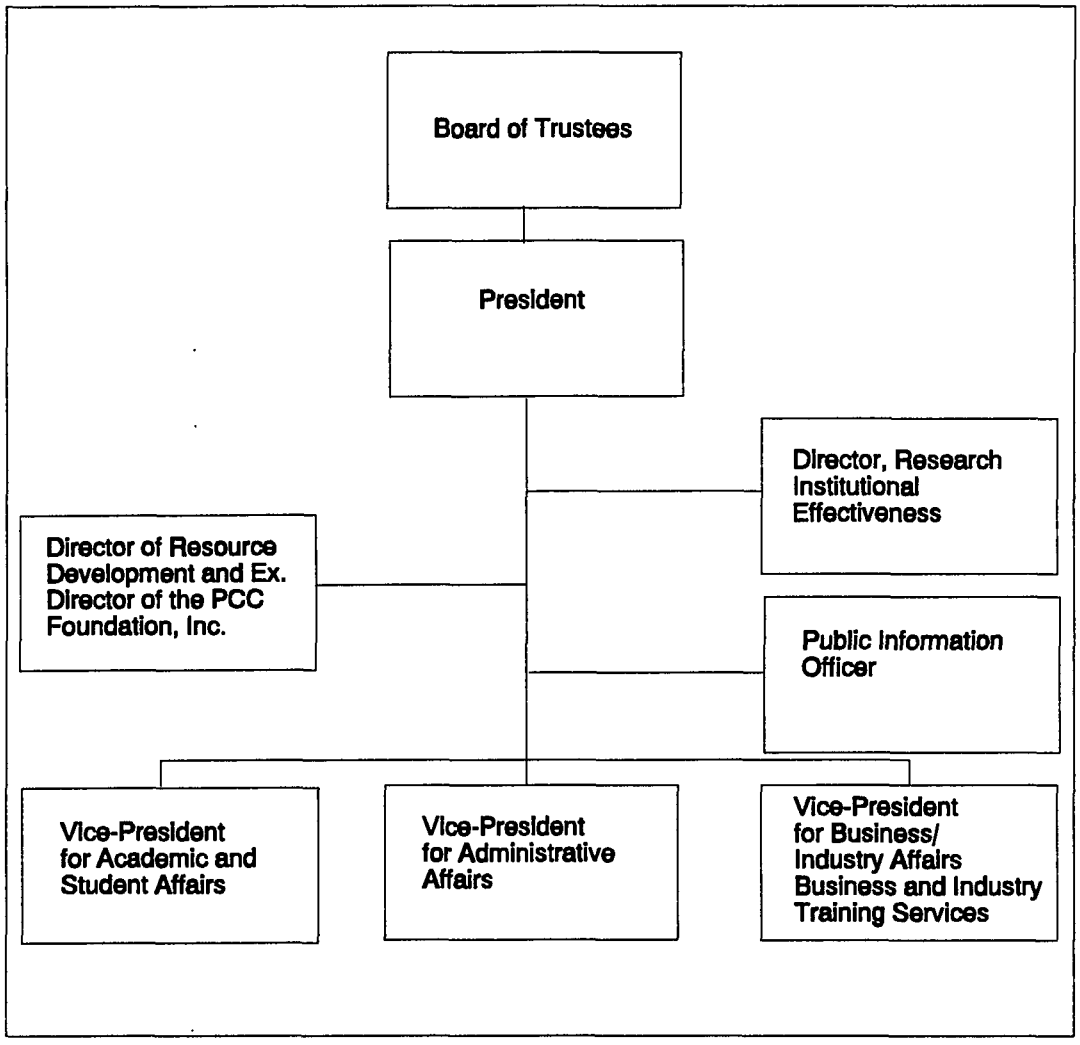


Figure 2

Piedmont Community College Organizational Chart

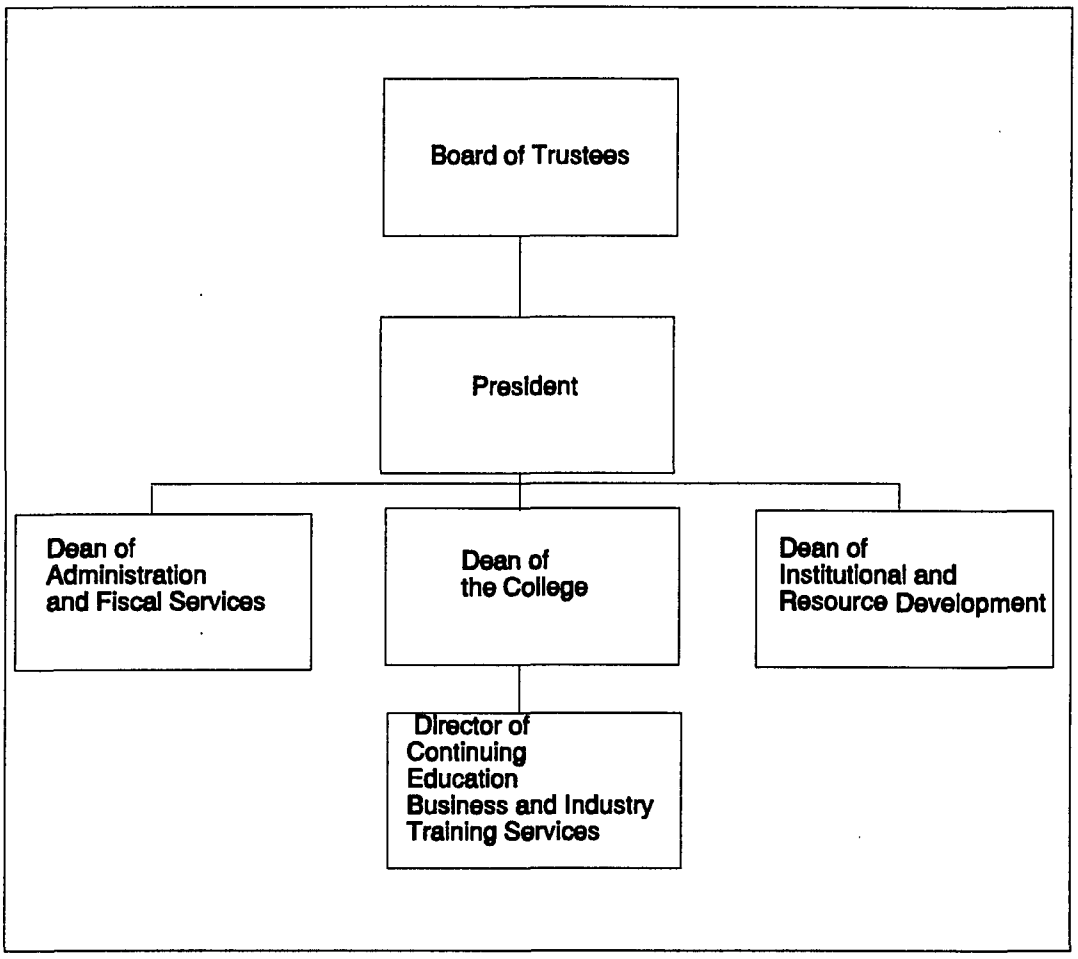


Figure 3 Alamance Community College Organizational Chart

Number and Quality of Administrative Staff

The number of administrative staff personnel working with business and industry training at each institution do not differ significantly, although the labor force of each community varies greatly in size. At PCC there are two directors: the Director of the Small Business Center and the Director of Industry Training Services working with Business and Industry Training. The Vice-President for Business/Industry Affairs and Adult Community Education also works with economic development and coordinates special projects. At ACC, five staff members coordinate economic development programs: Director of the SBC, the Director of Industrial Training, the Director of FIT, the Director of Off-Campus Credit Courses, and the Director of Continuing Education. At GTCC, the largest of the institutions, four administrative staff members are responsible for business and industry training programs: the Director of the SBC, the Associate Dean of Focused Industrial Training, the Associate Dean of Occupational Extension/New Industry Training, and the Assistant to the President for Economic Development and Corporate Services. Although GTCC has the largest program in terms of clients served, participating students, participating industries, and the labor force it serves, the institution does not have the largest administrative staff.

Instructional Staff

The instructional staff used by the institutions in business and industry training programs varied significantly. GTCC was the only institution to use a staff of full-time instructional personnel. The institution currently employs five full-time staff in occupational extension: two woodworking instructors, a total quality management instructor, a supervisory skills instructor, and a computer science instructor. The school plans to add a sixth instructor in the near future. PCC, a smaller school, uses a different approach, primarily drawing expertise from its full-time faculty. Full-time instructional personnel are offered business and industry teaching opportunities before part-time instructors are called upon. At ACC, use of full-time instructional personnel is limited; program directors must instead rely on a cadre of part-time instructors and contract trainers to implement programs.

GTCC's Assistant to the President for Economic Development addressed the college's commitment to economic development and the rationale for employing full-time instructors:

> We have five full-time faculty who go out and work with business and industry on a full-time basis. We're the only one that I know of in North Carolina that does that. The reason for that is to ensure quality, and second of all we make sure that we can meet certain goals in the community. We do have full-time people designated for that. We have the largest budget and money talks; that's what indicates to me it's a very important role.

In contrast the Director of Industry Training at ACC talked about his institution's use of full-time instructors: "The expertise lies with full-time faculty. We have it and so do you. I have a hard time getting them to teach anything for me...So I think that would greatly improve the quality of our programs."

Competency-Based Instruction

At the three schools visited, only GTCC employs the DACUM (Developing A Curriculum) process throughout the institution in designing both short-term and long-term instructional programs. Through the DACUM process a panel of experts is chosen to analyze subtopics related to a problem until they achieve consensus. The subtopics are arranged in chart form so that they relate to the initial problem. The DACUM process may be used to assess needs, develop curricula, develop competencies, and establish job descriptions (Grossman and Duncan, 1988). GTCC utilizes the DACUM process extensively to develop curricula and establish job competencies. Upon completion of a training program, individuals are expected to demonstrate selected competencies. Neither of the other community colleges employs the DACUM process. At PCC the staff use an open-ended approach in delivering programs, discovering client needs and adapting programs to their needs. According to the Director of Industry Training, PCC uses job analysis to structure some of its training. He said:

> One of the most effective ways we've done job analysis is through a train the trainer program where we have someone who comes in and actually does a seminar and they do job analysis that way. The other way we've done an actual needs assessment survey where we talk about the major job categories and then get what they need and then take it from there.

At ACC, no attempt was made to do job analysis by the directors working with industry training. They relied on the instructors as technical experts who were responsible for facilitating job analysis or the DACUM if it was completed.

Institutional Responsiveness, Timeliness, Thoroughness, and Outreach

The composite area of institutional responsiveness, timeliness, thoroughness, and outreach was ascertained through the interviews with community and institutional leaders. PCC serves the smallest labor force, but covers the largest geographic area. Among the three institutions, PCC is the most responsive institution and supports the strongest outreach effort. Directors contact industry and community leaders on a weekly or daily basis, as needed to keep in contact. According to an area plant manager:

> We've moved in the direction of work-teams or empowering employees. They have been a tremendous assistance to us. It would have been difficult to make changes within our work environment such as empowering employees without the training provided by PCC. We have enjoyed an outstanding working relationship with PCC from the President and his staff. They've been very instrumental in our success over the last three or four years.

The County Manager in Caswell County talked about the breadth of service offered by the community college:

> When you look at the numbers at a place like this, they provide programs in over 29 facilities: prisons, factories, you name it. They may even go to a fire house. I guess it's the breadth of contact....The diversity and the breadth of applications it's tremendous, at least in this county.

The outreach efforts of ACC are excellent. Classes are offered at approximately 50 locations throughout the county. ACC operates an ongoing outreach program primarily through personal contacts, maintained by the program directors. In talking about ACC, the President of the Alamance County-Wide Chamber of Commerce said:

> I think it's been responsive to the changing times and at the same time has listened to what business and industry wants and needs. For example, the tremendous growth of Roche Biomed here in the medical criminology field has caused our community college to really get into that in a big way to meet the needs of Roche.

GTCC, a large community college serving a sizable service area, maintains an ongoing outreach program for business and industry. Through the president's efforts the entire administrative staff stays in touch with industry needs through industry tours and interaction with business, industry, and community leaders.

Linkages with the Community

Strong community linkages are a foundation for economic development. PCC maintains strong linkages with Chambers of Commerce, city and county governments, public schools, and economic development commissions. PCC has assumed a catalyst role in moving Person and Caswell Counties forward through assisting in county-wide strategic planning and development of county-wide leadership programs. Community linkages at ACC are not as strong as at PCC. In some instances the college staff have not been informed about new industry projects until they were publicly announced at a ground breaking. Perhaps this is more a reflection of the secretive nature of the economic development process rather than an indictment of the community college. ACC maintains relationships with the Small Business Council of the Chamber of Commerce, Burlington Downtown Corporation, the Agricultural Extension Service, and the Employment Security Commission.

GTCC is linked with many community agencies and organizations including: the Guilford County Schools, the Greensboro Chamber of Commerce, High Point Chamber of Commerce, the Small Business Consortium of the Greensboro Chamber of Commerce, the Center for Entrepreneurship, the Minority and Women Business Enterprises, the Triad Chapter of the World Trade Association, N.C. Bar Foundation, SCORE, the Greensboro Housing Authority, the IRS, Department of Labor, Employment Security Commission, area universities, JTPA, Carolinas Construction Training Council, United Services for Older Adults, National Housekeeper's Association, and other community-based organizations.

Allocation and Focus of Budget Resources

Each community college selected for this study offers its communities more than one campus, suggesting a high degree of commitment to the concept of community-based education. At PCC, the college maintains dual campuses with a site in Roxboro and a satellite campus in Yanceyville. PCC staffing indicates a major commitment to economic development. At ACC, the administrative staff of five indicates an increase in staffing tailored to the increase in the labor force. However the institutional support for full-time faculty is lacking. Classroom space for the operation of industry-related training programs is also a problem. At GTCC, the institution provides an instructional staff of five, but an administrative staff of four. This case may reflect a trade-off where a reduction of administrative staff was necessary to fund the full–time instructional staff. Guilford County has also recently passed a bond referendum that will help GTCC to update equipment and build an advanced technology center.

Business and Industry Partnerships

All of the community colleges exhibited evidence of strong business and industry partnerships. Although PCC serves a small labor force, the strength and depth of the institution's partnerships are exceptional. ACC serves a large metropolitan region with a diverse labor force. This institution has contributed much to the economic vitality of Alamance County primarily through the operation of successful New and Expanding Industries projects and in-plant training. GTCC serves the largest labor force of the three and has initiated and maintained a variety of ongoing partnerships with the medical community, dentists, automotive dealers, manufacturers, and service organizations.

Commitment to Community-Based Education

The Piedmont Triad community colleges selected for this study are engaged in environmental scanning and setting goals as identified in Boone's model for community-based education (Vaughn and Gillett-Karam, 1993). PCC exhibited the greatest evidence of involvement in environmental scanning, having been involved in the strategic planning process in both Caswell and Person Counties. ACC exhibited the institutional capability to respond to the needs of the community, but did not demonstrate a significant level of environmental scanning. The staff are currently developing innovative, community-based programs that will propel ACC forward in the years ahead. GTCC exhibited the strongest commitment to the concept of community-based programming through its participation in the ACCLAIM project as a pilot institution sponsored by N.C. State University. Over a three-year period administrators at GTCC will be training the community college's entire staff in the ACCLAIM model.

Institutional Outcomes in Economic Development

Gifts, Foundation, and Community Support

Each community college selected supports a foundation and each college president cited examples of gifts of money, equipment and supplies and materials from business and industry that have benefitted their schools.

The PCC foundation was chartered in 1978 to support the advancement of the community college. The Foundation board at PCC has supported a variety of projects including: awarding of scholarships of $130,400 to 369 students, development of a short-term loan fund of $3,000 for PCC students, a contribution of $16,000 for equipment, and funded nine projects on the Person and Caswell campuses. The President's Club of approximately 200 members generates dues of $50,000 annually for the Foundation. In 1991, the PCC Foundation, Inc. endowment was valued at approximately $515,000 (Piedmont Community College Fact Book, 1990-91).

ACC established its foundation in 1983 and since that time has received 8,968 donations (Meeting The Challenge, 1991-92). During 1991-92 a campus fund drive generated $46,987.00, an Endowment Plus program generated a cash value of $61,000, and Roche Corporation contributed $18,000 to an endowment fund of its own (Alamance Community College Annual Report, 1991-92).

A foundation report was not available from GTCC; however, the President did cite examples of gifts of money and equipment that were made to the school. Most recently the school has received donations that will publicize and promote the Tech Prep program.

Recruitment and Training of New Business

Both Alamance and Guilford Counties have benefitted from industrial recruitment, relocations, and locations of new firms to their counties. Economic developers have been successful due to the availability of land, a good infrastructure, and the availability of skilled labor. PCC's role in economic development has been to support expansions of existing industries. Between 1987-1992, the institution assisted one to four industries per year expand, enrolling 128-344 students. Over the five-year period, PCC supported 14 industry expansions, relocations, or locations. ACC has supported as many as 11 projects during a single year. Over the five-year period, ACC assisted 27 firms and enrolled 3,739 students. Almost half of the projects supported by ACC were expansions, except during one year. GTCC exhibited the highest degree of activity in the New and Expanding Industries program. During the period between 1987-88 through 1991-92, there was only one year in which GTCC served fewer than 12 firms. During this time frame, a total of 16,028 employees were enrolled in the program. It seems natural that Guilford County would serve the largest number of employers and employees since GTCC serves the largest labor force of the three institutions.

During the period studied, PCC trained 1,237 persons from a combined Person and Caswell County 1990 civilian labor force of 25,130 persons or 4.9 percent of the total. At ACC, 3,739 persons received training through the state program, 5.7 percent of the 65,440, 1990 civilian labor force of Alamance County. In Guilford County, GTCC trained 16,028 persons or 8.4 percent of the Guilford County 1990 civilian labor force of 191,710 persons.

Retention and Training of Existing Business and Industries

Retention and training of existing industries is measured through enrollments in the Focused Industrial Training program. Administration of the program varies from school-to-school so these measurement indicators are flawed, but at this time represent the best measurement tool available. Since this program generates no budget FTE, many program administrators opt to budget training for large groups of individuals or industries from occupational extension funds that do generate budget FTE. Program enrollments in the FIT program are generally lower across the board than those in the New and Expanding Industries program. At PCC, the number of industries served ranged from 14-46, and the program history shows a decline in the number of industries served each year. Enrollment in the program peaked in 1989-1990. As a percentage of the 1990 civilian labor force of Person and Caswell Counties, enrollment in the FIT program for the period was 10.2 percent of the combined counties' labor force. At PCC, enrollments in the FIT program outstripped enrollments in the institution's New and Expanding Industries program.

At ACC, data were not available for the five-year period, but the institutional data show that enrollment in the FIT program for the three years numbered 513 students. As a percentage of the Alamance County labor force, the institution enrolled less than one percent of the 1990 civilian labor force of the county. The institution emphasized its in-plant program with large numbers of students and programs offered during the five-year period.

At GTCC, FIT enrollments for the four-year period totaled 1,286 students. The institution enrolled less than one percent of the Guilford County 1990 civilian labor force. The number of industries served each year varied widely ranging from as few as 13 to as many as 85.

This analysis indicates that the New and Expanding Industries program is having a greater impact on the economy of the service areas than the FIT program in two of the three cases. At PCC, the institution serves a substantially smaller labor force than Alamance or Guilford Counties so the institution is making a greater impact on the economy of its service area. In contrast, both Alamance and Guilford are metropolitan counties and both institutions devised methods to shift business and industry instructional programs to enrollment-based programs that are more profitable for their institutions. At ACC, the institution shifted large numbers of students to its in-plant program until participation in that program was restricted by the legislature. At GTCC, program administrators were able to shift enrollments to the school's occupational extension program by supporting a full-time staff and maintaining a responsive stance. The impact of the FIT program is not apparent from examining only those program records.

Growth and Training of Small Business

Measurements from the SBC's at each institution show that Guilford enrolled the largest number of SBC clients and counseled a larger number of clients than did PCC or ACC, as would be expected. Over the five-year period, for which enrollment data were available, GTCC served 14,706 persons or 7.7 percent of the county's 1990 civilian labor force. PCC enrolled 2,556 persons or 10.2 percent of the 1990 civilian labor force of

Person and Caswell Counties. At ACC, the SBC records reflect that the institution enrolled 1,485 students for the three years for which data were available, 2.3 percent of the 1990 civilian labor force of Alamance County. A benchmark of five percent of a county's civilian labor force might be an acceptable level of program enrollment. Program enrollments do not tell the entire story. Numbers of new business starts are another way of measuring the impact of the Small Business Centers.

Economic Vitality of the Community

The economic vitality of the community was measured by the Composite Ranking of Economic Development developed by Dr. James W. Kleckley. The composite ranking is made up of nine components: change in employment, per capita income, change in per capita income, unemployment rate, change in the unemployment rate, per capita retail sales, change in per capita retail sales, per capita food stamp recipients, and change in per capita food stamp recipients. Table 19 shows the nine components for each of the cases. Employment growth was highest for Person County, followed by Caswell County. Guilford and Alamance showed lower rates of employment growth, 2.99 percent and 1.79 percent. Per capita income was highest in Guilford County at $23,044.00 followed by Alamance at $18,770.00. Per capita income was significantly lower in Person County at $13,560 and $11,983.00 in Caswell County. The growth of per capita income from 1982-1992 followed the same pattern, with higher rates of growth in Guilford followed by Alamance, Person, and Caswell Counties. Alamance County had the lowest unemployment rate in 1992, followed by Guilford County, Caswell County, and Person

Table 19

Components of the Composite Ranking of Economic Development

	Cases		
	Person/Caswell	Alamance	Guilford
Employment Growth 1982-1992	6.02/3.28	2.99	1.79
Per Capita Income 1992	13,560/11,983	18,777	23,044
Per Capita Income Growth 1982-1992	6.11/5.82	6.35	7.27
Unemployment Rate 1992	7.75/5.71	4.56	5.27
Unemployment Rate Absolute Change 1982-1992	-3.34/-5.95	-6.65	-2.10
Per Capita Retail Sales	3,865/1,806	9,474	15,472
Per Capita Retail Sales Growth	3.74/2.61	3.98	4.94
Per Capita Food Stamp Recipients 1992	12.34/11.58	5.21	7.13
Change in Per Capita Food Stamp Recipients 1982-1992	-2.26/-4.25	-.43	-.55

Note: From The Economic Development Yearbook for North Carolina: 1993 (pp.8-24) by James W. Kleckley, 1993, Greenville, N.C.: Problem-Solving Research, Inc. Copyright 1993 by Problem-Solving Research, Inc.

County. Alamance County also showed the greatest change in unemployment between 1982 and 1992, followed by Caswell, Person, and lastly Guilford County. Per capita retail sales indicate that the strength of Guilford County's retailers is at four times the rate of sales in Person and eight and a half times the rate of retail sales in Caswell County. Clearly Person and Caswell Counties lack a strong retail base. Per capita retail sales growth is also strong in Guilford followed by Alamance. Over 12 percent of the Person County population receive food stamps, followed by 11.58 percent of the Caswell County population and Guilford at 7.13 percent of the population. Alamance has the lowest rate of per capita food stamp recipients with only 5.21 percent of the population receiving food stamps. Caswell County, followed by Person has shown the greatest change in food stamp recipients between 1982-1992; rates in Guilford and Alamance Counties have showed little change.

The composite rankings for the four counties during a ten-year, five-year, and one-year period are shown in Table 20. Guilford County has had the strongest sustained ranking over the ten-year period of any of the four counties. For the ten-year period, Alamance ranked two places above Guilford County at a rank of five, compared to Guilford's rank of seven. Caswell and Person Counties ranked much lower than Alamance and Guilford Counties during each of the time periods. Caswell County also ranked higher than Person County in each of the comparisons.

Table 20

Composite Ranking of Economic Development

Counties	One Year	Five Year	Ten Year
Alamance	18	19	5
Guilford	4	9	7
Caswell	66	38	62
Person	81	68	69

Note: The Composite Ranking of Economic Development is a comprehensive economic measurement tool developed to compare the growth of N.C.'s 100 counties. A ranking of one indicates the highest growth during the period; and a ranking of 100 indicates the lowest growth. Rankings for the 100 counties are provided for one-year, five-year, and ten-year periods.

From The Economic Development Yearbook for North Carolina: 1993 (p.2) by James W. Kleckley, 1993, Greenville, NC: Problem-Solving Research, Inc.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FURTHER STUDY

This chapter presents a brief review of the study, including the research problem and the research design. The findings of the study, conclusions, and the grounded theory are also examined. Finally, recommendations for further study are presented.

Summary

This study was designed to explore the effectiveness of Piedmont Triad community colleges in economic development, workforce preparedness, and job training through nontraditional educational programs. The study focused on three educational programs offered through the North Carolina Community College System (NCCCS): New and Expanding Industries program, the Focused Industrial Training program, and the Small Business Center. Another purpose of the study was to identify ways that Piedmont Triad community colleges could improve economic development, workforce preparedness, and job training to prepare for a changing economy. A panel of 20 experts was chosen to select the three most effective community colleges operating in the Piedmont Triad region of N.C. The researcher visited the three community colleges chosen for the study, interviewed community college staff and community leaders, and compared and contrasted program records. An instrument was developed by the researcher for the purpose of cross-comparison. As a result of the study, 13 indicators and 6 outcomes were identified to measure the effectiveness of N.C. community colleges in economic development. The

community colleges were ranked on each indicator and outcome measure based on the evidence presented. The effectiveness indicators and outcome measures may be used by other community college personnel to evaluate their economic development program efforts.

North Carolina was the first state in the nation to develop a statewide customized training delivery system administered through its community college system whose purpose was aimed at economic development. Shortly after developing this program, the North Carolina Department of Community Colleges staff developed other instructional programs designed to boost the state's economic development. The FIT program was designed to assist manufacturing companies needing educational assistance; and the SBC was developed to promote entrepreneurial development at a time when employment growth in large companies was slowing. Since these programs were developed remarkable changes have occurred in the business environment and the economic development process. Competitive business pressures have increased the need for education and training. Today labor training is no longer viewed as an incentive but rather is an expectation because training is a standard part of industry recruitment packages. The economic development process itself has become so secretive that it may hamper community college involvement in the process. Sometimes community college staff are brought in at the end of the recruitment process rather than at the inception of the process.

Findings

Based on the indicators, GTCC ranked as the most effective community college in economic development, followed by PCC and ACC. Each of the community college's institutional indicators are shown in Table 21 and the institutional outcomes are shown in Table 22. GTCC's score of 62 on the institutional indicators and 27 on the outcome measures, indicates that the institution was the most effective among the three community colleges that were studied. A perfect score of 65 was possible on the indicators and 30 was the highest achievable score on the outcome measures for economic development. PCC received a score of 59 on the institutional indicators and a score of 24 on the institutional outcome measures. ACC received a score of 43 on the institutional indicators, and a score of 23 on the outcome measures. The three community colleges ranked consistently high on three indicators: commitment of the president and the college community, linkages with the community, and commitment to community-based education. These three institutional indicators are a prerequisite to effectiveness in economic development. The greatest weakness exhibited by the colleges was in their lack of instructional staff. ACC ranked low on this measure, relying primarily on contract trainers, part-time staff, and administrative staff to teach classes.

The three community colleges ranked highest in recruitment and training of new industry with regard to the outcome measures. Each institution sustained an impressive record of service in working with existing industries in expansions and also in serving new companies. Among the outcome measures, economic vitality of the community ranked low with a score of twelve primarily due to the weak economy in Person and

Table 21

Institutional Indicators of Effectiveness in Economic Development

Categories	Cases			
	1	2	3	Total
Commitment of the President and the College Community	5	4	5	14
Mission Statement	5	3	4	12
Organizational Structure	5	3	5	13
Number and Quality of Administrative Staff	3	4	5	12
Instructional Staff	4	2	5	11
Competency-Based Instruction	4	3	5	12
Institutional Responsiveness Timeliness, Thoroughness, and Outreach	5	3	5	13
Linkages with the Community	5	4	5	14
Allocation and Focus of Budget Resources	4	3	5	12
Strong Business/Industry Partnerships	4	4	5	13
Commitment to Community-Based Education	5	4	5	14
Level of Service and Strength of Programs	5	3	4	12
Proactive Approach with Collaborative and Catalytic Qualities	5	3	4	12
Total	59	43	62	

Table 22

Institutional Outcomes in Economic Development

Categories	Cases			
	1	2	3	Total
Gifts, Foundation, and Community Support	5	3	4	12
Recruitment and Training of New Industries	5	5	5	15
Retention and Training of Existing Industries	5	3	4	12
Growth and Training of Small Business	4	3	4	11
Contiguity with Curriculum Programs	3	4	5	12
Economic Vitality of the Community	2	5	5	12
Total	24	23	27	

Caswell Counties. This divergence in economic vitality between the rural and metropolitan counties indicates a distinct difference in the economies of Guilford and Alamance Counties compared with Caswell and Person Counties.

Growth and training of small business was the weakest outcome measure overall among the colleges. Both GTCC and ACC supplement their SBCs with additional funds from other budgets. The standard institutional budget of $55,498 awarded to each community college in the SBC network ensures a minimal level of instructional support for small business programming, but provides inadequate support especially in the state's more metropolitan areas or in special cases where community colleges support two SBC locations.

Contiguity with curriculum programs also received a lower score because community college staff cannot implement new curriculum programs without healthy institutional budgets. Gifts and community support add to the continued health of community colleges by providing an additional source of funds to be tapped for new program start-ups. Retention and training of existing industries received an overall score of 12 compared with a score of 15 for recruitment and training of new industries. Program requirements, funding, and regulations perpetuate the divergence in outcomes for new and existing industries. Between 1987-88 and 1991-92 almost twice as many trainees were enrolled in the state-wide New and Expanding Industries program compared with the FIT program for existing industries.

A related objective of the study was to identify improvements that could be made by Piedmont Triad community colleges working in economic development, workforce

preparedness, and job training to prepare for a changing economy. The following recommendations for improvements were synthesized from interviews with community leaders, city-county government officials, employees, and community college staff:

(a) Develop better communications among public schools, economic development commissions, chambers of commerce, NC Department of Commerce, community college, staff, and other local organizations that may be working in economic development;

(b) Improve communications with the NC legislature to develop a broader understanding about the services that are available through the NCCCS, the level of involvement with local business and industry, and the impact of recent legislation upon economic development;

(c) Improve promotion efforts so that business and industry are more aware of the capability of the NCCCS educational programs;

(d) Engage in more local needs analysis and job analysis to ensure that instructional programs are aligned with community educational needs;

(e) Use the DACUM process more frequently to develop competencies for entry-level positions and to give business and industry representatives an opportunity for input into community college curricula;

(f) Encourage SBCs to develop a common core of instructional programs that would be available at community colleges throughout the Piedmont Triad;

(g) Improve the quality of short-term instructional programs by involving and/or hiring full-time instructors in short-term educational programs;

(h) Continually improve instructional equipment through increased budget, foundation, and community support. Developing innovative strategies to acquire, maintain, and replace state-of-the-art equipment; and

(i) Develop a higher level of budgetary support for economic development positions because roles are becoming fragmented due to increased institutional demands.

Conclusions

The fifth phase of community college development has been referred to as the period of partnership growth between community colleges and corporations (Deegan, 1984). American business and industry are confronting a changing marketplace with increased competition elevating the need for new technology and improved management methods. These changes are leading to a greater need for additional education and training.

A study completed under the auspices of the League of Innovation in the Community Colleges during 1992 found that only four percent of the community colleges responding were not involved in workforce training programs (Doucette, 1993). Most community colleges have incorporated components of economic development, workforce development, or job training into their missions. The current challenge for community college staff is to evaluate the effectiveness of their economic development efforts and to adopt systems and processes that will lead to continuous improvement through constant collaboration.

Senge (1990) encourages the use of systems thinking to understand interrelationships rather than isolated events or single items. Systems thinking replaces the linear thinking of the past. If community colleges are to be effective in economic development, staff and administrators must realize that they are part of a larger community development system, and they must adopt a system that leads to continuous improvement.

The objective of economic development is community development, job growth and an improved quality of life. For community development to be effective, the community itself must be transformed into a learning organization as described by Senge. The collaborative organizations and people involved must develop common mental models and a shared vision to sustain the process. Through the community learning organization all those involved in community and economic development must continually assess and reassess the current environmental conditions.

Rouche, Baker, and Rose (1989) in their book, Shared Vision: Transformational Leadership in American Community Colleges wrote about 50 transformational leaders in community colleges. The researchers found five universal themes exhibited by each of the leaders: influence, people orientation, motivation, values, and vision. Of the five themes, vision was believed to be the most significant. The authors stated:

> While many attributes must be present to bring about appropriate change, the theme of vision remains central and paramount. The transformational leader must have a vision of the changing college and must be able to transform the beliefs of others into a commitment to shared vision (p. 13).

Bennis and Nanus (1985) believed that visions are future-oriented, a bridge between the reality of the present and the possibilities of the future. A commitment of the community college president in economic development programs is essential to create a vision and to develop an effective program. The president articulates the vision for their organization and those working in it. Bennis and Nanus said that "a shared vision of the future also suggests measures of effectiveness for the organization and for all its parts" (pp. 91-92). If the vision has been created and articulated, then those within the working organization understand the mission and the expectations that have been set forth.

The concept of shared vision becomes more complex within the context of economic development because community college leaders must work with the framework of the college to develop an internal college vision. In addition, the leaders must work externally in the community to develop a community-wide shared vision of economic development. Shared vision must be an input into the economic development process.

This study shows that Piedmont Triad community colleges are effective in economic development, but it points out that they are only one component in a complex process. Martorana and Kuhns (1988) identified the concept of "communiversity" describing the linking together of schools, colleges, universities, and noneducational organizations. Community college staff engaged in economic development must adopt the goals of communiversity: (a) improve community coordination of education resources, (b) improve the effectiveness and efficiency of the educational resources, (c) increase public awareness of educational resources, (d) develop a better equalization in the use of community resources, and (e) align resource use with community needs. This study

affirms that Piedmont Triad community colleges support and encourage community economic development, but it also points to the need to expand their work with city/ county government, major employers, economic development commissions, public schools, and others that may be engaged in community and economic development.

Grounded Theory

Environmental and economic conditions encourage community leaders to become involved in economic development and community development programs. These conditions may include, but are not limited to the following: high unemployment, low job growth, change in leadership, a critical event, low wages, slow economic growth, competitive pressures, dislocated workers, or a declining tax or industrial base. These conditions necessitate the need for processes and systems designed to encourage economic and community development within a selected region. Economic development processes include: environmental scanning, planning, industry recruitment, infrastructure improvements, workforce development activities, coordination among community-based organizations, retention of existing industry, entrepreneurship development, leadership development, technology transfer, and community-based education. These processes among community-based organizations such as city and county governments, industrial and real estate developers, economic development commissions, chambers of commerce, educators, trade associations, employment security commissions, and state government organizations are intended to lead to positive outcomes such as higher per capita income, growth of jobs, an increased tax base, diversification of the industrial base, higher per capita retail sales, more new business start-ups, lower property taxes, higher property

values, an improved quality of life, and economic stability. The grounded theory does not explain the case where a community college scores relatively high on the institutional effectiveness indicators, but scores low on the outcome measures. The research indicates that there is an unexplained factor that affects the relationship between institutional effectiveness indicators and outcome measures. Figure 4 illustrates through a paradigm model how the causal conditions, phenomena, context, intervening conditions, action/interaction strategies, and consequences are related (Strauss and Corbin, 1990). The economic development strategies used by Piedmont Triad community colleges were also identified and are presented in Appendix E. The strategies identified are not all inclusive, but were strategies used by the three Piedmont Triad institutions in nontraditional programs that a panel of experts deemed to be effective in economic development. Community leaders are discovering that economic development programs are needed not only to advance their communities but also just to sustain and maintain the quality of life that they currently enjoy.

The three community colleges studied engaged in two implementation processes: catalytic processes and collaborative processes. Through catalytic processes, community college staff along with community leaders are engaged in an ongoing, continuous cycle of assessing their community needs, setting educational goals for community-based programming, evaluating programming, and starting the cycle again. Community college linkages and involvement with other agencies and organizations provide a synergy and sustain longer-term involvement. Catalytic processes encourage dialogue among community leaders and community college staff and move communities toward consensus

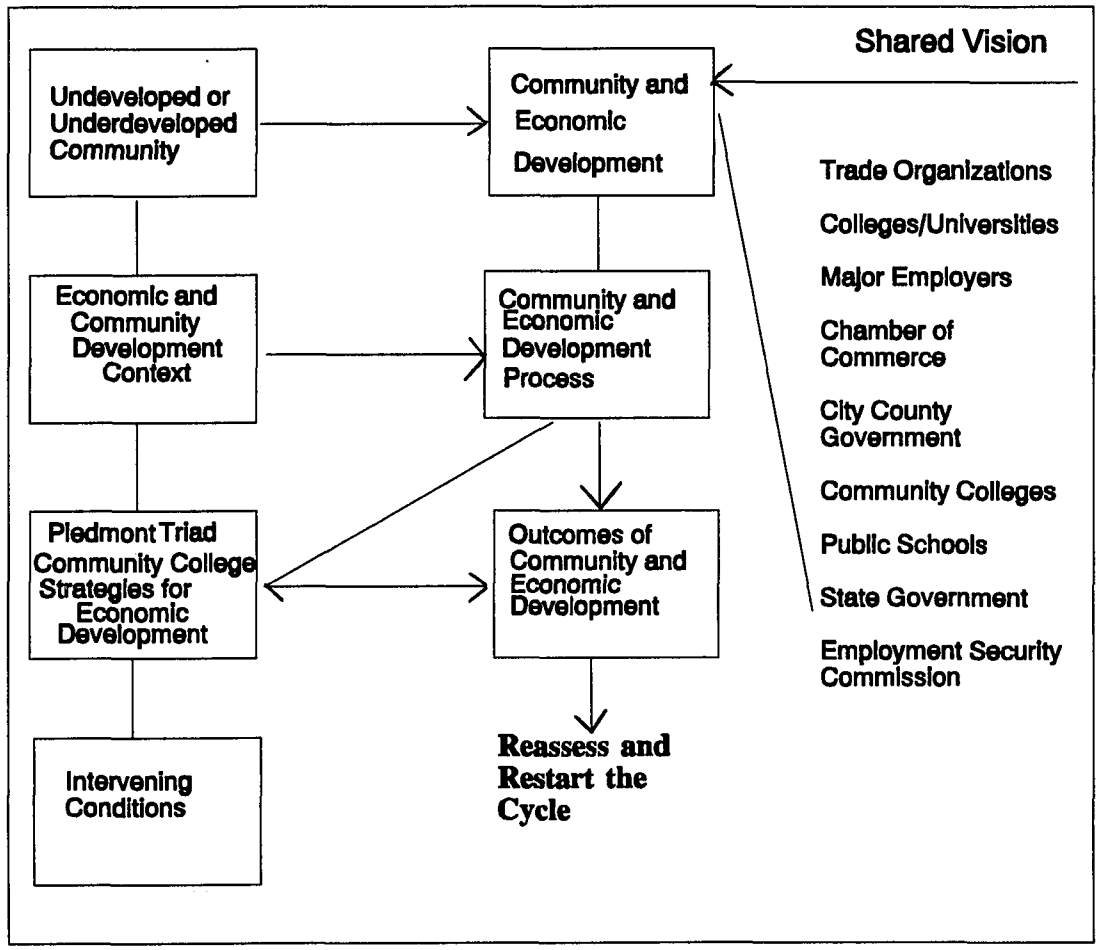


Figure 4

Piedmont Triad Model of Economic Development

and action at a faster rate. Community colleges engaged in catalytic processes are viewed by those outside the system as community leaders in education and economic development and exhibit proactive behavior rather than reactive behavior. Community colleges engaged in collaborative processes support and link with stronger community-based agencies such as chambers of commerce or economic development commissions that establish a leadership role in economic development. One of the three community colleges studied was engaged in catalytic processes. Catalytic processes build momentum and lead to continued positive activity and synergy. Collaborative processes occur when community college staff are linked with other community-based organizations that are viewed as catalysts. An institution may engage in a collaborative process if tasks are not clearly defined, community resources are abundant, or information is not free flowing. Community college staff may alternate between catalytic or collaborative processes to engage educational programming, however a primary process is used by the staff depending upon the project, the community, and the organization involved.

The three community colleges selected for the study of Piedmont Triad community colleges are very effective in economic development. They are most effective in training personnel for new manufacturing and service industries entering the state. Community colleges have been less effective in serving the existing industry already located in the state. Incentives are offered to new industries to encourage them to locate in the state, but community college retention efforts are limited by recent legislation. Rules and regulations aimed at stemming in-plant training have made the training opportunities between the New and Expanding Industries and the FIT program more inequitable. SBCs

are an important component of the community college economic development strategy, but they could be more effective in addressing community needs if a new funding formula were developed. The funding formula should incorporate both performance-based indicators and population measures to support the centers. All the SBC directors interviewed expressed the need for a higher level of funding support so their programs could be more effective. The Piedmont Triad SBCs do not offer a common core of small business training programs. Offering a core of instructional programs common to all SBC programs on a regional or state-wide basis would strengthen the marketing of the program and better serve clients. The SBCs would also benefit from annual planning emphasizing environmental scanning and analysis of community needs.

Recommendations for Further Study

Effectiveness in economic development, job training, and workforce development is difficult to define and even more difficult to measure, due to the number of factors that must be considered. Number of enrollments was one measure of each program's effectiveness and impact. However, the quality and effectiveness of programs was also evaluated using perceptions of community leaders. Clearly, in order to monitor and measure the impact of targeted economic development programs, more environmental scanning, goal setting, and follow-up evaluation processes must be developed.

This study was limited to Piedmont Triad community colleges and included a population of eight institutions within an 11-county area with a study sample of three. Perhaps additional research to evaluate the effectiveness of economic development programs could be conducted to include other regions of North Carolina or the 58 North

Carolina community colleges. Further research would help to determine if these Piedmont Triad community colleges are like others considered to be effective or if the community colleges in this study differ from others in different regions or states.

BIBLIOGRAPHY

Alamance Community College general catalog: 1993-95. (Available from [Alamance Community College, P.O. Box 8000, Graham, NC 27253])

Alamance Community College annual report 1991-92: Annual plan 1992-93: long-range plan. (Available from [Alamance Community College, P. O. Box 8000, Graham, NC 27253])

Alamance County Area Chamber of Commerce. (1993). Alamance county, North Carolina: Economic profile. Burlington, NC: Author.

Alfred, R.L. (1988). Positioning alternatives and new partnerships. In J. S. Eaton (Ed.) Colleges of choice: The enabling impact of the community college (pp. 213-229). New York: Collier Macmillan.

Alfred, R.L. (1991a). Evaluating results of economic and work force development programs. In Geneva Waddell. (Ed.) Economic and work force development (pp. 25-30). San Francisco, CA: Jossey-Bass, Inc.

Alfred, R.L. (1991b). Institutional effectiveness. In D. Angel & M. DeVault (Eds.) Conceptualizing 2000: Proactive planning (pp. 95-105) Washington, DC: Community College Press.

A look at Greensboro, North Carolina (1992). Available from [Greensboro Area Chamber of Commerce, P.O. Box 3246, Greensboro, NC 27402])

Bartik, T.J. (1991). Who benefits from state and local economic development policies? Kalamazoo, Michigan: W. E.Upjohn Institute for Employment Research.

Bennis, W. & Nanus, B. (1985). Leaders: The strategies for taking charge. New York: Harper & Row, Publishers.

Bouchey, L.M. (1993). North Carolina's Piedmont Triad: Business profile '93. Greensboro, NC: Business Life Promotions.

Braden, P. (1987-88). The impact of technology on the workforce. Community/Technical and Junior College Journal, 58 (3), 21-23.

Bragg, D.B. & Jacobs, J. (1991). A conceptual framework for evaluating community college customized training programs. Berkley, CA: National Center for Research in Vocational Education.

Brawer, F. B. & Cohen, A.M. (1989). The American community college. San Francisco, CA: Jossey-Bass.

Brint, S. & Karabel, J.(1989). The diverted dream: Community colleges and the promise of educational opportunity in America, 1900-1985. New York: Oxford University Press.

Burger, L.T. (1988). A statewide model for a systematic community college economic development program. Journal of Studies in Technical Careers, 19, 157-165.

Campbell, D.T. & Stanley, J.C. (1963). Experimental and quasi-experimental designs for research. Boston: Houghton-Mifflin Company.

Cantor, J.A. (1991). The community college as a catalyst for economic development: Results of a national study. Community/Junior College Quarterly of Research and Practice. 15(2), 125-145.

Carmichael, J. B. (1991). Meeting small business needs through small business development centers. In Geneva Waddell. (Ed.) Economic and work force development (pp. 25-30). San Francisco, CA: Jossey-Bass, Inc.

Carnevale, A.P. (1983). Higher ed's role in the American economy. Education Record 64(4), 6-16.

Carnevale, A.P. (1991). America and the new economy. San Francisco, CA: Jossey-Bass Inc.

Carnevale, A.P., Gainer, L.J., Villet, J., & Holland, S.L. (1990). Training partnerships: Linking employers and providers (Grant No. 99-6-0705-75-079-02). Washington DC: U.S. Dept. of Labor.

Caswell County Strategic Planning Committee. (1992). A guide for the future: The Caswell County strategic plan. (Available from [Caswell County Economic Development Office, P.O. Box 98, Yanceyville, NC 27239])

Chapter 45, NC House Bill 654 (1993).

Charner, I. & Gold, G. (1987). Building effective business/higher education partnerships for economic development. Community Services Catalyst 17(1), 20-23.

Chmura, T. (1986). The new economic imperative and the new opportunities for higher education. In T. Chmura (Ed.), The higher education-economic development connection: emerging roles for public colleges and universities in a changing economy (pp. 2-8). Washington, DC: American Association of State Colleges and Universities.

Choate, P. (1986). Business and education: imperative to adapt. In H. Roberts (Ed.) Issues in higher education and economic development. (pp. 12-18). Washington, DC: American Association of State Colleges and Universities.

Cole, L. & Kingry, L. (1985). The role of Oregon community colleges in economic development. Community College Review 13 (2), 10-17.

Deegan, W.L. (1988). Managing contract training programs: Progress and proposals. Tallahassee, FL: Florida State University, Institute for Studies in Higher Education. (ERIC Document Reproduction Service No. ED 294 616)

Deegan, W.L. & Drisko, R. (1985). Contract training: Progress and policy issues. Community College Journal (55) (6), 14-17.

Doucette, D. (1993). Community college workforce training programs for employers of business, industry, labor, and government: A status report. League for Innovation in the Community College.

Emery, M. (1988). Community education and economic development: Activities in the field and potential new models. Pullman, WA: Washington State University Center for Community Education and Economic Development. (ED 318 892)

Employment Security Commission of NC (1992). Civilian labor force estimates for North Carolina, 1980-1990. Raleigh, NC: Author.

Gleazer, Jr. E. (1980). The community college: Values vision & vitality. Washington, DC: American Association of Community and Junior Colleges.

Gonzales, T. (1990). The sensible choice: High skills and community colleges. Community, Technical and Junior College Journal, 61(4), 26-30.

Governor's Commission on Workforce Preparedness (1992). The 1993-1995 strategic plan for workforce preparedness. Raleigh, NC: Author.

Grossman, G.M. & Duncan, M.E. (1988). Assessing the institutional effectiveness of community and technical colleges. Columbus, OH: National Center for Research in Vocational Education. (ERIC Document Reproduction Service N. ED 303 193)

Grubb, N.W. (1989). The developing vocational education and training "system": Partnerships and customized training. In Proceedings of the Tenth Annual Rubert N. Evans Symposium.

Grubb, N.W. & Stern, D. (1989). Separating the wheat from the chaff: The role of vocational education in economic development. Berkeley, CA: National Center for Research in Vocational Education.

Grubb, N.W., Lynch, R., and Palmer, J.C. (1991). Community college involvement in contract training and other economic development activities. Berkeley CA: National Center for Research in Vocational Education.

Guilford Technical Community College general catalog 1991-1993 (Available from [Guilford Technical Community College, P.O. Box 309, Jamestown, NC 27282])

Haugen, S.E. & Meisenheimer, II, J.R. (1991). U.S. labor market weakened in 1990. Monthly Labor Review, 114(2), 3-16.

Johnston, W.B. (1987). Workforce 2000. Indianapolis: Hudson Institute.

Jones, R. T. (1987-88). Influence beyond the college gates. Community, Technical, and Junior College Journal, 58(3), 21-23.

Jones, R.T. (1988). Looking ahead: Trends in workforce and job training. Management Review, 77(5), 46-48.

Katsinas, S.G. & Lacey, V.A. (1990). Common factors that appear to lead to success in nontraditional economic development: Implications for policy and practice. Community Services Catalyst, 20(3), 17-26.

Kendrick, J. W. (1991). U.S. productivity performance in perspective. Business Economics, 26 (4), 7-11.

Kleckley, J. W. (1993). The economic development yearbook for North Carolina. Greenville, NC: Problem Solving Research, Inc.

Kuhn, E. & Martorana, S.V. (1988). Community colleges local and regional development, and the drift toward communiversity. In J.S. (Ed.) Colleges of choice: The enabling impact of community colleges (pp. 230-247) New York: Collier MacMillan.

Luke, J.S., Ventrias, C., Reed, B.J., & Reed, C. (1988). Managing economic development: A guide to state and local leadership strategies. San Francisco, CA: Jossey-Bass.

Lynch, R. (1991). Community college involvement in contract training and other economic development activities. Washington, DC: American Association of Community and Junior Colleges.

Maxwell, C. (1990). The changing role of the community college in economic development. Community Services Catalyst, 20(1), 6-14.

McLeod, M. W. & Carter, R. A. (1985). The measure of quality in two-year colleges. Community College Review, 13(3), 14-20.

MDC, Inc. (1992). Greater expectations: The south's workforce is the south's future. Chapel Hill, NC: Author.

Meeting the challenge: Annual report for Alamance Community College, 1991-92. (Available from [ACC, P.O. Box 8000, Graham, NC 27253])

Meisenheimer, II, J.R. Mellor, E.F., & Rydzewski, L.G. (1992). Job market slid in early 1991, then struggled to find footing. Monthly Labor Review, 115(2), 3-17.

Melville, J. G. and Chmura, T.J. (1991). Strategic alignment of community colleges and state economic policy. New Directions for Community Colleges, 19(3), 7-15.

Metro insights: Southern edition (1990). Lexington, Mass: DRI/McGraw Hill.

Mihelich, A.L. (1988). The community college an economic development center. Journal of Studies in Technical Careers, 10, 171-177.

Miller, K.D. (1989). Retraining the American workforce. Reading, MA: Addison-Wesley Publishing Co.

Moriarty, B. (1980). Industrial location and community development. Chapel Hill, NC: University of NC Press.

Mundhenk, R.T. (1988). Community colleges as catalysts in economic development. Journal of Studies in Technical Careers, 10(2), 107-116.

Murphy, J. (1989). Community colleges: An economic development resource (Report No. HA-13045) Washington, DC: National Council for Urban Economic Development.

Napoli, L. (June 7, 1993). Alamance County lies at crossroads of Triad and Triangle: Building economic momentum. Triad Business News, pp. 11-17.

Nespoli, L. (1991). Investing in human capital: State strategies for economic development. In Geneva Waddell. (Ed.), Economic and work force development (pp. 17-24). San Francisco, CA: Jossey-Bass Publishers.

North Carolina Department of Commerce, Business/Industry Development Division. (1993). North Carolina's financial incentives and advantages for business. (Available from [North Carolina Department of Commerce, 430 N. Salisbury St., Raleigh, NC 27261]).

North Carolina Department of Community Colleges (1988). Small business center guidelines. Raleigh, NC: Author.

North Carolina Department of Community Colleges (1990, June 14). Title 23, North Carolina administrative code. Raleigh, NC: Author.

North Carolina Department of Community Colleges (1993). A matter of facts: The N.C. Community College System fact book. Raleigh, NC: Author.

Office of Policy and Planning, NC Dept. of Administration. (1990). Regional directions: Economic trends in NC. Raleigh, NC: Author.

Oliver, R. (1992, September). The Alamance County advantage: Location, price, diversity. North Carolina, pp. 29-40.

Palmer, J. (1990). How do community colleges serve business and industry? A review of the issues discussed in the literature. Washington, DC: American Association of Community and Junior Colleges.

Parnell, D. (1985). The neglected majority. Washington, DC: Community College Press.

Pennar, K. & Mandel, N. (September 25, 1989). Economic prospects for the year 2000: Surprise we could be entering the most prosperous decade yet. Business Week, pp. 158-170.

Person County Strategic Planning Committee. (1989). Planning for people: The Person report. (Available from [Person County Strategic Planning Committee, Roxboro, NC])

Peters, T. (1987). Thriving on chaos: Handbook for a management revolution. New York: Perennial Library.

Piedmont Community College (1993). PCC fact sheet. (Available from [Piedmont Community College, P. O. Box 1197, Roxboro, NC 27573])

Piedmont Community College. (1992-1993). Fact book 1992-93. (Available from [Piedmont Community College, P.O. Box 1197, Roxboro, NC 27573])

Piedmont Community College general catalog and student handbook 1992-1994. (Available from [Piedmont Community College, P.O. Box 1197, Roxboro, NC 27573])

Piedmont Triad Council of Governments data book (1992). Greensboro, NC: Piedmont Triad Council of Governments.

Richardson, Jr., R.C. (1987). Improving effectiveness through strategic planning. Community College Review. 15(4), 28-34.

Rosenfield, S.A. (1992). Competitive manufacturing: New strategies for regional development. New Brunswick, NJ: Center for Urban Policy Research.

Rouche, J.E., Baker, III, G.A., & Rose, R.R. (1989). Shared Vision: Transformational leadership in American community colleges. Washington, DC: Community College Press.

Roxboro Chamber of Commerce. (1993). Industrial and manufacturing directory for Roxboro and Person County. (Available from [Roxboro Area Chamber of Commerce, Inc., P.O. Box 209, Roxboro NC 27573])

Sanders, C.S. (1988). Economic development: Commitment, communication, and coordination. Journal of Studies in Technical Careers, 10(2), 117-124.

Senge, P.M. (1990). The fifth discipline: The art and practice of the learning organization. New York: Doubleday.

Strauss, A. & Corbin, J. (1990) Basics of qualitative research: Grounded theory procedures and techniques. Newbury Park, CA: Sage.

Task Force on the Role of the Community College (1988). Community colleges and economic development. Journal of Studies in Technical Careers. 10 (2), 91-106.

Thorton, Jr., J.W. (1972). The community junior college. New York: John Wiley & Sons.

Vaughn, G.B. & Gillett-Karam, R. (1993). ACCLAIM: A model for leading the community. Community College Journal 63(6), 20-23.

Warford, L. J. (1989). A study of customized contract training programs at selected community colleges. Unpublished doctoral dissertation, Eugene, OR: University of Oregon.

Whittington, G. (1992). Statistical summary of the Piedmont Triad [Machine readable data file]. Winston-Salem, NC: Piedmont Triad Regional Data Center (Producer). Greensboro, NC: Piedmont Triad Horizons (Distributor).

Wiggs, J.L. (1989). The community college system in North Carolina: A silver anniversary history, 1963-1988. Raleigh, NC: N.C. State Board of Community Colleges.

Workforce preparedness position white paper (1993). (Available from: [GTCC, P.O. Box 309, Jamestown, NC 27282])

Yin, R.K. (1984). Case study research design and methods. Beverly Hills, CA: Sage Publications.

APPENDICES

APPENDIX A

PANEL OF EXPERTS

1. Gov. Bob Scott
   System President
   N.C. Department of Community Colleges
   200 W. Jones Street
   Raleigh, NC 27603

2. Mr. Joe Sturdivant
   Director of Business and Industry Services
   N.C. Department of Community Colleges
   200 W. Jones Street
   Raleigh, NC 27603

3. Ms. Glynda Lawrence
   Associate Director of Business and Industry Services
   N.C. Department of Community Colleges
   200 W. Jones Street
   Raleigh, NC 27603

4. Mr. Rick Kimrey
   Regional Manager Business and Industry Services
   Central Region
   Mitchell Community College
   Continuing Education Center
   701 W. Front St.
   Statesville, N.C. 28677

5. Mr. Tom Howard
   Director of New Industry Training
   Central Piedmont Community College
   P.O. Box 35009
   Charlotte, NC 28235

6. Mr. John Beall
   Director of Focused Industrial Training
   Catawba Valley Community College
   Rt. 3, Box 283
   Hickory, NC 28602

7. Mr. John Danich
   Director of Focused Industrial Training
   Rowan Cabarrus Community College
   P.O. Box 1595
   Salisbury, NC 28144

8. Dr. Jean Overton
Director Small Business Centers
N.C. Department of Community Colleges
200 W. Jones Street
Raleigh, NC 27603

9. Mr. Bob Poore
Regional Manager Business and Industry Services
Western Region
Haywood Community College
High Tech Center
Ten Industrial Park Drive
Waynesville, NC 28786

10. Mr. Calvin Dull
Dean of Continuing Education
Wilkes Community College
P.O. Box 120
Wilkesboro, NC 28697

11. Ms. Donna Etheridge
Director of Business and Industry Services
Mitchell Community College
Continuing Education Center
701 W. Front Street
Statesville, NC 28677

12. Dr. Don Cameron
President
Guilford Technical Community College
P.O. Box 309
Jamestown, NC 27282

13. Dr. Marvin Joyner
President
Central Carolina Community College
1105 Kelly Drive
Sanford, NC 27330

14. Dr. Bryan Brooks
President
Davidson County Community College
P.O. Box 1287
Lexington, NC 27292

15. Mr. Don Childers
Director of Focused Industrial Training
Randolph Community College
P.O. Box 1009
Asheboro, NC 27204

16. Mr. John Ellis
Director of the N.C. Quality Center
Catawba Valley Community College
Rt. 3, Box 283
Hickory, NC 28602

17. Mr. Conley Hilliard
N.C. Department of Commerce
430 N. Salisbury Street
Raleigh, NC 27603

18. Mr. George Fouts
Vice-President
Guilford Technical Community College
P.O. Box 309
Jamestown, NC 27282

19. Dr. Gary Tilley
Director of the Small Business Center
Surry Community College
P.O. Box 304
Dobson, N.C. 27017

20. Dr. Ann Tyndall
Director of the Small Business Center
Forsyth Technical Community College
2100 Silas Creek Parkway
Winston-Salem, NC 27103

APPENDIX B

ECONOMIC DEVELOPMENT SURVEY INSTRUMENT

2100 Silas Creek Parkway Winston-Salem, NC 27103 919-723-0371 FAX 919-761-2399
Dr. Bob H. Greene, President

April 8, 1993

Dear Community College and Business Leaders:

I am conducting a study of institutional effectiveness and economic development in the N.C. Community College System for my dissertation at the University of North Carolina at Greensboro. The study will require the use of a panel of experts, composed of individuals selected on the basis on their expertise in economic development instructional programs and activities in the N.C. Community College system. I am enlisting your support to serve as a member of the panel of experts for this study.

The panel of experts will be used to help me select three community colleges in Piedmont North Carolina that are effectively addressing the economic development needs of their communities. I will also be trying to identify measures of effectiveness which can be used to evaluate how well community colleges are meeting economic development needs.

You can greatly assist me by completing the enclosed survey instrument and returning it to me in the envelope provided by April 26, 1993. Your knowledge and perceptions of economic development activities throughout North Carolina are critical to this study, and you are assured of confidentiality. All the data which is collected will be aggregated and your responses will be totally anonymous.

You will receive a copy of the initial results of this survey. If you should have any questions, please feel free to contact me at (919) 723-0371, Ext. 370 at Forsyth Technical Community College.

Thank you for your assistance.

Sincerely,

Anne R. Hennis

Anne R. Hennis,
Assistant to the President
for Economic Development

ECONOMIC DEVELOPMENT SURVEY

Please select the three most effective Piedmont Triad community colleges from the list provided in relationship to their economic development activities. Rank the most effective as number 1, and continue until you have selected the top 3 institutions.

Alamance Community College
Davidson County Community College
Forsyth Technical Community College
Guilford Technical Community College
Piedmont Technical Community College
Randolph Community College
Rockingham Community College
Surry Community College

Please list the institutions in the order of their effectiveness in your judgement.

1. _____

2. _____

3. _____

Please use the space below to explain, in general, the indicators that you considered in making your decision. What outcome measures could be used to identify effectiveness in instructional programs and services which are aligned with economic development?

_____

_____

_____

_____

_____

DEPARTMENT OF COMMUNITY COLLEGES
NORTH CAROLINA STATE BOARD OF COMMUNITY COLLEGES
THE CASWELL BUILDING 200 W. JONES STREET
RALEIGH, NC 27603-1337

ROBERT W. SCOTT
STATE PRESIDENT

919-733-7051

March 8, 1993

Dear Community College and Business Leaders:

North Carolina's community colleges contribute significantly to the state's economic development efforts. Our New and Expanding Industry program, begun in 1963 as the nation's first customized training program, became a model for other states. The 58 North Carolina community colleges are the primary delivery system for adult literacy, technical and vocational training, and adult continuing education. Through the Focused Industrial Training and Small Business Centers, our colleges have provided an array of customized training opportunities for business and industry in the state. Workforce development will continue to be a pressing need in the future as skills training becomes increasingly important in developing a competitive advantage.

It has become increasingly apparent that an effective network of community colleges is essential to continued economic development throughout our state. The Piedmont Triad region was recently recognized as the second most frequently selected site in the nation for new industry locations. This study of the effectiveness of Piedmont Triad community colleges' economic development efforts will increase our knowledge of the region's community colleges and their contribution to economic development. Therefore, I am endorsing this study and asking that you complete the enclosed survey and participate in the site visits, if your college is selected.

The North Carolina Community College System has supported economic development primarily through involvement in customized training and education for business and industry. We must continue to strengthen our community colleges in order to meet the demand of business and industry for skills training and workforce development, both now and in the years ahead.

Sincerely,

Robert W. Scott

RWS/jm

APPENDIX C

CASE STUDY PROTOCOL

CASE STUDY PROTOCOL FOR NON-TRADITIONAL ECONOMIC DEVELOPMENT ACTIVITIES	Interview	Documentation	Triad Data Center	Direct Observation
I. CONTEXTUAL VARIABLES				
A. ECONOMIC DEVELOPMENT				
1. INDICATORS OF INTERNATIONAL, NATIONAL, STATE, AND LOCAL CONDITIONS				
What are the national, state, and local unemployment rates currently? over the last three years?		x	x	
What are the national, state, and local trends in GDP?		x	x	
What are the national, state, and local average income levels?		x	x	
2. GOVERNMENTAL ECONOMIC DEVELOPMENT POLICIES AND PROGRAMS				
What federal, state, and local programs and policies are in place to stimulate economic development?		x		
3. STATE CHARACTERISTICS				
How can the state's workforce be characterized demographically, by skill level, and by education?		x	x	
What are the predominant types of business and industries located within the state?			x	
What trends have impacted the labor force over the last three-five years?		x	x	

	Interview	Documentation	Triad Data Center	Direct Observation
3. STATE CHARACTERISTICS (CONT'D)				
How has the composition of the businesses and industries operating within the state changed over the last three-five years?			x	
What changes are projected for the future?				
4. COMMUNITY CHARACTERISTICS				
How can the community be characterized in terms of its history?	x	x	x	
What are the literacy rates in the community? What percentage of adults have not graduated from high school? or completed an eighth grade education?			x	
What percentage of the population is deriving income or services from public assistance?			x	
What percentage of high school students continue their education through post-secondary education?			x	
How can the community be characterized in terms of business and industry? What types of manufacturers and service industries are operating in the counties served by the community college?			x	
What do economic indicators such as tax base growth, unemployment rate, population, and average income show about the growth and condition of the community?			x	

	Interview	Documentation	Triad Data Center	Direct Observation
4. COMMUNITY CHARACTERISTICS (CONT'D)				
What is the size of the local retail trade?			x	
How many jobs are created through small business and what is the nature of these businesses?			x	
B. EDUCATIONAL INSTITUTIONS AND SYSTEMS			x	
1. EDUCATIONAL SYSTEM POLICIES, PROGRAMS AND PRACTICES				
What is the mission of the NCCCS with regard to economic development?		x		
What programs are in place at the state level that are designed to support economic development?		x		
What has been the historical role of the NCCCS in the economic development of the state?		x		
2. TWO-YEAR INSTITUTIONAL POLICIES, PROGRAMS AND PRACTICES				
What level of commitment to economic development is exhibited by the leadership of the institution?	x			x
What level of flexibility is exhibited by the staff in responding to business and industry training needs?	x	x		x
How does the mission of the institution reflect a commitment to economic development?		x		

	Interview	Documentation	Triad Data Center	Direct Observation
2. TWO-YEAR INSTITUTIONAL POLICIES, PROGRAMS, AND PRACTICES (CONT'D)				
How do other departments or staff across the college support economic development?	x			x
What barriers (if any) are there to the role of the institution in economic development?	x			
3. CUSTOMIZED TRAINING UNIT ADMINISTRATIVE ORGANIZATIONAL LEADERSHIP, STRUCTURE, POLICIES, PROGRAM, AND PRACTICES				
STRUCTURE				
How does economic development fit into the organizational structure of the community college?	x	x		
Who does the division report to?	x	x		
What is the rationale for this reporting relationship?	x			
What other linkages does the program have with other areas of the community college?	x			
What linkages does the group have with other community groups?	x			
STAFFING AND PERSONNEL				
How is the economic development program staffed?	x	x		
What are the staff roles and responsibilities?	x	x		
Where are the personnel physically located?	x			x

3. Customized Training Unit Administrative Organizational Leadership, Structure, Policies, Program, and Practices (cont'd)	Interview	Documentation	Triad Data Center	Direct Observation
Tasks and Goals				
What are the major tasks that are completed within the economic development area?	x	x		
What tasks are completed by each staff member?	x	x		
What goals were identified for the past and coming year?	x	x		
How successful was the program in completing the goals which were identified during the last year?	x	x		
What barriers does the division experience in completing the identified goals?	x			
How could these barriers be addressed?	x			
What accomplishments do the staff expect to achieve within the next one to three years?	x			
Major Accomplishments				
What have been the major accomplishments of the division during the past year, during the past three years, during the past five years?	x			
What is the perceived value of this department by other faculty and staff at the community college? those in the community?	x			

3. Customized Training Unit Administrative Organizational Leadership, Structure, Policies, Program, and Practices (cont'd)	Interview	Documentation	Triad Data Center	Direct Observation
Instructional Program				
What is the range of instructional programs and services operated by the community college?	x	x		
What is the (FTE) enrollment of the college? in traditional curriculum programs? in continuing education programs?		x		
What is the headcount in these programs? What proportion of the population in the service area is the college serving?		x		
Economic Development				
How many and what types of seminars were offered through Small Business Centers during the last three years?		x		
What courses were offered through FIT and NIT during the past three years?		x		
How many courses were offered through FIT and NIT during the last three years?		x		
How many people, businesses, and industries were served during the last three years through FIT, NIT, and Small Business Centers?		x		

	Interview	Documentation	Triad Data Center	Direct Observation
ECONOMIC DEVELOPMENT (CONT'D)				
Of the courses offered through FIT and NIT, what percentage were developed solely by the college staff, the industry itself, or cooperatively?		x		
What percentage of classes offered through FIT and NIT were taught by a full-time college staff member? a part-time college staff member? an employee of the company requesting the training? others not normally employed by the college?	x			
What percentage of courses that were offered for a specific business or industry were offered at the industry site?		x		
What other services were provided by these programs that could not be classified as instructional?	x	x		
RELATIONSHIP OF THE COMMUNITY WITH THE COMMUNITY COLLEGE				
How are the services provided by the community college perceived by the business community?	x	x		
What linkages does the college have with community groups? What groups are interacting with the economic development area?	x			
What other linkages could be established by the college that are not currently established that would enhance economic development?	x			

3. Customized Training Unit Administrative Organizational Leadership, Structure, Policies, Program, and Practices (cont'd)	Interview	Documentation	Triad Data Center	Direct Observation
Relationship of the Economic Development Program to the Other Community College Programs				
What personnel within the community college are interacting with the economic development staff?	x			
What types of information are exchanged between economic development staff and other college personnel?	x			
How are faculty or staff involved in the area of economic development?	x			
Has the college received any donation or gifts through its involvement which could be attributed to its involvement in economic development?	x			
C. Employee and Employer Characteristics				
How can the workforce in the college service area be characterized in terms of skills and educational level?	x	x		
How can firms operating in the community college service area be characterized in terms of corporate culture, technology, etc.?	x			
What are the major employers located in the college service area?			x	

	Interview	Documentation	Triad Data Center	Direct Observation
C. EMPLOYEE AND EMPLOYER CHARACTERISTICS (CONT'D)				
What types of skills training are needed by employers today and in the future to remain competitive?	x			
How is manufacturing technology changing in the college service area?	x	x		
How do firms view the available supply of labor in the service area?	x			
What types of partnerships exist between employers and the community college?	x			
How effective have partnerships between the college and employers been?	x			
What is the level of coordination and cooperation involved in the partnerships?	x			
II. PROCESS VARIABLES				
A. CLIENT NEEDS ASSESSMENTS				
What has been the nature and extent of the needs assessments?	x	x		
B. CUSTOMIZED TRAINING SUBPROCESSES				
How are negotiation and contracting, job analysis, design and development implementation, evaluation, and administration used in working with clients?	x			
C. CUSTOMIZED TRAINING/EDUCATION APPROACHES				
Which customized training approaches have been used by the institution?	x			

	Interview	Documentation	Triad Data Center	Direct Observation
C. CUSTOMIZED TRAINING/EDUCATION APPROACHES (CONT'D)				
Client-driven/custom-designed training courses				
Modification of training/education courses				
Alternative delivery of training courses				
Training courses for special populations				
III. OUTCOME MEASURES				
A. INDIVIDUAL EMPLOYEE OUTCOMES				
What changes or improvements did employees note as a result of participating in a training program offered by the community college?		x		
Did employees involved in training programs experience any improvements in wages as a result of training?		x		
Did employees receive promotions or additional responsibility as a result of their involvement in training programs?		x		
How did employees view the training which was provided?		x		
Was any increase in job satisfaction noted by the participants in the training program?		x		
B. EMPLOYER OUTCOMES				
What results were noted by the employer as a result of contact with the community college or involvement in a training program?		x		

	Interview	Documentation	Triad Data Center	Direct Observation
B. EMPLOYER OUTCOMES (CONT'D)				
Did the company experience any change in the level of productivity or increase in profits as a result of being involved in customized training programs?		x		
For firms participating in non-traditional economic development programs offered by the community college, what was the quality of the instruction or consultant services which were provided?		x		
How did participation in customized training impact the competence of the workforce, productivity, or employee turnover at the company?		x		
Did the firms involved in customized training experience any improvement in their employees' flexibility from their involvement in customized training?		x		
Did the firms involved in customized training note any improvement in employee morale that could be attributed to involvement in customized training?		x		
C. INDUSTRY OUTCOMES				
Did industry groups experience any increase in productivity, improvement in stability, change in morale, etc., as a result of involvement in customized training?		x		

	Interview	Documentation	Triad Data Center	Direct Observation
D. Education Institution/System Outcomes				
What types of changes were noted at the institution in terms of policies, revenues, etc., as a result of being involved in customized training?	x	x		
What types of changes in staffing, curriculum, enrollment, mission, etc., could be observed at the institution as a result of being involved in customized training?	x	x		
What changes in relationships with business and industries and the community college could be noted as a result of an involvement in customized training?	x	x		
E. Societal Outcomes				
What changes in the local, state, or regional economy could potentially be attributed to customized training programs?			x	
Did the community experience any changes in property values, employment rates, average salary levels, percentage of the community living on public assistance, services provided for specific companies, etc.?			x	
Were any changes in the quality of life in the service area noted that could be attributed to involvement in customized training?	x		x	

APPENDIX D

EFFECTIVENESS INDICATORS AND OUTCOMES IN ECONOMIC DEVELOPMENT

INSTITUTIONAL INDICATORS OF EFFECTIVENESS IN ECONOMIC DEVELOPMENT

Commitment of the President and the College Community

1. The college is minimally responsive to economic development needs. Communication with business and industry leaders and the community college staff is sporadic. The community college is unresponsive, and there is no communication or coordination among college staff personnel in economic development.

2. The community college may respond to economic development needs depending upon the industry, the request, and the department. Communication with business and industry leaders and the community college staff is sporadic. There is limited coordination among community college staff personnel.

3. Administrative and instructional staff is responsive to industry needs, when industries make requests. Communication with business and industry is maintained primarily through industry requests. The community college involvement in economic development is segmented by program area.

4. Faculty and staff periodically communicate with business and industry, government, and community leaders. Most instructional and administrative staff support economic development through their actions. The community college faculty and staff are aware of economic development programs and their efforts are sometimes coordinated.

5. The president exhibits leadership in initiating economic development programs and communications with business and industry representatives, government, and community leaders through advisory committee meetings, business/industry forums, industry tours, community dialogue, and other activities. The instructional and administrative staff of the community college staff solidly supports economic development through their activities and actions. Communication among staff and business and industry is constant and ongoing. The college involvement in economic development is coordinated.

Community College Mission Statement

1. The mission statement has not changed significantly in some time and shows no commitment to business and industry or economic development or the operating environment.

2. The mission statement reflects a minimal commitment to business and industry and economic development. Some trends in the operating environment are reflected in the mission statement.

3. The mission statement shows a limited commitment to business and industry training and reflects a narrow connection to the institution's operating environment.

4. The mission statement is evolving and reflects a solid commitment to business and industry and economic development. The mission statement reflects most of the environmental trends which are occurring in the operating environment.

5. The mission statement is dynamic and reflects a major institutional commitment to economic development and business and industry training. The mission statement is aligned with and reflects the operating environment.

Organizational Structure

1. There is no apparent administrative or instructional staff support for economic development and/or business and industry training.

2. There is limited support for economic development/and or business and industry training. Few resources or personnel are available. The staff members concerned with economic development are located in the lower quadrant of the organizational chart.

3. The president and institutional leaders are slightly committed to economic development. The staff members working in economic development are located in the middle of the organizational chart.

4. A staff member who reports directly to the president has a major focus and responsibility in economic development. He or she coordinates the institutional effort.

5. The president and staff have economic development as a major focus. A staff member that reports directly to the president has a major focus and responsibility in economic development. A staff member along with several other employees are assigned the responsibility for economic development and business and industry training.

Number and Quality of Administrative Staff

1. Staff aligned with economic development have completed a college degree and have fewer than one year of experience in business and industry training. Staff time may be divided among several program areas.

2. Staff aligned with economic development have a college degree and have more than one year of relevant work experience in business and industry training. The staff time may be split between two program areas.

3. Staff aligned with economic development have completed college degrees in fields related to business and industry training. Staff members have over three years of experience in business and industry training and economic development. Instructional programs are adequately staffed.

4. Staff aligned with economic development are working toward the completion of advanced degrees. Most have five years or more experience in business and industry training or economic development and/or have completed advanced degrees. Programs are adequately staffed with at least one staff member for each program in operation.

5. Staff aligned with economic development have masters degrees or doctorates with over seven years experience in working with economic development and business and industry training. Programs are adequately staffed with at least one staff member for each program in operation.

Instructional Staff

1. The community college provides some part-time instructors or industry trainers for business and industry training.

2. The community college provides a cadre of highly qualified part-time instructors and industry trainers to implement business and industry training.

3. The community college provides a trained cadre of qualified part-time instructors and provides some incentives for full-time faculty to participate in industry training.

4. The community college relies primarily upon the service of its full-time faculty members to conduct business and industry training programs. When full-time faculty members are not available, the community college relies upon cadre of highly qualified and trained part-time faculty.

5. The community college provides its own staff of full-time faculty for specialized business and industry training. These faculty are deployed in connection with the institution's economic efforts and have enabled the institution to respond fully to industry training needs.

Competency-Based Instruction

1. An ongoing community-wide needs assessment system is in place at the community college.

2. The community college staff develops instructional programs based on the identified community needs.

3. The community college develops client-based programs tailored for specific companies and/or industries.

4. The community college employs the customized training subprocesses to produce instructional programs that are client-based, comprehensive, flexible, and appropriate.

5. The community college employs the DACUM process to develop a curriculum based on task analysis or job analysis so that performance objectives are clearly understood.

Institutional Responsiveness, Timeliness, Thoroughness, and Outreach

1. There is a limited educational program to meet business, industry, and small business needs. Industry outreach is not a major institutional priority.

2. There is an adequate number of business and industry educational programs and services. Communication is initiated primarily by industry. The institution responds slowly due to limited institutional support and resources.

3. There is a satisfactory level of business and industry programming. Communication and coordination between the community college and business and industry is balanced.

4. Staff maintain close communication with businesses and industries through a variety of means. A broad base of businesses and industries are communicating with the college staff. The community college responds quickly to meet their needs. Institutional support and resources are above average.

5. Staff support an on-going business and industry outreach program with visitation and/or telephone contact. Most businesses and industries are communicating with the college and obtain a quick response to their educational needs. Most industries would undertake additional training, utilizing the college as a resource. Institutional resources and support enable the college to respond immediately to any instructional need.

Linkages with the Community

1. The community college staff maintains no community linkages. Community college staff are not involved in community-based agencies and organizations.

2. The community college maintains a few linkages with community organizations, agencies, employers, and local governments. Community college staff support is limited to occasional involvement.

3. The community college maintains ties with other community-based organizations, agencies, and employers. The community college staff responds when asked. Community college staff are participants, but do not hold lead or support positions.

4. Community college staff maintain selected linkages with community agencies and organizations. The community college and its staff are a collaborative organization in developing community educational programs. The community college is a major supporting agency of the lead organization. Community college staff are working in supportive roles.

5. The community college staff maintain extensive linkages with community-based organizations and agencies, employers, and local government through a number of offices and departments. Programs are cooperatively planned and offered through cosponsorships. The community college is a lead organization in responding to community needs. Community college staff participate and take leadership roles in community organizations.

Allocation and Focus of Budget Resources

1. The community college provides a minimal level of administrative and instructional support for the region that it serves.

2. The community college provides an adequate level of administrative and instructional support for the region that is being served.

3. The community college provides an adequate level of administrative and instructional support for the region that is being served. College facilities and equipment are available to business and industry if needed for instructional programs.

4. The community college provides excellent administrative and instructional support for business and industry training in the region that is being served. Facilities and equipment are readily available to business and industry. The community college staff continually update the instructional program and equipment.

5. The community college is a leader in providing training for business and industry, with excellent administrative and instructional support. Up-to-date and modern facilities and equipment are readily available to businesses and industries. The community college staff are continually scanning the environment, setting new goals, and re-evaluating instructional programs.

Business and Industry Partnerships

1. The community college staff communicates with the major industries and small businesses or industry groups in the service area. Educational programs and services are developed and offered to meet their needs.

2. The community college staff communicates and has ongoing needs assessment with major industries, businesses, and special industry groups. Educational programs and services are developed to meet the needs of business and industry.

3. The community college is linked with business and industry to provide ongoing, educational and training programs. Mutually beneficial relationships have been established between the two which may include the use of corporate facilities for training, loan or donation or equipment, or other mutually advantageous arrangements.

4. The community college is linked with business and industry to provide long-term ongoing educational and training programs. Mutually beneficial relationships have been established between industry and the college. Major area employers are collaborating with the college and their employees are involved in training.

5. The community college is linked with a broad base of businesses and industries in the community to provide long-term ongoing educational and training programs. Mutually beneficial relationships have been established between the industry and the college and are ongoing. The community college has a major impact on the local economy.

Commitment to Community-Based Education

1. The community college staff and faculty have examined, understand and respond to the educational needs of the community.

2. Community-based educational programs can be adapted to suit a variety of audiences in scheduling and location needs.

3. The community college staff is capable of adjusting its programs to the changing variable needs of the community.

4. The institution exhibits novel approaches to instruction and staffing patterns which encourage community-based education.

5. The community-based college is perceived as a valuable resource to be used to assist the community in meeting goals and moving forward.

Level of Service and Strength of Programs

1. The community college provides an ongoing educational program to business and industry with a minimal level of courses, seminars, and educational programs.

2. The community college provides an ongoing educational program with an acceptable level of courses, seminars, and educational programs. Communication with business and industry leaders is ongoing.

3. The community college is linked with major employers, government, and local community leaders. Educational programs and services are continually being developed to meet community needs. The level of programming is average.

4. The community college staff is engaged in environmental scanning to identify problems and opportunities. Educational programs and services are developed as a result of contact with community leaders from education, government, and major employers. Educational programs are responsive community needs. Educational programs are customized and community-based.

5. The community college staff is examining the environments in which it operates to identify community problems and opportunities (Vaughn and Gillett-Karam, 1993). Educational programs and services are developed as a result of consensus building and coalition building with community leaders from education and small business. Educational programs are community-based and customized. Programs are evaluated and the environmental scanning begins again.

Proactive Approach with Collaborative and Catalytic Qualities

1. The community college is linked with other community-based organizations and agencies in the community.

2. The community college staff collaborates with other community-based agencies, local government, industry, and community leaders.

3. The community college staff collaborates with other community-based agencies, local government, industry, and community leaders to identify and clarify community issues and problems.

4. The community college staff has a major supporting role in championing collaboration among community-based agencies, local government, industry, and community leaders to identify community problems and issues and recommend solutions.

5. The community college and its staff is a "leader and catalyst in effecting collaboration among the people, their leaders, and other community based organizations and agencies within its service area in identifying and seeking resolution to major issues that are of critical concern to the community and its people" (Boone, 1992, p. 2 cited in Vaughn and Gillett-Karam).

Institutional Effectiveness Outcomes in
Economic Development

Gifts, Foundation, and Community Support

1. The community college has a foundation that benefits from corporate and community gifts.

2. The community college has an active foundation with a supportive foundation board. The foundation benefits from community and corporate gifts.

3. The community college has an active working group of community and corporate leaders who work to promote the community college. The college benefits from corporate and community gifts of cash, and/or equipment and other donations that improves its operation.

4. The community college employs a foundation director whose responsibility is to organize a fund raising effort and manage the foundation. The president is visibly involved in promoting the community college and the foundation through a supportive and active foundation board with community and corporate leadership support. The community college benefits significantly from corporate and community gifts.

5. The community college employs a foundation director whose responsibility is to organize a fund raising effort and manage the foundation. The president is visibly involved in promoting the community college and the foundation through a supportive and active foundation board with community and corporate leadership support. Corporate and community gifts are visibly employed to support scholarships, endowments, equipment, buildings, and other campus projects. The benefits of giving to the community college are readily apparent to local business, industry, community-based organizations, and agencies.

Outcome: Value of the Community College Foundation and Record of Gifts by Major Business and Industries in the Community College Service Area

Recruitment and Training of New Business

1. The community college is linked with a community-based economic development effort and promotes the availability of customized training and support services in presentations to industrial prospects.

2. The institution actively promotes customized training and support services to industrial prospects, new industries, and expanding industries in the service area and has established customized training programs.

3. The community college has established a creditable track record in providing customized training and support services for new and expanding industries.

4. The community college and delivery of customized training are considered to be an asset in promoting regional economic development and attracting new industries. The community college is noted for its responsiveness to industrial prospects.

5. The institution has a lengthy history of working with new and expanding industries in the service area to provide successful start-up training and support. The community college is noted for its commitment to business and industry, flexibility, and quick response.

Outcome: History of the Community in Attracting New Industries to the Service Area and the History of the Community College in Providing Training Programs for Those Industries

Retention and Training of Existing Business

1. The community college works with existing business and industries to provide customized training programs.

2. The community college communicates with major area employers and develops programs to suit their needs.

3. Businesses and industries in the service area are aware of the community college and its training and educational support services.

4. The college continually assesses the needs of the service area to determine the demand for new programs and services. Businesses and industries are actively engaged with the community college and are aware of the educational and training support services that are being offered.

5. The community college is a lead organization in collaboration and a catalyst in resolving community issues and addressing education and training needs.

Outcome: History of the Community in Terms of Downsizing and Absorption of Lay-Offs, Retention Efforts by the Community and the Community College, and History of the Community College in Providing Training Programs for Existing Companies

Growth and Training of New Business

1. The community college offers educational programs and services to small business that include as a minimum counseling and educational programs.

2. The community college is linked with community-based agencies and organizations that are aligned with small business. The community college offers a range of educational programs and services to small businesses that may include seminars, short courses, telecourses, teleconferences, and counseling.

3. The community college demonstrates a relationship between the institution's services and small business starts, improvements, or expansions institutional effectiveness indicators.

4. The institution is perceived as a lead organization for small business education and training.

5. The institution is perceived as the leading community organization for small business education, support, networking, and training providing the latest information in technology and business education.

Outcome: Number of New Business Starts in the Community, Number of Persons Trained in the Small Business Center

Contiguity with Curriculum Programs

1. The community college demonstrates a linkage between short-term training programs and degree, certificate, or diploma programs.

2. The community college presents to the businesses, industries, and small business persons a variety of educational options to meet the needs of the service area. There is a demonstrated linkage between short-term and long-term educational programs such as certificate, degree, or diploma programs.

3. New curriculum programs are developed to meet training needs when there is a demonstrated need.

4. The community college presents to the business community a dynamic and comprehensive range of programs to meet the varied needs of the service area. New curriculum programs are continually being developed to support the educational needs of the community.

5. New curriculum programs are continually being developed to support the educational needs of the community. The community college continually responds to the needs of the business community.

Outcome: Development of New Curriculum Programs

Economic Vitality of the Community

1. The community served by the community college is in a growth mode and shows an improvement in ranking over a ten-year time frame as indicated by the Composite Ranking of Economic Development.

2. The community served by the community college is ranked in the top 50 counties in NC over a ten-year time span as indicated by the Composite Ranking of Economic Development.

3. The community served by the community college has been consistently ranked in the top 25 counties in NC over a ten-year time span as indicated in the Composite Ranking of Economic Development.

4. The community served by the community college has been consistently ranked in the top 10 counties in NC over a ten-year time span as indicated in the Composite Ranking of Economic Development.

5. The community served by the community college has been consistently ranked in the top 10 counties in NC over a ten-year time span and has shown an improvement in ranking as indicated by the Composite Ranking of Economic Development.

Outcome: Change in Employment, Per Capita Income, Change in Per Capita Income, Unemployment Rate, Change in the Unemployment Rate, Per Capita Retail Sales, Change in Per Capita Retail Sales, Per Capita Retail Sales, Per Capita Food Stamp Recipients, and Change in Per Capita Food Stamp Recipients

APPENDIX E

PIEDMONT TRIAD MODEL OF ECONOMIC DEVELOPMENT

Undeveloped or
Underdeveloped Community

High unemployment

Low job growth

Low wages

Slow economic growth

Competitive pressures

Declining tax base

Dislocated workers

High property taxes

Low property values

Lack of business start-ups

Economic instability

Limited job opportunities

Low education levels

High rates of public assistance

High rates of out-migration

Low quality of life

Change in leadership

A critical event

Community and Economic Development Processes

Environmental scanning

Planning

Industry recruitment

Infrastructure improvements

Workforce development

Retention of existing industry

Entrepreneurship development

Leadership development

Technology transfer

Community-based education

Context

Business and industry composition

Community leadership

Retail environment

Economic indicators

Population demographics

Community resources

Technology

Potential risks and rewards

Outcomes of Community and Economic Development

Job growth

Increased tax base

Diversification of the industrial base

Higher per capita retail sales

More new business startups

Lower property taxes

Higher property values

Economic stability

Improved quality of life

Systems and processes for continuous improvement

Higher per capita income

Lower unemployment

Fewer welfare recipients

Increased community college enrollment

Higher educational levels

Piedmont Triad Community College Economic Development Strategies

1. Using environmental scanning to determine training needs and assess current community conditions.

2. Coordinating and collaborating with community-based organizations for the development of community-based educational programs.

3. Collaborating with community agencies and organizations to develop community leadership programs designed to explore community opportunities and problems and ultimately enhance the quality of life.

4. Engaging in catalytic and collaborative processes with community-based agencies and organizations to develop community-based programming.

5. Developing strong partnerships with existing local employers for education and training of their employees.

6. Working with the N.C. Department of Commerce, local chamber of commerce, economic development commission, elected officials, and others engaged in industry recruiting to provide education and support services designed to recruit new business and industry to a region.

7. Coordinating with new and expanding industries in the service area to provide pre-employment training, employee assessment and training as needed.

8. Providing education, training, and counseling services for small business owners and prospective small business owners through Small Business Centers.

9. Working with city and county governments, officials, and agencies to promote economic development and community-based education and programming.

10. Incorporating instructional needs from nontraditional programs into longer-term curriculum programming to support business and industry.

11. Maintaining a dialogue with the local business community through advisory committees, industry visitation, and other means to ensure continuous communication.

12. Maintaining strong community relationships with business and industry through a single point of contact at the community college.

Intervening Conditions

Apathy

Lack of resources

Too many resources

Lack of communication

Lack of leadership

Undefined tasks and/or roles

Lack of commitment

Lack of coordination

Different time frames