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NO. 4453

ASSESSMENT OF THE PERCEIVED COMPETENCIES
POSSESSED BY WOMEN ADMINISTRATORS IN
VOCATIONAL EDUCATION AT COMMUNITY
COLLEGES IN TEXAS

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Chioma B. Chiawa, B.A., M.B.A.

Denton, Texas

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The need for a high-quality workforce to meet increased competition in the world economy has increased the need for competent vocational administrators in public 2-year postsecondary institutions. Researchers have agreed that vocational education is in a state of metamorphosis and must change to meet its challenges in the coming century. At the same time, more women are seeking and obtaining vocational administrative positions. Several studies have been done to identify the competencies needed by vocational administrators to perform their duties, but there has been little research on the actual ability to perform the administrative tasks identified by these studies.

Two main purposes of this study are: (a) to determine the perceived level of administrative competencies possessed by women administrators in vocational education at the community college level in Texas; (b) to determine the adequacy of the preservice training received by these administrators to perform their administrative functions.

Of the 175 women administrators randomly selected to participate in the study, 71% completed the Administrator Task Inventory. In addition to the descriptive statistics, two multiple regression analyses were tested. First, principal component analysis was used to reduce the number of dependent variables from 11 to 2, after which two multiple regression analyses were used to test the relationship between the two component scores identified as management-skills factors and educational-skills factors and the four independent variables of level of education, number of years of teaching vocational subject, number of years of vocational administrative experience, and level of vocational professional organization involvement.

The results indicate that the women administrators possess the competencies needed to perform their tasks, but one fourth of the administrators need better preservice and/or inservice training on at least 7 of 11 competency categories studied. The results also show that a negative relationship exists between the number of years of teaching vocational subjects and management-skills competencies.

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iv
LIST OF TABLES	viii
CHAPTER	
I. INTRODUCTION	1
Statement of Problem	2
The Purpose of the Study	2
Research Questions and Hypotheses	3
Background and Significance of the Study	4
Need for the Study	13
Assumptions	15
Limitations	15
Delimitation of the Study	16
Definition of Terms	16
Overview of the Study	19
II. LITERATURE REVIEW	21
The Role of Community Colleges in Workforce Training ..	23
Functions, Tasks, and Roles of Vocational Administrators ..	28
Competency Studies on Vocational Administration	42
Women in Educational Administration	50
Literature Summary	77
III. RESEARCH METHODS AND PROCEDURES	80
Introduction	80
Instrumentation	81
Research Procedure	86
Summary	89

CHAPTER	Page
IV. ANALYSIS OF THE DATA	90
Introduction	90
Descriptive Analysis of Demographic Data	90
Descriptive Analysis of Competencies and Skills Information	101
Testing of Hypotheses	114
Principal Component Analysis	116
Multiple Regression Analysis	120
Power of Statistical Test	123
Statistical Analysis and Hypotheses Testing	124
Discussions on Findings	128
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	130
Summary of the Study	130
Summary of Findings on Research Questions	132
Summary of Hypotheses Testing	136
Conclusions	137
Limitations	139
Recommendations	139
Summary	144
 APPENDIX	
A REQUEST FOR LIST OF WOMEN ADMINISTRATORS IN VOCATIONAL EDUCATION AT COMMUNITY COLLEGES IN TEXAS	146
B LETTER TO WOMEN ADMINISTRATORS IN VOCATIONAL EDUCATION AT COMMUNITY COLLEGES IN TEXAS	148
C FOLLOW-UP LETTER	150

	PAGE
D PERMISSION TO USE ADMINISTRATOR TASK INVENTORY 1987	152
E QUESTIONNAIRE	155
REFERENCES	168

LIST OF TABLES

Table		Page
1	Marital Status of Women Administrators in Vocational Education at Community Colleges in Texas	92
2	Age Distribution of Women Administrators in Vocational Education at Community Colleges in Texas	93
3	Ethnicity of Women Administrators in Vocational Education at Community Colleges in Texas	94
4	Number of Children of Women Administrators in Vocational Education at Community Colleges in Texas	95
5	Highest Level of Education of Women Administrators in Vocational Education at Community Colleges in Texas . . .	96
6	Type of Educational Training Received by the Women Administrators in Vocational Education at Community Colleges in Texas	97
7	Number of Years of Vocational Administrative Experience	99
8	Number of Years Teaching Vocational Subjects	100
9	Results of Professional Organization Activities Involvement . . .	101
10	Results of Perceived Competency Level Possessed by Women Administrators in Program Planning Development, Evaluation and Improvement Category	103
11	Results of Perceived Competency Level Possessed by Women Administrators in Curriculum and Instructional Management Category	104

Table		Page
12	Results of Perceived Competency Level Possessed by Women Administrators in Student Services Category	105
13	Results of Perceived Competency Level Possessed by Women Administrators in Personnel Management Category	106
14	Results of Perceived Competency Level Possessed by Women Administrators in Business and Financial Management Category	107
15	Results of Perceived Competency Level Possessed by Women Administrators in Facilities and Equipment Management Category	108
16	Results of Perceived Competency Level Possessed by Women Administrators in Professional and Staff Development Category	109
17	Results of Perceived Competency Level Possessed by Women Administrators in Resource Development Category	110
18	Results of Perceived Competency Level Possessed by Women Administrators in Marketing Vocational Education Category	111
19	Results of Perceived Competency Level Possessed by Women Administrators in Public Relations Category	112
20	Results of Perceived Competency Level Possessed by Women Administrators in Program Articulation Category	113
21	Adequacy of Preservice Training Received by Women Administrators	114

Table	Page
22	Results of Means on Level of Competency Possessed by Women Administrators 115
23	Results of Principal Component Analysis With Varimax Rotation Factor Loadings 118
24	Extraction Analysis for Principal Component Analysis 119
25	Results of Backward Stepwise Regression Analysis and Residual Sum of Squares for Competencies Possessed by Women Administrators at Community Colleges in Texas Factor 1 126
26	Results of Backward Stepwise Regression Analysis and Residual Sum of Squares for Competencies Possessed by Women Administrators at Community Colleges in Texas Factor 2 127

CHAPTER I

INTRODUCTION

The need for a high-quality workforce to meet increased competition in the world economy has, among other factors, increased the need for competent vocational administrators in public 2-year postsecondary institutions.

Competent vocational administrators at 2-year postsecondary institutions have been recognized as the most important factor in the establishment of any high-quality workforce training programs. For instance, the 1963 report of the Panel of Consultants on Vocational Education stated that "the leadership of vocational education will determine both its quality and effectiveness. In a rapidly changing world this leadership must be dynamic and forward looking, able to adapt its thinking to the constantly changing situation which it faces" (p. 163).

Vocational/technical education at postsecondary institutions is one apparatus for the nation's workforce training, and for the past three decades, it has undergone revolutionary changes in an attempt to keep pace with changing technological, economic, social, and political forces. Leighbody (1968) stated more than two decades ago that, with the rapid growth of vocational programs,

both in number and scope, the role of the vocational administrator has become more comprehensive and complex.

Researchers have recognized the need for competent administrators of vocational education at postsecondary levels to move the workforce into the 21st century. They have also noted that the operation of high-quality vocational education programs requires leaders who possess many unique management skills. As vocational education administration becomes more complex, more women are seeking and obtaining vocational administrative positions. However, little research has been done on the level of competence possessed by these new leaders. While it is clear that vocational administrators, regardless of their gender, perform many tasks, it is important that they possess the skills and competencies needed to meet effectively the increasing number of responsibilities.

Statement of the Problem

The problem of this study is the perceived administrative competencies of women administrators in vocational education at the community college level in Texas.

The Purpose of the Study

This study has four main purposes: (a) to determine the perceived level of administrative competencies possessed by women administrators in

vocational education at the community college level in Texas; (b) to determine the adequacy of the preservice training received by these administrators to perform their administrative functions; (c) to help women administrators in vocational education at Texas community colleges evaluate their respective levels of administrative competencies; and (d) to provide needs-assessment data to colleges and universities that have preservice and inservice educational programs for school administrators.

Research Questions and Hypotheses

In pursuit of the objectives of this study, the following research questions are answered:

1. What is the demographic profile of women administrators in vocational education in Texas community colleges?
2. To what extent do women administrators in vocational education in community colleges in Texas possess the necessary vocational administrative competencies required to perform their duties?
3. How adequate is the preservice training received by women administrators in vocational education in Texas community colleges?
4. In which task and duty categories do women administrators in vocational education in Texas community colleges need the most inservice training?

In addition to the above research questions, two multiple-regression hypotheses were tested. The two hypotheses were as follows:

Research Hypothesis 1: There is no statistically significant association between the management-skills variables (Factor 1) as the dependent variable and some linear combinations of the four independent variables: (a) level of education; (b) number of years of teaching vocational subject; (c) number of years of vocational administrative experience; and (d) level of vocational professional organization involvement.

Research Hypothesis 2: There is no statistically significant association between the educational-skills variables (Factor 2) as the dependent variable and some linear combinations of the four independent variables of (a) level of education; (b) number of years of teaching vocational subject; (c) number of years of vocational administrative experience; and (d) level of vocational professional organization involvement.

Background and Significance of the Study

A preliminary review of literature showed that the complexity in the roles and responsibilities of vocational administrators at the 2-year postsecondary level has heightened as a result of the need to train a high-quality workforce for the nation's needs. Public vocational education at the 2-year institutions is a vital part of this nation's workforce training, and it

is also an apparatus for school-to-work transition. Competent vocational administrators in these institutions are critical to the proper training of the workforce. Americans have become increasingly concerned about the quality of the nation's workforce. Toward the end of the 1980s, the quality of the nation's educational system and its ability to train a skilled workforce was highly criticized. The most noted was a report of the National Commission on Excellence in Education (NCEE), *A Nation at Risk* (1983). This report, which marked the beginning of the latest national education reform movement, decried the rising tide of mediocrity in the nation's schools. America's position in the world, according to the report, may once have been reasonably secure, with only a few exceptionally well-trained men and women. This is no longer the case. The report continued:

The people of the U.S. need to know that individuals in our society who do not possess the levels of skill, literacy, and training essential to this new era will be effectively disenfranchised not simply from the material rewards that accompany competent performance but also from the chance to participate fully in our national life. (NCEE, 1983, p. 7)

Since the publication of *A Nation at Risk* in 1983, other reports, such as the National Center on Education and the Economy's *America's Choice: High Skills or Low Wages* (1990), Carvenvale's *Workplace Basics: The Essential*

Skills Employers Want (1990), Johnston and Packer's Workforce 2000 (1987), and the U.S. Department of Labor's Secretary's Commission on Achieving Necessary Skills (SCAN) (1991), have addressed the skills required to improve the quality of the workforce.

In addition to the need for proper training, there is growing national consensus that the emergence of global economy and technological growth has contributed to the demand for a more highly skilled workforce (U.S. Department of Education, 1994). Business leaders are expressing great concern about the future of the workforce in a highly competitive global economy. This concern seems justified in the wake of current workforce reports and statistics. In a World Competitiveness Report conducted by the World Economic Forum, the current quality of the American workforce ranked only sixth among the world's nations, falling behind Singapore, Denmark, Germany, Japan, and Norway (Texas Higher Education Coordinating Board Community and Technical Colleges Division, 1996). The Bureau of Labor Statistics has predicted the growth of jobs that will require highly skilled and educated workers. Civil Service 2000 warned of significant and growing skills gaps as we approach the 21st century. Workforce 2000, a study commissioned by the U.S. Department of Labor Project Office in 1987, stated that there is a serious mismatch between workplace needs and workforce skills that threatens

the nation's standard of living, opportunity for development, and the ability of the nation to compete globally. It also predicted that 75% of the jobs that existed in the United States in 1990 will not exist by the year 2000. Although other writers have repudiated this report's predictive accuracy, the report suggested that jobs will change and will thus require new skills, such as (a) applied math, science, social science, and communications skills; (b) interpersonal skills; (c) team leadership skills; (d) problem-solving and decision-making skills; (e) math skills; (f) computer literacy; (g) career and personal planning; (h) technical skills; (i) information and data manipulation; and (j) the ability and willingness continually to learn new things (Lynch, 1991).

These reports' warnings of technological, social, and economic changes and increased skills requirements in the workforce have shed light on the importance and need for modifications in workforce training requirements and the roles of vocational administration in these training processes. For several decades, vocational education administration remained stable. According to a U.S. Department of Education Office of Vocational and Adult Education study (1993), the basic element of federal vocational technical education did not change from 1917, when the Smith Hughes Act was passed, until 1963, when Congress passed the Vocational Education Act of 1963. As a result of the 1968 and 1976 amendments to the Vocational Education Act of 1963, the

functions of vocational administrators began to change (Carosella, 1983). Combrink (1983) aptly stated, "Each new act placed greater responsibilities on the secondary and post-secondary schools for planning, evaluating, and accountability with rules and regulations required of vocational educators that were not needed in the past" (p. 3).

As a result of the passage of the Carl D. Perkins Acts (1984, 1990), the roles and responsibilities of vocational administrators continued to increase. For instance, more emphasis than that found in earlier legislation was placed on access, program improvement, cooperation between the public and private sectors, advanced technology and training, and the retraining and upgrading of workers (U.S. Department of Education, 1993). The Carl D. Perkins Vocational and Applied Technology Act of 1990 (also known as Perkins II) was passed in an effort to address the modern problems occurring in the workforce. Perkins II focused on four main issues that have, in effect, increased the roles and responsibilities of vocational education at both secondary and postsecondary institutions. These issues include: (a) the integration of vocational technical education with academics; (b) articulation between secondary and postsecondary institutions (Tech Prep); (c) partnerships with business and labor; and (d) closer linkages between school and work (U.S. Department of Education, 1993). In summary, the Carl D. Perkins Vocational

and Applied Technology Education Act Amendments of 1990 stated the following:

Vocational and Applied Technology education administrative staff will be responsible for planning, reporting, budgeting, fund allocation, contracting, application review/approval, compliance monitoring, civil rights, audits/site visits, coordination of sex equity and single parents/displaced homemakers activities, single pregnant women, vocational and Applied Technology Education data collection, technical assistance, and other activities to assure compliance with the legal/fiscal requirements of state and federal statutes, rules and regulations. (Texas Education Agency, 1995-1996, p. 6)

The net result of the Perkins Acts is the need for competent administrators who can move vocational/technical education at postsecondary levels forward into the 21st century. Leighbody (1972) confirmed the increase in responsibility of vocational administrators at the postsecondary level, stating that the future of vocational education belongs to the post-high school institutions. Leighbody, on the same point, noted that the extension of education beyond the high school level can help prevent some technological unemployment. The Hon. E. Thomas Coleman, a representative in Congress from Missouri, echoed Leighbody in the following remarks at the United

States Hearing of the Reauthorization of the Higher Education Act of 1965
on postsecondary education:

As we approach the 21st century, an increasingly technology-driven economy will demand a more highly trained and skilled work force. Studies indicate that very few jobs will be created for men and women who are not literate, cannot use mathematics, and who cannot process information for basic problem-solving. More and more workers will require postsecondary education for the higher skill requirements of new jobs and the typical worker will require additional training and retraining to adjust to rapid changes in technology and the economy. . . . Not only are too many high school graduates under-prepared for the challenges of the work force, but today's economy can no longer absorb workers with only high school diplomas. (Reauthorization of the Higher Education Act of 1965, 1991, p. 3)

As was previously stated, more women than ever are becoming vocational/technical administrators at a time when vocational administration is becoming more complex. Lovelace and LaBrecque (1992) revealed the decline in competent leadership in vocational education in their studies on postsecondary technical/vocational personnel professional improvement assessment.

As leaders who were professionally prepared in the unique aspects of postsecondary technical/ vocational education retire, they are not being replaced by individuals who have developed the background and understanding unique and essential to quality programs of postsecondary technical/vocational education (Lovelace & LaBrecque, 1992, p. 1).

In the Hearing on H.R. 2235, Augustus F. Hawkins, the Chairman, Committee on Education and Labor, questioned women's preparedness in the workforce. He noted that, by the year 2000, the majority of those entering the labor force will be women, minorities, and immigrants; however, these are the groups least prepared to take their place in the workforce of the 21st century "because of historical discrimination in education and employment, and because of poverty and poor academic preparation" (Workforce 2000 Employment Readiness Act of 1989, 1989, p. 3).

For decades, men dominated the leadership positions in all levels of education, even though there were more women teachers (Ortiz, 1982; Ozga, 1993; Restine, 1993). Considerable progress has been made in women's rights, yet women are still lagging behind men in some fields, especially in technical areas and high administrative positions. With changing demographics, women are now expected to play significant roles in the decision-making process for the future training and retraining of the nation's workforce. No research,

however, has been completed to assess the capabilities and the competencies possessed by these women administrators in the current vocational education environment. The state of Texas funds and guides vocational/technical programs, and the successful operation of its many educational institutions depends on the administrative and leadership competencies of the vocational/technical administrators. The Texas State Plan for Vocational Education 1995-1996 fiscal year included plans and the use of funds provided to the state by Perkins II to improve the quality of educational instruction, management, and leadership in postsecondary institutions.

One issue of importance is that, due to the omission of an administrative model, the administration of vocational education at 2-year postsecondary institutions in Texas has been left to the discretion of the individual institutions. A state model for the recruitment, training, and evaluation of vocational education administrators of postsecondary 2-year institutions does not exist in Texas (Schroeder, 1988, p. 15). As a result, the quality of the vocational programs in the community colleges is dependent on their vocational administrators. Because the ability to train the nation's workforce is dependent on competent vocational education administrators, a knowledge of the level of competencies possessed by the growing number of women administrators in vocational education at the community colleges in

Texas becomes of interest. It is therefore important to study the types of competencies possessed and the appropriateness of the training that women vocational administrators at Texas community colleges receive to prepare them for these challenging times in vocational education history.

For a common and clear understanding of this study, the term competency is used as follows:

[Competency is] the presence of characteristics or the absence of disabilities which render a person fit, or qualified to perform a specified task or to assume a defined role. To be competent is to possess sufficient knowledge and ability to meet specified requirements in the sense of being able, adequate, suitable, capable. (McCleary, 1973, p. 2)

Need for the Study

There is a need for research on the competencies possessed by women administrators in vocational education, especially at the community college level. Several studies have been completed in the past on women in administration, but the emphasis on those studies was on barriers and discriminations. Equally, there have been studies on educational administrators at secondary and university levels but little focus on community college administrators. Richardson (1970) stated:

I would tend to feel from personal observation that current practice represents a hodgepodge of ideas garnered from business, secondary schools, and four-year universities without the benefit of much analysis as to how well these ideas relate to the kinds of problems currently being encountered by the administrative organizations of two-year colleges. (p. 16)

Lovelace and LaBrecque (1992) revealed the decline in competent leadership in vocational education in their studies on postsecondary technical/vocational personnel professional-improvement assessment. The authors observed that, as the leaders who were professionally prepared in the unique aspects of postsecondary technical/vocational education retire, they are not being replaced by individuals who have developed the background and understanding essential to high-quality programs of postsecondary technical/vocational education. Also, in a study by Warnat (1991) one of the four priorities identified as essential to the role of vocational/technical education in the 21st century is competent and relevant educators and administrators.

There have been studies done to identify the competencies needed by vocational/technical administrators to perform their duties, but there has been little research on the actual ability to perform the administrative tasks

identified by these studies. Although it is important to identify the competencies needed to function in a vocational/technical administrative capacity, it is equally important to assess the level of competency possessed by the administrators from the identified lists. This study is designed to fill this void in the research data by focusing on women administrators in vocational/technical education at Texas community colleges.

Assumptions

1. It is assumed that all the participants in the study are currently employed at Texas community colleges.
2. It is assumed that the participants will respond honestly to the questions.
3. It is assumed that this self-reported competency level will be a good indicator of the competencies possessed by women administrators in vocational education at Texas community colleges.

Limitations

This study provides information only on women administrators in vocational education at Texas community colleges. Broad generalization across other states is not appropriate.

Delimitation of the Study

This study was delimited to: (a) women administrators in vocational education at Texas community colleges; (b) the competencies needed by women administrators in vocational education to perform their functions as are defined in the questionnaire of this study; and (c) the study of only the main effects of the variables (no interaction effects will be discussed).

Definition of Terms

Administrators: Professional staff members who have the appropriate authority to ensure that quality is maintained and that technical degree and certificate programs and adult vocational courses are conducted in compliance with all applicable laws, rules, and guidelines (Texas Education Agency, 1995-1996).

Androgynous: Having a balance of masculine and feminine traits.

Articulation: A planned process linking educational institutions and experiences to assist students in making a smooth transition from one level of education to another without experiencing delays or duplication in learning.

Attributions: Reasons for a particular success or failure.

Career and technology education (the new vocational education): Organized educational programs offering a coherent sequence of courses which are directly related to the preparation of individuals in paid or unpaid

employment in current or emerging occupations requiring other than a baccalaureate or advanced degree. Such programs shall include competency-based applied learning, which contributes to an individual's general knowledge, higher-order reasoning, and problem-solving skills, work attitudes, general employability skills, and the occupational specific skills necessary for economic independence as a productive and contributing member of society (Texas Education Agency, 1995-1996). The terms occupational education, career education, and vocational/technical education have been used interchangeably for the purpose of this study.

Executive: Managerial, administrative, supervisory, directing, and controlling. These terms are used interchangeably to describe a position in which one "controls, directs, conducts, guides, administers, designated affairs or business" (Landau, 1977, p. 510). These terms are used interchangeably in this study.

Leadership: A role that leads toward goal achievement and involvement. It involves interaction and influence and usually results in some form of changed structure of behavior of groups and organizations. The strength of personality and ability to induce compliance or to persuade are critical variables in the effectiveness of leaders (Lassey & Fernandez, 1976).

Management: Connotes the mundane, the operational, the ability to get things done toward the accomplishment of a predetermined goal (Green, 1988).

Multicollinearity: Refers to the interrelations among the independent variables (Pedhazur, 1982).

Postsecondary administrators of vocational education: Individuals who serve in administrative capacities with major responsibilities for the planning, operation, and evaluation of career and vocational education programs at the community college level.

SCANS Competencies: Skills necessary for success in the workplace as determined by the Secretary's Commissions on Achieving Necessary Skills (SCANS).

School-to-work transition: A method of instruction between a sponsoring clinical agency, the higher education institution, and the student that provides guided training to the student in the work environment and that enhances critical thinking skills and ability to transfer applied and theoretical knowledge to the workplace.

Vocational education: Has been defined in the Vocational Education Act of 1963 to mean vocational or technical training or retraining which is given in schools or classes under public supervision and control or under

contract with a state board or local educational agency. It is conducted as a part of a program designed to prepare individuals for gainful employment as semiskilled or skilled workers or technicians or sub-professional in recognized occupations and in new and emerging occupations. It is also used to prepare individuals for enrollment in advanced technical education programs (Wenrich & Wenrich, 1974, p. 15).

Overview of the Study

The following is a brief overview of the chapters making up this study. Chapter 1 presents the introduction, a statement of the problem, the purpose of the study, research questions and hypotheses, background and significance of the study, need for the study, assumptions, limitations, delimitations of the study, and definition of terms. In Chapter 2 a review of literature pertinent to this study is presented. The main emphasis is on the literature concerning competency studies which identified competencies important to vocational administrators at different levels of vocational education. A brief review of the origin of the position of vocational administrator and the role of community colleges in training skilled workforce is presented. Chapter 2 also includes the tasks, functions, and roles of vocational administrators and women in educational administration. A description of the research methods and procedures used for the study is given in Chapter 3. This includes description

of the survey instrument, its validation and reliability, population and sample description, data-collection process, and data-analysis description. Chapter 4 includes the results of statistical analysis and presentation of tables.

Discussions on major findings, limitations of the study, conclusions, and recommendations are presented in Chapter 5.

CHAPTER II

LITERATURE REVIEW

There is a growing national consensus toward the need for highly trained and skilled workers. Educational authorities and policy makers are acknowledging that, to achieve this level of skilled workforce, training beyond high school is required. As a result, one key element in proper workforce training is the role of vocational administrators at the community colleges. Technological, social, economic, and political changes occurring in the 20th century have increased the demand for more technical administrators who possess the competencies required to train and develop the nation's workforce for international competition. In order to provide the nation with a high-quality workforce, vocational administrators have to be competent in performing their functions as leaders, supervisors, managers, directors, and coordinators of vocational education training programs in community colleges. A review of the literature indicates that few studies have been done on the actual competencies of vocational administrators at community colleges. On the other hand, several identified the competencies needed by vocational administrators. This review of literature therefore focuses on related studies

such as: (a) the role of the community colleges in training skilled workforce; (b) tasks, functions, and roles of vocational administrators at community colleges; (c) competency studies; and (d) women in educational administration.

Before the review of the literature in the four major areas, a brief history of the origin of the position of vocational administrator seems appropriate. Schroeder (1988) wrote that vocational education administration evolved from the Vocational Education Amendments of 1968, which superseded all previous vocational education acts enacted between 1917 and 1963. The 1968 amendments established certification standards and qualifications, teacher training, advisory committees, program approval, building construction, evaluation standards, and, for the first time, funding for administration and supervision of programs in vocational education. According to Schroeder, the Educational Amendments of 1972 created a Bureau of Occupational and Adult Education assigned to the United States Office of Education, which included a community college unit.

Savio (1981) described the beginning of the vocational administrator position, noting that the position of the vocational director was created by the Vocational Education Act of 1963 and the Amendments of 1968, which permitted states to use federal funds for ancillary services such as vocational

supervisors and directors if the minimum qualifications for these persons were written into state plans. The Vocational Education Amendments of 1968 also gave states and local communities more responsibility for programming and evaluation. However, in order to obtain state and federal funds to support their programs, local leaders were required to submit to the state plans that reflected and justified the programs proposed for operation in the local secondary or postsecondary educational agencies.

The Role of Community Colleges in Workforce Training

The role of the nation's community colleges has expanded from serving as junior or transfer colleges to becoming the nation's main workforce trainer. Workforce trends such as economic and technological changes are contributing to an increased role in workforce training as opposed to transfer programs at the community colleges. For instance, Pierce (1993), president and CEO of the American Association of Community Colleges (AACC), stated that community colleges are one of the principal providers of workforce training in the United States and that they are also a critically needed resource for employees of business, industry, and government. In its policy paper on the role of community colleges in providing workforce training, the American Association of Community Colleges (1993) described community colleges as logical providers for key infrastructure training for a number of reasons:

1. A core mission of virtually all community colleges is career preparation, and these institutions have a long history of providing occupational and technical training in fields that reflect the needs of their local economies-often providing some of the most sophisticated training available anywhere in new and emerging technologies.
2. Lifelong learning for adult students is another fundamental commitment of community colleges, and they have extensive and successful experience in providing programs and services for those students who make up the bulk of the existing workforce that requires additional training and retraining.
3. Community colleges have a close working relationship with local constituents, including local business, industry, labor, and government, many of whose representatives sit on college career program advisory boards, as well as on boards of trustees.
4. Community colleges already provide a variety of training programs and services to small and medium-sized businesses where the unmet need for worker training is the greatest.
5. Community colleges have invested in alternative delivery mechanism, including infra-structure for providing distance

education and instructional technology to support independent learning, which are likely to be necessary to serve adult learners who are often unable to attend regularly scheduled classes on a college campus due to work and family commitments.

6. Community colleges have also invested heavily in support services for students, especially in student assessment, counseling, educational planning and academic advising, tutoring and remedial education, childcare, career development, and job placement services that are vital to support nontraditional adult education.

7. There is a community college located within commuting distance of over 90 percent of the total population of the nation, as well as within every congressional district. (American Association of Community Colleges, 1993, p. 8)

Wenrich and Wenrich (1974) stated that the role of the community college or technical institute is to provide specialized vocational and technical education for: (a) those who want to continue their vocational and technical studies started in high school; (b) those who may not have had the opportunity in high school for specialized education in the occupation of their choice; and (c) those adults who are unemployed or employed but need additional training.

Similarly, Theobald (1994) noted that community colleges represent an already in-place and efficient delivery system for retraining the American workforce. Education is no longer confined to the early years of life. Workers who need to have their skills continuously upgraded, people who change jobs frequently in their careers, and women taking courses after raising their children and before entry into the labor force frequently receive their education at the community colleges.

In 1986 there were 203 million technical workers in the American workforce (Carvenvale, Gainer, & Schulz, 1990). These technical jobs are expected to continue to increase in the next 10 years. Johnston and Packer (1987), in their Workforce 2000 report, predicted that of all the new jobs created between 1984 and 2000, more than half will require postsecondary education. The same report predicted that jobs created between now and the year 2000 will require the equivalent of 13.5 years of education (Johnston & Packer, 1987). This prediction seems on target because, according to Boggs (1995-1996), 43% of all American postsecondary students taking courses for college credit and 51% of all first-time American students are enrolled in community colleges. Nationwide, 6.5 million students are enrolled in community college credit programs, and another 5 million are taking community college noncredit courses.

Simmons (1995) commented that, as technological advancements and economic trends reshape the workplace, the displacement and retraining of workers become widespread. Simmons stated that, over the next decade, 1.2 million blue-collar workers and 800,000 white-collar and service workers annually can expect to be displaced from their current jobs.

As a result of the rise in worker training and retraining, the roles of vocational educators at the community and technical colleges are increasing significantly. At the community college level, vocational educators are improving vocational programs by focusing their efforts around improving school-business relationships, partnerships, and program developments. Research findings indicate that joint partnerships and work-based education programs promise to solve a myriad of social and economic problems for the technically oriented and culturally diverse workforce of the future (Green, 1994).

Consequently, community colleges are responding to these training needs by developing more programs that provide the following: (a) students with skills that employers need; (b) increasing cooperation between business and vocational education so that training is available for new technologies for which there is a demand; (c) implementation of the Job Training Partnership Act (JTPA) of 1982 and apprenticeship programs designed to build a coordinated

capacity to prepare America's workforce for employment; (d) the retraining of adult workers to enhance education, business, and labor cooperation in retraining efforts; (e) access to information regarding the market demand for skills that will enable school personnel to develop responsive vocational education curricula; (f) the meeting of vocational education needs of the handicapped and the level of participation of the handicapped in vocational education programs; and (g) identification of the types and levels of occupational competencies necessary for entry and sustained productive employment (National Council on Vocational Education, 1986; National Council on Vocational Education, 1989).

Functions, Tasks, and Roles of Vocational Administrators

Several studies have been done to identify the functions, tasks, and roles of vocational administrators at educational levels other than the community college level. Because there is enough similarity in their administrative functions, these studies are cited here. The roles of vocational administrators continue to evolve as many legislative and societal changes take place. Also, vocational administrators must do many of the tasks that general education administrators perform, in addition to dealing with many complex tasks unique to their role. As stated elsewhere, to qualify for funding, vocational

administrators must comply with many federal mandates not required of other educational administrators.

Valentine (1971) stated that the administrators charged with the responsibilities for the improvement of vocational programs must be knowledgeable in all the aspects of administration of the programs therein. He noted that the administrative processes do not lend themselves to easy solutions and that there is no satisfactory substitute for judgment, perception, experience, and education in serving in the role. In addition, the vocational administrator operates in a hostile environment because of the changing attitudes and values of teachers, students, and the general public, all of which add pressure (relative to students and fiscal accountability) on the administrators. This finding and others that follow in the literature review make the case for a need for competent administrators and an identification of the competencies possessed by the administrators who perform these administrative roles.

McQuay (1977) described the duties of vocational administrators to include proposing, justifying, developing, and initiating new programs; recruitment and selection of professional staff; direction and supervision of the overall program of occupational education; evaluation of the effectiveness of the overall occupational education programs; coordinating advisory group

services to the various occupational groups; acting in a liaison capacity with college transfer of academic divisions within the institutions; and administrating the budget for occupational programs. In a paper that McQuay presented at the Pennsylvania Vocational Conference on who is charged with occupational education in public community colleges, three administrative duties were viewed by the occupational directors as highest in terms of their responsibility: (a) initiation of occupational programs; (b) evaluation of overall occupational education programs; and (c) administration of education instruction. Responsibility for inservice occupational staff development activities was viewed as the lowest on the list of responsibilities.

McQuay (1977) cited Wilber as stating that the demands made upon the individuals in charge of the vocational programs comprise both leadership and executive types of ability. He also described Wilber as feeling that the technical education administrator is far more than an executive: he or she must be an inspired leader capable of "selling" the program to the community while "buying" cooperation within his or her own organization.

Definitions have been used to clarify the responsibilities of vocational administrators. For instance, Baker and Selman (1985) cited Swanson as defining administration as follows:

[It is] the process of planning, organizing and operating an educational activity for achieving the objective of the activity. There must be some organized manner for allocating the financial, material, and personnel resources which are available to an activity. There must be some method of developing policy, coordinating activities, and assessing the achievements of the use of these resources in relation to the goals of the activity. This process is administration (p. 47).

Wenrich and Wenrich (1974) described the functions of administration in vocational education to include curriculum and program planning; management of instruction; student development services; personnel administration; fiscal and physical planning and management; building a constituency; and evaluation, accountability, and research.

Bjorkquist (1982) defined the functions of the vocational administrator to include supervision, administration, management, and leadership. The management functions include:

1. Planning: set objectives, decide how to reach them, forecast, estimate resources needed to reach goals.
2. Organizing: decide on positions to be filled, duties and responsibilities of positions; coordination of efforts of individuals.
3. Staffing: find persons for organized positions.

4. Directing: provide day-to-day direction, communicate expected results to subordinates, help improve skills of workers.
5. Controlling: determine how well jobs have been done, what progress has been made toward goals.
6. Innovating: applies to all management functions.
7. Representing: represent the group in dealing with outside organizations. (p. 10)

Bjorkquist also stated that supervisory functions include directing the efforts of others toward the goals of the organization and coordinating their efforts to achieve results efficiently. "Supervisors must lead, motivate, organize, and communicate to be effective" (p.22).

Bjorkquist finally described the leadership function of vocational administrators and related it to administration and management, quoting Little as follows:

Leadership may be considered as one of two primary functions of administration; the other function is management. Leadership is required in the exercise of either function but the two functions make different psychological demands upon the administrator. The leadership function requires the capacity to "live ahead" of his institution's needs to the public and the public's needs to his institution; and to conceive and

implement strategies for effecting changes required for his institution to fulfill its purpose. The management function requires the capacity to arrange and operate his institution in a manner which elicits an efficient and effective effort of the total membership of his institution toward its purposes. The leadership function is a stimulating, prodding, and sometimes disruptive influence, while the management function has a smoothing and stabilizing influence. The first emphasizes creative planning, initiative, and future facing boldness; the second stresses efficiency and productivity through teamwork and consideration of others. (as cited in Bjorkquist, 1982, pp. 10-11)

Finch and McGough (1991) stated that, for vocational administrators to be effective, they have to perform both administrative, supervisory, and leadership activities and responsibilities that are central to vocational/ technical education. The authors defined the roles of vocational education leader from a three-dimensional standpoint: the human dimension, the environmental dimension, and the task dimension. Under the human dimension, the authors listed these key elements: human relations expertise, creativity, commitment, flexibility, and futuristic orientation. The authors stated that the successful involvement of others builds a constituency that, in turn, provides support for future planning and development. The environment dimension reflects the

areas in which the vocational leader must function, such as the school, the community, and the employment setting.

A detailed description of the task dimension by Finch and McGough (1991) is important here because the four task dimensions are at the heart of vocational administration. The authors defined and described the four basic elements of the task dimension as planning, development, management, and evaluation as follows:

Planning - The planning process in occupational education is both difficult and complex. Anyone who ventures into this area should, therefore, have a strong commitment and put forth considerable effort. Input for planning may come from a variety of sources, including the school, the community, and the work setting as well as through census and labor market data. Planning may focus on facilities, equipment, programs, space, and finance and definitely includes provision for meeting the needs of special groups (e.g., disadvantaged and handicapped students).

Development - Development is a continuous process in occupational education. It represents the need to improve personnel capabilities and build strong ties outside the walls of the school. Both internal and external development involves the cooperative implementation of plans

to meet professional person's needs. Development within the community includes activities such as dealing with occupational advisory committees, conducting public relations campaigns, and articulating activities with community organizations and agencies.

Management - The occupational education leader's involvement with management may be quite intense because the area is so broad.

Management responsibilities cut across administrative and supervisory roles and often call for shared involvement in their execution. One such aspect is that of effecting curricular change. The change process clearly calls for active participation of all affected persons. A similar situation exist with regard to other aspects of management. These include management of instruction, support services, personnel, labor relations, and finances.

Evaluation - A final but no less important element of the task dimension is evaluation. The occupational education leader has a continuing involvement with evaluation and an obligation to ensure that programs meet the standards of the profession. Evaluation is, by necessity, an integral part of the educational process and is conducted by all professionals. It may range from evaluation of student achievement to accreditation by an outside agency. The leader plays an important role

in the entire evaluation process, beginning with the development of comprehensive evaluation plans and continuing through context, input, process, and product evaluation activities. (Finch & McGough, 1991, p. 12)

Bjorkquist (1982) made observations similar to those of Finch and McGough (1991) on the roles and functions of the vocational administrator. According to Bjorkquist, vocational administrators need to have some understanding of the many functions carried on within vocational education. They need to know enough to decide when a function should be performed, to ascertain the conditions needed to fulfill it, and to judge the quality of the results. Administration involves working with other individuals and achieving results through their work. Bjorkquist noted that most individuals in vocational education who hold positions commonly thought of as administrative are performing some supervisory functions. Likewise, those with the title of supervisor are usually performing some administrative activities. Bjorkquist suggested that it is helpful to think of supervision and administration as functions or sets of responsibilities rather than as position descriptions or job titles.

In a book designed to run successful vocational programs Bentley (1977) explained the different areas vocational administrators must pay

attention to operate successful programs. Vocational administrators must be able to organize an effective advisory committee, determine community needs, prepare facilities, purchase and install equipment, locate and obtain funding, prepare proposals, evaluate, recruit, and train vocational personnel, develop or select appropriate curriculum guides, establish rapport with teachers, perform budget and fiscal management, perform periodic program evaluation, promote and update programs. Finally vocational administrators must keep up to date.

Meyer (1970) stated that the duties most frequently performed by vocational directors in public junior colleges were: (a) working with advisory committees; (b) maintaining contracts with business and industry; (c) serving as a consultant in the development of course and program objectives; (d) assisting in the recruitment of teachers; (e) speaking to lay or professional groups; (f) orienting new teachers; and (g) evaluating outcomes of instructional programs.

One function of vocational administrators noted above is to work in cooperation with advisory councils. Blair (1973) conducted a case study of the functional relationships between the administrative staff of a public community college, Belleville Area College (BAC) in Illinois, and its 21 vocational-technical advisory committees. Results indicate that the majority of the committees meet only once or twice each year; they are willing to work

more, but are not provided with tasks to be accomplished. There is little intercommittee communication, and administrators dominate each committee. The author suggested that attempts at more efficient organizations and inservice education for all involved in the program would result in a more efficient use of the obviously enthusiastic laymen available for advisory committee or consultant use by BAC.

Valentine (1971) outlined the vocational administrators' management functions to include public relations, curriculum and instruction, student personnel, staffing, facilities and equipment, business management, determination of the community power structure (political, social, and economic), professional negotiations, leadership development programs and institutional research and development programs. He stated that these management functions require that the administrator has a working knowledge of the organization and of its role within the institution. The administrators must work with accrediting agencies, state, national, and regional. In addition, essential functions of the administrators include making long-range plans, reviewing strategies, establishing priorities, and determining alternatives for improving the status and image of occupational education programs. Utilization of scarce resources, community relations, program evaluation, and accountability are all major responsibilities identified by Valentine in his guide.

Valentine et al. (1979) also did a study on "role clarification and determination of the responsibilities for administrative tasks performed by local vocational administrators in Colorado". Although the study was local, its implication is national. Using a Likert-type scale survey questionnaire and a modified four-round Delphi research method, Valentine and his group collected data from local vocational school directors and their superintendents, and from community/4-year college deans/directors of occupational education and their presidents. They described what the key duties entail for local director of vocational education, and community/4-year colleges. The key duties include:

1. Business and financial management--in coordination with others--prepare, administer, direct, supervise, and evaluate vocational education budget processes.
2. Facilities and equipment--in coordination with others--administer, direct, prepare, supervise, and evaluate vocational education facilities and equipment.
3. Program planning, development, and evaluation--in coordination with others and/or in supervision of others--direct, administer, supervise, and evaluate vocational education programs.

4. Instructional management--in coordination with others and/or in supervision of others--direct, supervise, and administer the delivery of vocational education programs.

5. Student services--in coordination with others--administer, direct, and evaluate vocational education student services.

6. Personnel management--in coordination with others--supervise, administer, direct, prepare, and evaluate vocational education personnel processes.

7. Community-school relations--in coordination with others--supervise, evaluate, prepare, administer, and direct vocational education community and school relations.

8. Professional relations--in singular activity--supervise, administer, and evaluate vocational education professional relations.

(Valentine et al., 1979, p. 152)

A review of the literature indicates that the roles and functions of vocational administrators are dependent on the level of authority the administrator possesses. Valentine et al. (1979) described the vocational administrator's organizational relationships at community/4-year colleges as follows: is under the general direction of the president and/or his/ her designee; coordinates with appropriate college personnel, agencies, and groups; supervises

and directs all line, staff, faculty, support, and certified personnel within the college vocational education delivery system; consults with appropriate personnel in governing, coordinating, and kindred agencies; and administers the vocational education system in relationship to the stated mission and goals of the institution. They further described the areas in which vocational administrators have full, partial and no authority in the organizational hierarchy. For instance, the vocational administrators have full authority to administer and supervise vocational budgetary functions, vocational facilities, vocational programs and personnel; to implement procedures; and to recommend policy changes. They have only partial authority in administering and supervising student services and community-school relations, whereas they have no authority when it comes to deviation from policy matters.

On performance expectations, Valentine et al. (1979) stated that the vocational administrators performance is considered satisfactory according to the efficient and effective use of financial resources, facilities and equipment, design, or programs; delivery of programs, delivery of student services; supervision of personnel; establishment of community-school relations; and the efficient and effective maintenance of professional skills and relations.

Competency Studies on Vocational Administration

The literature search revealed that several competency studies have been completed to identify the competencies needed by vocational administrators to function in their roles. The importance of competency studies on vocational administration was noted by Norton and Harrington (1987) who remarked on the significant role that the Consortium for the Development of Professional Materials for Vocational Education has played in assisting with the identification of new and emerging competencies; developing modules, guides, and slide/tape presentations; addressing the important competencies; and assisting several states in developing and implementing either internship or externship-types of training programs. Norton (1983) noted that the development of high-quality preservice and inservice education programs requires knowing what administrative competencies vocational leaders must acquire to be successful in their various roles.

According to Combrink (1983), one of the first and most comprehensive competency studies was developed by the Southern States Cooperative (SSCPEA) in 1956. The members of SSCPEA established a comprehensive list of "competencies" that, in effect, portray the job. The SSCPEA competency pattern integrated three elements in its plan in describing competence: critical tasks, "know-how," and theory. Combrink (1983) cited

Graff and Street, who reported that the end product of the work of the SSCPEA was a listing of the areas of critical tasks of educational administration and a listing of the "know-how" needed by educational administrators to perform these tasks. The basic philosophy of the SSCPEA study, according to Graff and Street, has served as a model and guideline for all subsequent educational competency studies (Combrink, 1983, pp. 17-18).

A number of competency studies (Baker & Selman, 1985; Combrink, 1983; Fair & Simmons, 1978; Georgia State University, 1984; Meyer, 1970; Norton, Ross, Gonzalo, & Hobart, 1977; Norton & Harrington, 1987; Savio, 1981) have traits similar to the SSCPEA model in identifying the administrative competencies needed by vocational administrators. Most of the studies were done at state levels. Norton et al. (1977); and Norton and Harrington (1987) study were the most comprehensive done at the national level. It also identified vocational administrative competencies for secondary and postsecondary administrators.

One such study was a 1984 competency list for vocational administrators compiled by the Georgia State University Department of Education, Atlanta Center for Vocational Leadership. The publication contained lists of job responsibilities needed by Georgia's vocational education administrators. The competency lists were for local system director of

Cooperative Educational Service Agency coordinator, vocational high school supervisor, postsecondary area school director, postsecondary adult coordinator, and postsecondary instructional coordinator. For each type of administrator, competencies were grouped under nine job responsibilities: (a) program planning, development, and evaluation; (b) instructional management; (c) student services; (d) personnel management; (e) staff development; (f) professional relations and self-development; (g) school-community relations; (h) facilities and equipment management; and (i) business and financial management.

A study by Savio (1981) examined the competencies needed by local administrators of Michigan vocational education programs. The Administrator Task Inventory, an instrument developed by Norton et al. (1977), was used to identify and verify the importance and need of training for 191 vocational administrator tasks by 28 Michigan vocational administrators at the secondary, postsecondary, and career-education-planning-district levels. After the means and medians were established for both the importance of the task and the degree of training needed to complete the task, data from the survey were compared to corresponding data collected in the National Administrator Research study. Respondents ranked evaluation of instructional program effectiveness as the most important task of the administrator. Other

high-rated task areas included professional relations and self-development and business and financial management.

Fair and Simmons (1978) identified and analyzed the competencies needed by local vocational administrators and developed an administrative model for training local vocational administrators in Mississippi. An inventory of the competencies needed was developed through a review of related literature and was revised by a panel of five workshop participants. The revised list of competencies contained 168 task statements organized into nine categories. The data were gathered from secondary and postsecondary vocational administrators in Mississippi. The responses were analyzed to determine the frequency with which each task was used, the degree of training needed for each task, and the characteristics of the administrators responding. With respect to the amount of time spent performing each task, two categories--instructional management and business and financial management--were rated the highest. These two categories, along with those of program planning, development, evaluation, and instructional management, were rated the highest with respect to amount of training needed. The results indicated that the largest number of vocational directors in Mississippi have nine years of experience or less.

Norton et al. (1977) conducted a national study on the identification and national verification of competencies important to secondary and postsecondary administrators of vocational education. This study was later revised in 1987. The purpose of the research was to identify and nationally verify the competencies considered important to local administrators of vocational education through use of a curriculum development approach called Developing a Curriculum (DACUM) to update the competencies identified through the literature search and to identify an additional 36 to 40 tasks not found in the literature. All competency statements were merged into a single Administrator Task Inventory Instrument (191 task statements). This comprehensive, nationally validated instrument has been used by other researchers to identify local vocational administrative competencies needed and to develop vocational administrative modules for inservice training programs.

Brantner, and Burrell (1977) did a study on competency profiles of vocational administrators of area vocational-technical school directors in Pennsylvania. Three of the four questions addressed were: What was the ratio of time devoted to management functions as compared to planning functions? What were administrators' self-rated strengths in management and planning responsibilities? What were administrators' self-rated weaknesses in management and planning responsibilities? The findings revealed that

administrators utilized 67% of their time in management activities and 33% in planning activities but felt that the ratio of time spent on these two activities should be equivalent. "Coordinating activities of the staff" was the task performed with the most confidence; "preparing a student bill of rights" and "updating student's role in decision making" were performed with the least confidence. Overall, planning activities were performed with less confidence than management activities. "Meeting the community's needs in job placement" was the activity that most administrators performed with competence. The lowest overall competence was "coordinating activities of the nonprofessional staff." Finance was the only area in which administrators felt that their performance was equal as to confidence and competence. Finally, inservice training was felt to be the most effective method of training.

Meyer (1970) conducted a study involving 450 vocational education administrators. The primary purpose of the study was to determine the competencies needed and the competencies possessed by vocational education administrators. Another purpose was to determine where the administrators of vocational education feel that they acquired their competencies. Among his findings, all three scalar groups of vocational administrators--top management, middle management and supervisory management, reported that they needed more competency than they possessed. The findings also indicated significant

differences in the kinds of competencies needed and possessed by vocational education administrators at the three scalar levels of educational management. For instance, top management administrators had more competency concerning state school laws regarding education in general than did middle management and supervisory management. Another finding of this study is that most of the administrators reported that they acquired the competencies "on-the-job". Meyer recommended training for all three scalar levels of vocational administrators for all the competencies developed for his study, based on how the different levels of management indicated their degree of competency needed versus the competencies possessed.

Baker and Selman (1985) assessed the competencies needed by vocational education administrators in Alabama, with implications for professional development programs. The study was designed to determine: (a) the administrative tasks performed by secondary-level vocational education administrators; (b) the administrator tasks performed by deans of instruction in technical colleges; (c) the perceived competency level of administrators and deans to perform the tasks; and (d) the extent of general agreement among superintendents of education, secondary-level vocational administrators, and the program review reports with regard to the importance of competency areas and the related need for program improvement. The study found that the

immediate professional development needs for secondary vocational administrators, by task priority, included developing a complete plan to promote vocational education, conducting program promotional activities, developing a community involvement plan, and ensuring continuing communication with the advisory council. Intermediate needs included identifying alternative funding sources, influencing traditional funding sources to benefit the program, using data to identify the vocational programs and support services needed, and planning a staff development program.

Immediate professional development needs for deans of instruction by task priority included operating and equipment preventive maintenance programs and planning demonstrations, pilots, and exemplary programs. Their intermediate needs included insuring continuing communication with advisory councils, constructing a schedule conflict matrix, and organizing a student learning resource center. They concluded that the data may be useful in determining content to be included in professional development activities for vocational administrators.

Administrative competencies cannot be studied without touching on the administrator's professional development needs. Lovelace and LaBrecque (1992) conducted a five-phase study to develop a database that identified the professional improvement needs of postsecondary technical/vocational

administrators as expressed by individuals responding to their survey. Using a review of literature, the authors identified competencies/tasks performed by individuals employed in the administration of technical/vocational programs. Their study found that 54% of the 438 administrators who responded felt that their institutions did not provide assistance in developing a plan for professional development. The respondents indicated a need for professional development in all 133 competency/task statements on the questionnaire, with the most pressing needs related to program planning, development, and evaluation. The authors recommended the development of more extensive professional development programs for postsecondary administrators.

These competency studies identified the competencies needed by vocational administrators, but none dealt with the actual possession of the identified competencies.

Women in Educational Administration

Little research is available on women in vocational administration; as a result, studies on women in educational administration are substituted. A review of the literature, revealed three main themes relevant to this study: (a) under representation of women in high-level administrative posts; (b) barriers to women's representation in administration; and (c) women as administrators.

Many studies done on women in administration reported similar opinions and research findings. In addition, most of the problems and issues in research on women in administration are repetitions of old studies. Baron (1984) reported in a follow-up survey of 1987 research on women in management that, with only a few exceptions, the women list the same problems reported in 1978. As a result, only representative portions of the literature are discussed here.

Under Representation of Women

Women are making progress in administration, yet they are still under represented in leadership roles. The research is replete with information and concern that women are under represented in high-profile administrative positions. Hansot and Tyack (1981) noted that men have consistently held administrative positions in which "power, pay, and prestige were greatest" (p. 8). Shakeshaft (1987) stated that, despite all positions having been occupied at least once by a female, the majority of women are concentrated on the lower rungs of the ladder and that women are most often found in central office staff positions, either as specialists or as supervisors, or in an elementary principalship. Ozga (1993) made similar observations on the absence of women in educational management, stating that women form the majority of the workforce in education but are under represented in its management.

According to Ozga, the under representation occurs in all sectors and in all developed countries. Women are more visible in the management of education offered to younger pupils, but as the age of pupils increases, the proportion of women diminishes. Similarly, in higher education, especially in the universities, women managers make up such a small proportion of management that they are almost invisible (Ozga, 1993, p. 4). On the same issue, Restine (1993) stated, "Women have influenced and made notable contributions throughout the history of education, yet--although women continue to represent the majority of teachers--the representation of women in school administration continues to be disproportional" (p. 15).

As evidence of this under representation, statistical data have been used to make the point that women are still under represented in administration despite laws barring discrimination in the workplace. Restine (1993) cited a 1992 publication by the American Association of School Administrators, Women and Minorities in School Administration: Facts and Figures 1989-1990, in which 91.6% of superintendents were men, whereas only 4.6%, 0.4%, and 3.4% were women, minority women, and minority men, respectively. For the assistant superintendency, 70.8% and 17.3% were men and women, respectively whereas in principalship representation, 65.0% were men and 20.6% were women. A close look at these figures strengthens Ozga's

(1993) point that women are more visible in the management of education of younger pupils; as the age of pupils increases, the proportion of women diminishes.

Although the figures used were for secondary school, the concern for women's under representation is equally applicable at postsecondary institutions. For instance, a National Education Association (1973) survey showed that in 2-year institutions of higher learning, 3 of the 520 presidents and 4 of the 263 academic vice-presidents/deans were women. In the same survey, only 2% of administration's top-level positions were held by women at both 4-year and 2-year institutions of higher education. Admittedly, women have made great strides since the 1970s, but more recent statistics follow similar trends. Farnsworth (1984) acknowledged that women are still clustered in female ghettos--98% of all secretaries are female, and 75% of all elementary school teachers, bookkeepers, cashiers, waitresses, nurses, typists, maids, receptionists, and bank tellers are women. Pearson, Shavlik, and Touchton (1989) stated that women hold only 10% of all college and university presidencies and that salary discrepancies between men and women still exist at every level of the college and university hierarchy. Touchton and Davis (1991) compiled the following statistics: In 1989, there were 328 women chief executive officers of colleges and universities, making up only 11% of all

CEOs of institutions accredited by the six major regional accrediting associations. In 1989 minority women represented 13% of all women presidents. In 1987, of the deans in academic areas 27% were women. This percentage ranged from a high of 97% women for deans of nursing to a low of 8% for deans of law. Women held more than one half of the senior positions only in the areas of nursing (97%) and home economics (77%). The proportion of women administrators increases at lower levels of the organization. For example, in admissions offices in 1987, women held 28% of the director of admissions positions, 50% of the associate director positions, and 66% of the assistant director positions.

Even in Texas, women are under represented in high-level administrative posts. In August 1991, the Council for Women in Higher Education was established by the Texas Higher Education Coordinating Board in response to Senate Concurrent Resolution (SCR) 52 of the 72nd Legislature of the State of Texas. This resolution stated that women are under represented in all ranks of tenure-track faculty, in presidencies, and as members of governing boards in Texas public institutions of higher education. Reviewing the data available from Texas Higher Education Coordinating Board, the Council for Women in Higher Education concluded that women are under represented in numbers, percentages, and salary levels in Texas community colleges and universities.

The council noted that, although women constituted slightly more than half of the undergraduate enrollments in Texas public institutions of higher education in 1989, they comprised only 27% of the full-time faculty at universities and 43% of full-time faculty at community colleges. Only about a third of the executive and senior administrative staffs of higher education institutions-- 31% in senior institutions and 35% in community colleges--are women. From the council's findings, the status of women in institutions of higher education at the time SCR 52 was passed in January 1991, was 52% of the undergraduate students, 34% of the assistant professors, 21% of the associate professors, and fewer than 10% of the full professors. Of 41 university presidents and chancellors, only four were women. Of five Texas State Technical College presidents and chancellors, none was a woman. Of 60 public community college presidents and chancellors, only four were women. Of 108 members of boards of regents, only 24 were women. Of 12 boards of regents, only one was chaired by a woman (Texas Higher Education Coordinating Board, 1991. p. 5).

In its report, the U.S. Department of Labor (1991) acknowledged that although women have made considerable gains in entering the workforce in the last few decades, there remains a dearth of minorities and women at management levels. The department called this phenomenon the "glass ceiling

effect," which it defines as those artificial barriers based on attitudinal or organizational bias that prevent qualified individuals from advancing upward in their organization into management level positions. The report stated that, in some companies, if there is not a glass ceiling, there is certainly a point beyond which minorities and women have not advanced.

Research conducted at the Human Engineering Laboratory of the Johnson O' Connor Research Foundation (Durkin, 1978) supported the notion that women's under representation in administration is not the result of lack of competence, because there are no discernible sex differences in the following aptitudes between men and women: analytical reasoning, eyedness, foresight, inductive reasoning, memory for design, number memory, objective personality, subjective personality, pitch discrimination, rhythm memory, timbre discrimination, tonal memory, and tweezer dexterity. Women excel in the following: finger dexterity, graphoria (accounting aptitude), ideaphoria (a measure of rate of flow of ideas used in activities involving persuasion and verbal fluency, such as in sales, teaching, writing, advertising), observation, silograms (measures the ability to easily form associations between known and unknown words), abstract visualization--75% of women versus 50% of men possess abstract visualization, whereas men excel in grip and structural visualization. Durkin (1978), on the "Potential of Women", named objective

personality, abstract visualization, and high English vocabulary as aptitudes that seem to underlie successful management. Durkin concluded that equal numbers of men and women possess objective personality and high vocabulary, but that more women have abstract visualization than men. The ratios are three women in four, one man in two. Theoretically at least, there ought to be more women in management than men. However, in reality, this is not the case. He concluded that, in most occupations, if positions were based solely on aptitudes, men and women would be found in approximately equal numbers.

Barriers to Women's Representation in Administration

Several explanations have been given as to why women are under represented in administration. Shakeshaft (1987), reviewing the literature and works of other writers on women in administration, explained the barriers in terms of three models: the Women's Place Model, which assumes women's nonparticipation in administrative careers as based solely on social norms; the Discrimination Model, which "draws on the assumption that institutional patterns are a result of the efforts of one group to exclude participation of another"; and the Meritocracy Model, which assumes that the most competent people have been promoted and, thus, women are not competent (Shakeshaft, 1987, p. 82).

Restine (1993) cited three similar reasons why women are under represented in administration: women's socialization, formal and informal barriers to women, and the myths about women's leadership. Explaining women's socialization theory, the assumption is that women are unsuited for administrative work. The author stated that the gender-role stereotypes that pervade the culture and the concept of "one's place," when embraced, inhibit all people, particularly women, from recognizing their personal capacity to lead. According to Restine, many women are capable of performing in all roles and of rendering quality decisions in areas such as purchasing mechanical equipment, negotiating, and collective bargaining, which have been assumed to be a man's sphere of decision. Such capacity is not necessarily solely a function of biological description; rather, stereotyping and bias about women's backgrounds, experiences, and interests have produced unfavorable attitudes about women's ability to function in certain situations and in particular positions.

Shakeshaft (1987) argued that all the barriers that women face in moving into administrative positions are subsumed under male hegemony or male dominance. She argued that the explanations of the internal barriers such as low self-image, lack of confidence, and lack of motivation listed as contributing to women's lack of achievement in administration are inadequate

and focus on women's inadequacy, with a tendency to blame the victim. She pointed out that, although women have been shown to have lower self-confidence than men in public-sphere activities, these studies of self-confidence were confined to public sphere activities. Self-confidence studies have not been studied through the eyes of women; thus, it is not clear whether women have less self-confidence or whether they only have less self-confidence in areas in which they are traditionally thought not to excel. Shakeshaft summarized this point in the following:

Thus, what has often been seen as a personal failing of women (lack of self-confidence) might be more accurately seen as a consequence of a sex-structured society that generates a belief in females that they lack ability; a belief reinforced by an organizational system that prevents women from developing confidence in public sphere activities through both lack of opportunity and lack of positive feedback. This, then, is an external not an internal barrier to women and one that flourishes in and can be traced to a male-dominated society. (p. 85)

Ozga (1993) described the literature's review of women's absence from positions of power as ranging from deficit theories--i.e., those that stress women's inadequacy or incapacity--to more structural explanations that stress issues of power and control and the patriarchal construction of society. The

first type of approach explains women's absence from positions of power in terms of their inadequacy and incapacity, whereas the second stresses the barriers to women's advancement--barriers that include the inculcation of "feminine" qualities by the socialization process and the exclusion of these qualities from masculine, public-sphere activities. These barriers also include the interest of most men in the preservation of a status quo, which favors them, and women's perceptions of their unequal status and of masculine definitions of management as "natural" (Ozga, 1993, p. 8).

Buttressing the point made by Ozga (1993) on preserving status quo, Freedman (1980), put it more succinctly:

Opening up leadership to women, blacks, and other political minorities must inevitably engage a growing opposition from those who now enjoy a privileged monopoly. Whole classes do not willingly surrender their advantage; institutions are never self-liquidating. It is evident, therefore, that the struggle to broaden the franchise of leadership has to be waged within this system . . . because this is what is. But it cannot be won within this system, a system of disproportionate access to the sources of wealth, power, and information. (p. 33)

Stead (1978) summarized the barriers faced by women as double standards of performance, lack of mentors, sex-typing of jobs, misperceptions

of the competence of women, ambiguous reward schedules, informal social cliques, attitudinal prejudice, inappropriately assigned tasks, less opportunity for advancement, lack of role models, and little consideration for the special problems of job-family role conflicts that are faced by many women.

Kanter (1977), known for her *Men and Women of the Corporation*, attempted to explain how organizational structures and divisions instead of lack of competence create an atmosphere that discriminates against women and blacks. In Kanter's (1987) more recent article, on "Men and Women of the Corporation Revisited," the author concluded that the premise of her 1977 book still holds and that productivity, motivation, and career success are determined largely by organizational structure. Kanter (1977) noted in her book that the distribution of opportunity and power and the social composition of groups within organizations are variables in women's lack of managerial success. According to Kanter, women's opportunities are blocked; they tend to have little power in the larger organizational hierarchy; and those who do get close to the top are often predominantly surrounded by colleagues who are male.

Writers such as Restine (1993) and Shakeshaft (1987) identified use of female style of administration as another barrier against women in getting into leadership positions. According to Shakeshaft, this style of administration was

taught and fostered by organizations such as the national Congress of Mothers (now known as the Parent Teacher's Association). This method of administration was seen as inconsistent with the efficient functioning of schools. Women in these organizations learned, both formally in classes and informally through experience, leadership skills that promoted democratic and egalitarian styles of decision making (Shakeshaft, 1987).

Loden (1985) expanded on this authoritarian/democratic method of management by describing the masculine method of management as competitive, hierarchical, authoritarian, leader-controlled, unemotional, and analytical in problem solving, while characterizing feminine leadership behaviors in such terms as cooperation, collaboration, intuition, empathy as well as rationality.

In recent times the combination of women and men's leadership style has been recognized as a method of effective administration and leadership. This is described as an androgynous form of leadership (having a balance of masculine and feminine traits). Prior to this recognition, women's style of leadership has burdened women administrators, and, as Burstyn (1980) explained, women's style of leadership is at odds with the authoritarian approaches to school leadership currently in vogue--comfortable styles for males with backgrounds in both business and military. Unlike their male

counterparts, female leaders are burdened by the misconception that the judgement of their behavior would be based on their sex role appropriateness. Women experience incompatible expectations between managerial and female roles. The female administrator is placed in a double-bind situation that does not exist for the typical male. If she acts assertively or demonstrates initiative and ambition, she may be seen as hostile, maladjusted, and over controlling. If she fails to act in a directive manner, her position of power may be undermined.

Women as Administrators

Although women's style of management may have posed a problem in the past, women researchers are recognizing the fresh approach that women bring to administration and are arguing for its inclusion in current administrative theories:

Women are not steeped in traditional management. They bring fresh ways of problem solving to meetings, and they bring a new value system to policy. Women tend to be people minded. They are generally more aware of the human factor in business relationships and more sensitive and concerned about the personal feeling of their peers.

Women as a group bring a degree of sensitivity to the management style

that allows a broader perspective in determining courses of action and decision making. (Stead, 1978, p. 154)

Restine (1993) stated that the literature documents little or no difference in the competence of men and women in administration, but rather research findings document the markedly different ways in which men and women administer schools. Ozga (1993) noted that women administrators bring a different perspective to their tasks. She described women's leadership style as less hierarchical and more democratic. Ozga cited some of the differences:

Definitions of task---Women emphasize cohesiveness. They are much less individualistic, and spend time on fostering an integrative culture and climate.

Stress/conflict management--Women cope more readily with "routine" stress, and defuse conflict. They do not engage in displays of anger as control mechanisms (and hence may be mistakenly judged as "weak").

Group management--Group activities are much more highly valued by women than by men. Men attempt to retain control in group situations, or they withdraw. (p. 11)

Ozga (1993) listed the nurturing paradigm, which broadly defines the feminine aspects of personality in terms such as caring, creative, intuitive, aware of individual differences, noncompetitive, tolerant, subjective, and informal. The defensive/aggressive paradigm broadly defines aspects of male personality in terms such as highly regulated, conformist, normative, competitive, evaluative, disciplined, objective, and formal. The author concluded that it is possible for women to develop management strategies that do not mirror the aggressive, competitive, hierarchical approach favored by many male administrators.

Kunde (1996) reported Irwin and Perrault's study of 915 male and female managers, using "360-degree" performance evaluations--a widely used assessment tool in which managers are evaluated by peers, subordinates, and supervisors-- in which women scored higher than men on 28 of 31 criteria. Among the variables studied were planning for the future, generating ideas, resolving conflicts, and maintaining high productivity. The researchers found that the trend is toward team management and a participative style of leadership. These are styles with which woman administrators are already comfortable.

McAda (1980) stated that, although women executives have much in common with men, differences do exist, but mostly in ways that would serve to

increase the probability of women's functioning well in administrative positions. Although the culture emphasizes differences, both men and women have intellect, spirit, dreams, analytical ability, problem-solving ability, and leadership potential (McAda, 1980, p. 33).

In summary, women administrators are now making deliberate and informed choices to reject masculine styles of leadership behaviors (Ozga, 1993). In the past, women adapted the male style of leadership in an attempt to prove that they are capable, but recent research by women is advocating the acceptance of the feminine style of leadership as equally effective (Ozga, 1993; Pearson et al., 1989; Restine, 1993; Shakeshaft, 1987).

Progress and Status of Women in Educational Administration

Beyond discrimination and barriers issues, several researchers have profiled the woman administrator and described research done on women to identify factors that have helped women advance in administration. Such studies on the analysis of attributions leading to career success and problems leading to career difficulties, as perceived by women managers or administrators, help to remedy women's low work status and also help to develop programs that initiate women's upward mobility.

Crenshaw (1983) conducted one such study. She concluded in her research that, generally, women agreed that the profile for career success

includes ability; ambition; compassion; competence in profession; professionalism; concentration of purpose; considerateness; conversational skills; courtesy; creativity; decision-making ability; diligence; emotional control; flexibility; fondness for people; generally pleasing personality; goal-setting; honor, dignity, principles; individualism and independence; intelligence; interpersonal skills; justice; observation; patience; perceptiveness; personal physical appearance; pleasant facial expression; pleasing voice; positive mental attitude; problem--solving ability; self-concept and self-confidence; self-reliance; truthfulness, honesty, sincerity; and health. The problems listed are the "expected societal" role of the woman as a support person for others; physical performance of a "traditional" role and a worker role; lack of time for performance of all roles; and lack of money (Crenshaw, 1983 p. 120).

Patton (1990) cited Insel and Jelinek's best features for success as follows:

- 1) Competence--she must be intelligent, educated and have a variety of experience.
- 2) Persuasive--she must be able to accomplish her mission within the organizational structure
- 3) Controlling--she must be able to draw her valuable resources of people and material together and cause them to work harmoniously

- 4) Quick--she must be able to deal quickly and competently in many situations
- 5) Compulsive--she must have drive and dedication
- 6) Image--she must represent success in her entire presence, while being flexible to each situation. (p. 170)

Patton (1990) also cited work by Allison and Allison on some specific suggestions for success in management in higher education:

- set high goals, be precise and enthused about them
- remember your past successes and keep a record of them
- promote someone else who is also successful as soon as possible
- stick up for your people, know their concerns
- make clear decisions and let them be known
- if you don't know the answer, say so
- Laugh, enjoy yourself, your people, and your work
- don't promote the father/daughter syndrome with your colleagues
- be outgoing, but not flirtatious; be aware of your public relations at all times
- be professional in the way you present yourself, your office, and your area of concern

- be warm, concerned, and remember the compassion you need is also a need of those above and below you. (p. 171)

Bernstein (1984), Chamberlain (1988), Secor (1984), Shavlik & Touchton (1984), Shakeshaft (1987), Speizer (1984), and Tinsley (1984) all described projects promoting the advancement of women in educational leadership. Many of these administrative programs have multiple goals, such as the identification of new leaders, development of management skills, enhancement of leadership abilities, and promotion of leadership vitality (Green, 1988, p. 22).

Shavlik and Touchton (1988), writing on women as leaders, stated that women's needs are similar to men's in those areas generally regarded as "competency areas" for administrators and managers. Both must be able to work effectively with people, handle budgets and personnel, set policy and make decisions, know the significant issues, cultivate their ability to provide vision for their institutions, enhance their good personal characteristics and diminish their weaknesses, and develop their political acumen. They need to have training and advancement opportunities throughout their careers to prepare for new challenges and a changing world. They need to be viewed and respected as persons with varied strengths and weaknesses. And they deserve

to be given opportunities commensurate with their talents and interest (Shavlik & Touchton, 1988, p. 106).

But women also have unique management needs. An attempt by women to find ways of improving their leadership ability and to tailor their administrative training led to the development of several women-only programs such as Higher Education Resource Services (HERS) regional programs, American Council on Education (ACE) Fellows Program, ACE National Identification Program for the Advancement of Women in Higher Education (ACE/NIP), the Leaders for the Eighties Program of the American Association of Women in Community and Junior Colleges, and Project FLAME (Female Leaders for Administration and Management in Education).

Speizer (1984) described the Administrative Skills Program sponsored by Higher Education Resource Services (HERS) New England at Wellesley College to help women advance in higher education administration. According to Speizer, the Administrative Skills Program has three goals: to provide participants with technical skills training that can upgrade job performance, promote advancement, or both; to establish a professional support network among women in the same geographic area; and to assist in the development of professional development tools for advancement. The program covers six skills areas: fiscal management, organizational behavior, management skills,

information management, government and university relations, and professional development. Speizer's evaluation of the program indicated that the Administrative Skills Program strategy appeared to assist the promotion of the participants in a remarkably short time. The program was recommended as a technique for hastening the advancement of women.

Project F.L.A.M.E. (Female Leaders in Administration and Management Education) was funded by the United States Office of Education under the Women's Education Equity Act Program. The intent was to increase professional opportunities for women aspiring to be educational administrators. Boling (1982) evaluated one such project and found that, prior to entering the program, the position held most frequently by her participants was that of teaching in a public school setting. After the women participated in the program, the most frequently reported position was that of administration, which more than tripled what it was prior to Project F.L.A.M.E.

Chamberlain (1988) described the establishment of rosters, networks, and training programs to enable the increase in the number of women in administration. The roster was described as the first step in providing information about the talent pool available for faculty and administrative positions. The second measure to foster the employment of women in higher education is Project HERS (Higher Education Resource Services). According

to Chamberlain, the project was set up as a central registry or talent bank to which requests to nominate women in academic positions could be referred. Project HERS activities also included offering seminars and courses for training in administrative skills to strengthen the qualifications of women candidates. Chamberlain also described a number of internship programs established to train women for careers in higher education administration. The best known of these programs was funded by the Carnegie Corporation and was based at Cedar Crest College. The program offered a 10-month internship experience in college management.

Mentors have received a great deal of attention in the literature. Women are using mentoring and networking to move up the administrative ladder. Green (1988) noted that the opportunity for learning, feedback from the mentor, visibility in the organization, and access to the mentor's network are all important benefits from the mentor-protégé relationship. In the study of Texas community college women administrators, Durnovo (1990) stated that 57% of her respondents indicated that they had a mentor in their career in higher education administration. Women who have had mentors were in significantly higher administrative positions than women who had not experienced mentoring, leading to the assumption that a mentor was an important factor in the career development and advancement of respondents.

She noted that the mentor was helpful with career advancement, providing opportunity and visibility, sharing information, providing encouragement and confidence, being a role model, encouraging the protégé to continue her education, and teaching how to be politically astute. Respondents, including those who had not had a mentor, repeatedly recommended a mentor relationship.

Other characteristics needed by women to be successful administrators as identified by Durnovo (1990) are having the right credentials; being able to get along with people; having competence, leadership skills, tenacity, stamina, and creativity; being political; and having conscientiousness, a "tough skin," practicality, the ability to actualize ideas, a sense of fairness, and patience. The women advised women seeking careers in administration to: (a) become focused on being committed; (b) acquire a terminal degree; (c) network; (d) always be a professional; and (e) never give up. Other specific suggestions included: (a) dedicate yourself to excellence; (b) do not be too pushy or aggressive; (c) be a mentor for other women; (d) become politically aware; and (e) build solid underpinnings.

Wilson (1990) noted that there is evidence that women who enter higher education in the 1990s will be less prepared than their male colleagues. According to Wilson, research indicates that the education of boys and girls is

presently significantly different. The National Assessment of Educational Progress conducted three measures of reading achievement between 1970 and 1984. They found that, although girls outperform boys at the ages of 9, 14, and 17, the differences in achievement levels between the sexes diminish over time. Girls stabilize in performance, and boys continue to gain in achievement. By 21 to 25 years of age, males are equal to females in literary and reading abilities. Wilson cited other statistics, including the fact that 64 % of the more than 6,000 National Merit Scholarships awarded each year go to boys. Also, males outperform females on all subsections of the American College Test and Scholastic Aptitude Test, and later, on the Graduate Record Exam. She concluded that, when girls enter school, they are scoring ahead of boys, but 12 years later, when they graduate from high school, they are scoring behind boys. Wilson, like others, suggested that moving into higher education requires obtaining advanced graduate degrees, shouldering sometimes heavy burdens with education bills, and often relocating one's residence and family. Presently, women in higher education who are in administration are likely to be in staff-level positions that deal with women's studies and projects, remedial teaching, advising, affirmative action, or similar support programs. She concluded that women who eventually become administrators in the 1990s are likely to have demonstrated the following characteristics: serious scholarship;

interest in the whole university community; high energy levels; associations with other active, energetic people; effective time management; and readiness to take on challenges and to assume reasonable risks.

Women in administration must seek out and provide opportunities for other women. They need to share their survival strategies in coping with the pressures they face. Among the most important strategies are to develop assertiveness in confrontations and to develop skills in fiscal control and planning (Wilson, 1990).

Research on women who have attained high-ranking positions indicates that these women developed qualities such as self-reliance, ambition, and assertiveness. Results of Durnovo's (1990) study revealed that women administrators in Texas community colleges function at every level except chancellor. Fifty percent were directors, 30% were above director level, and 20% were below director level. The majority function in mid-management positions. The highest degree earned by most of her respondents (53.8%) is a master's. Over half of her respondents, 53.4%, were the first to hold at least one of their positions. This suggests that women are gaining access to new positions and to the creation of new departments. Ninety-seven of these positions were created in community colleges and 13, outside of higher education. The most frequent new position was that of director. Durnovo's

study was designed to determine whether women administrators clustered in particular tracks and/or if they moved from those tracks. She defined tracks as student services, academic affairs (instruction), administration, continuing education, and business/accounting. She found that the student services track held the largest number of respondents, 47%. Of these, only 8% had advanced into other areas, suggesting that women tended to remain in one administrative track.

McAda(1980) studied 97 women vocational administrators in 30 different states. She found that 92.8% of them hold graduate degrees, with 9.2% of that total representing doctoral degrees. Vocational education administrative experience of five years or less was reflected by 60.8% of the women; only 3.1% showed vocational education experience of 16 or more years. Important management skills perceived by the women administrators included organizing tasks effectively, communicating adequately, making decisions and solving problems, using human and educational resources effectively, and evaluating programs and personnel effectively. The most valuable human relations techniques indicated by the women administrators included believing in the worth of the individual, listening to others, accepting criticism objectively, and maintaining objectivity in dealings with the staff and the community. The most important group skills she found included

managing conflict within groups, exercising leadership through influence as opposed to dominance, articulating clearly one's position on issues, and hearing the intent as well as the content of group members' statements. Finally, McAda also found that women vocational administrators highly rated such personal characteristics as having integrity, accepting responsibility for decisions, being flexible, demonstrating initiative, and exhibiting self-discipline.

McCorkle (1974) concluded in her study of women administrators in higher education that having academic credentials and experience in a professional field is the most suitable route through professional specialization to administration. In addition, the top-level women administrators advised that women interested in going into higher education administration should study certain subjects, such as theory of administration, higher education, negotiation, law, research techniques, and strategies for working with people. Women are therefore using education, mentoring programs, internships, and leadership skills development programs to make inroads into educational administration.

Literature Summary

There was scant information on women administrators in vocational education at community colleges. Neither was there information on the competencies of women administrators in vocational education at community

colleges. In an effort to highlight the competencies possessed by women administrators in vocational education at Texas community colleges, the review of the literature was broadened to cover the following areas: the role of community colleges in workforce training; the roles, tasks, and functions of vocational administrators at community colleges; competency studies; and women in educational administration.

Community colleges' roles have shifted from serving mainly as junior colleges to serving as the nation's main workforce trainers. To fulfill this part of their mission, community college administrators must perform administrative and leadership responsibilities such as planning, organizing, operating educational activities, programming, developing, managing, and evaluating.

The competency studies followed the format developed since 1956 by the Southern States Cooperative, in which lists of critical tasks needed by educational administrators were identified and developed. The competency studies reviewed mainly dealt with identification and verification of competencies needed by vocational administrators at the local or state level. Norton et al. (1977) and Norton and Harrington's (1987) study were the most known national study on vocational administrative competencies.

Lastly, on women in educational administration, the literature still documents the under representation of women in administration. Women are under represented due to both internal and external barriers. Women have recognized these barriers and are now using ingenious ways to overcome these obstacles. Most importantly, women are recognizing that women's style of management is not inferior to men's, only different, and they are now demanding the inclusion of feminine leadership styles as part of leadership literature.

CHAPTER III

RESEARCH METHODS AND PROCEDURES

Introduction

This study is designed to assess the level of competencies possessed by women administrators in vocational education in community colleges in the State of Texas. This investigation involved asking women who are holding administrative positions in vocational/technical education about their demographic information and their perceived level of competencies in their respective positions. The survey research method employing mail questionnaires was used for this assessment.

According to Plumb and Spyridakis (1992), survey research may be the best way to determine attitudes and beliefs. Survey research uses questionnaire to query people about what they know, what they do, what they like, or what they believe. Alreck and Settle (1995) observed that survey research may be an easier, quicker, less expensive, and more accurate way to get required information. For these reasons, survey research is the most accurate way to assess the level of competencies possessed by women administrators in vocational education at Texas community colleges.

This chapter presents the methods and procedures of the study, including instrumentation, procedure for data collection, population and sample, and the procedures for analysis of the data. The methods used to analyze the data include descriptive statistics, principal component analysis, and multiple regression analysis. Principal component analysis was initially used to reduce the number of dependent variables from 11 to 2. Then, two regression models were tested using the two component scores as the dependent variables (criterion variables) and four independent variables. Details of the variables are discussed in this chapter.

Instrumentation

A nationwide instrument, developed in 1977 by Norton et al. and later modified in 1987 to identify competencies needed by vocational administrators at both secondary and postsecondary institutions, provided the basis for the instrument used for this study. This instrument, the Administrator Task Inventory, came about as a result of the realization that the effective training of local administrators had been hampered by the limited knowledge of the competencies needed by local administrators and by the limited availability of competency-based materials specifically designed for the preparation of vocational administrators (Norton, 1983). Norton's study had two major objectives: (a) to conduct research to identify and nationally verify

the competencies considered important to local administrators of vocational education and (b) to develop and field test prototypic competency-based instructional packages for vocational administrators. By identifying these vocational administrative competencies, the ultimate purpose is to provide the selected supervisors and administrators of these programs with the opportunity to adequately prepare for their responsibilities on both a preservice and inservice education basis.

Permission was obtained from Dr. Robert Norton to use the Administrator Task Inventory (see Appendix D). The instrument was adapted to assess the extent to which women administrators in vocational education at Texas community colleges perceive themselves as possessing these nationally identified vocational administrative competencies. Other researchers have used the instrument to develop modules which are a series of competency-based administrator education learning packages, focusing on specific professional competencies needed by vocational education administrators.

For the purpose of this study, input was sought from four administrators familiar with vocational administration and with survey research on the use of Vocational Administrator Task Inventory. The four administrators concluded that the 201 competencies makes the instrument too long and may pose response-rate problems. The statistician consulted suggested narrowing the

scope of the task. The instrument was therefore modified by dropping the Economic Development category. The choice to drop this task area was due to the lower level administrative positions in which women administrators find themselves. Most of the women administrators are mainly directors, and as such may not have the level of authority in their job capacity to answer economic development questions effectively. The issue of authority, roles, and responsibilities by vocational administrators in community and 4-year colleges was discussed in Chapter 2, Functions, Tasks, and Roles of Vocational Administrators, under the study by Valentine et al. (1979). The selection of the remaining competencies was made by removing what amount to duplicate questions of the task statements. A total of 118 of the competencies was selected from the 201 task statements.

For this study, the instrument was divided into two sections: Section 1 deals with demographic information, with a 10-item demographic data sheet; Section 2 is made up of 118 items dealing with professional and skills information. The professional and skills information section of the instrument was divided into 11 major function areas, namely: (a) program planning, development, evaluation and improvement; (b) curriculum and instructional Management; (c) student services; (d) personnel management; (e) business and financial Management; (f) facilities and equipment's management; (g)

professional and staff development; (h) resource development (financial and others); (i) marketing vocational-technical education; (j) public relations; and (k) program articulation. Under each of these duty areas, the competencies required to perform them were listed.

Validation and Reliability of the Instrument

Instrument validation. The Administrator Task Inventory, which was taken from Norton and Harrington's (1987) Administrator Competency Study was developed and validated through the following process. The survey instrument was developed at a 3-day Developing a Curriculum (DACUM) workshop that was attended by 11 expert secondary and postsecondary administrators from six states (Norton & Harrington, 1987). According to Tesolowski and Roth (1988), DACUM was originally used by the Experimental Projects Branch, Canada Department of Regional Economic Expansion and the General Learning Corporation of New York. They stated that the DACUM process is based on three assumptions: (a) expert workers can define and describe their job more accurately than anyone else; (b) any job can be effectively described in terms of the tasks that successful workers in that occupation perform; and (c) all tasks, in order to be performed correctly, demand certain knowledge and attitudes from workers. The conclusion is that the DACUM process has credibility and is recognized as a procedure that can

be used to identify worker tasks or competencies in a manner similar to occupational analyses.

The DACUM committee identified 210 tasks that were eventually clustered into 12 duty areas, namely: (a) program planning and development, evaluation and improvement; (b) curriculum and instructional management; (c) student services; (d) personnel management; (e) business and financial management; (f) facilities and equipment management; (g) professional and staff development; (h) resource development (financial and others); (i) marketing vocational-technical education; (j) public relations; (k) economic development; and (l) program articulation. The questionnaire was submitted to a nationally stratified representative sample of 188 practicing administrators of secondary and postsecondary vocational education programs. The administrators were asked to indicate on a 6-point Likert scale ranging from 0, representing not important, to 5, representing extremely important, how important the performance of each of the tasks is in their job as administrators and how difficult most administrators find it to learn to perform the tasks correctly. Of the 188 administrators, 128 returned usable instruments, for a response rate of 68%. Of the 210 task statements, 201 tasks were validated and verified as important to their job as vocational administrators (Norton & Harrington, 1987).

Reliability. Although no reliability index was reported for the original instrument, Cronbach's alpha internal consistency estimate was calculated for this instrument. Using SPSS for MS Windows Release 6.1, the reliability coefficient has an alpha of .98. Fink and Kosecoff (1985) stated that a "valid survey is always a reliable one, but a reliable one is not always valid." (p. 48). It is therefore not surprising that this nationally validated instrument also has a very high internal reliability coefficient.

Research Procedure

Selection of Administrators for the Study

Several sources were utilized to gather the list of names of women administrators in vocational education at the community colleges. First a request was made from the Department of Texas Higher Education Coordinating Board, Division of Community Colleges and Technical Instruction at Austin, Texas, for the current Texas Association of Community Colleges Directory of Presidents/Chancellors and for the Texas Association of Community and Technical Education membership directory. Using the addresses from the two directories, a letter was written to each of the 50 community colleges' deans for a list of women administrators in their vocational/technical programs (see Appendix A). Membership directories from Texas Association of Community and Technical Education (TACTE) and from

Texas Association of Postsecondary Occupational Education Administrators (TAPSOEA) 1992-1994 were obtained also. From these sources, 208 women vocational/technical administrators were identified.

Description of Population and Sample

Population. The population for this study included women administrators in vocational education at Texas community colleges. From the population list compiled from the above-named sources, the sample was drawn. The total number of names generated from the above list was 208 women administrators. This was the population from which the sample was selected.

Selection of sample. A random sample of 175 out of the 208 women administrators in vocational education at 50 public community colleges in Texas was selected for the study. Random sampling was used to select respondents from the population to give every respondent equal probability of being selected. Alreck and Settle (1995) consider random sample as the best because it is the most representative of the entire population. According to Borg and Gall (1983), various techniques can be used to derive a simple random sample. For the purpose of this study, the names of the identified administrators were down loaded into the computer. Statistical Package for

Social Sciences (SPSS) was used to randomly select 175 out of 208 women administrators.

Collection of Data

The data were obtained by mail questionnaire. Before sending the questionnaire to the participants, a letter was mailed to them stating that they would soon receive the survey instrument. Two weeks later, the questionnaire and accompanying cover letter was sent to 175 vocational administrators. A stamped, pre-addressed envelope was enclosed for the return of the questionnaires. This initial mailing resulted in 97 responses. A reminder was sent to the participants who did not return the questionnaire after three weeks. A follow-up phone call to about 10% of the administrators who had not responded was the final attempt to increase the response rate. Copies of the letters are included in Appendix C. The follow-up efforts yielded only 27 additional responses. By the cutoff date, of the 175 questionnaires mailed to the women administrators, 124 had returned usable questionnaires, for a response rate of approximately 71% (70.9%).

Data Analysis

Descriptive statistics were used to summarize the data. Frequency and percentages tabulation response for each item was presented. The data were analyzed using the level of competencies possessed questions to determine: (a)

the number of responses to each task statement; (b) the mean response to each task statement; and (c) the percentage responding to each level of the 5-point Likert scale. Using the mean responses for the 11 function areas, the competency areas was rank ordered from highest to lowest on the competency possessed by the administrators.

Besides the descriptive statistics, principal component analysis was used to arrive at a smaller number of dependent variables, after which two multiple regression analyses were used to test the two hypotheses at the .05 level of significance. Data screening was performed, and regression assumptions were checked. Details of data analysis are described in Chapter 4. Although the data are ordinal in nature, use for inferential statistics is acceptable. McNeil, Newman, and Kelly (1996) argued that the "purpose of research is to find functional relationships, and therefore the measurement scale of the data is irrelevant" (p. 35).

Summary

This chapter contains details of the research method used in this study. Details of the instrument validation process, its reliability, description of the population and sample, data collection process, and the procedure to be used for data analysis were all described in this chapter. Chapter 4 describes the analysis of the results.

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

The data were analyzed to determine the perceived level of competencies possessed by the women administrators in vocational education at community colleges in Texas involved in this study. The 124 usable responses were analyzed to achieve the stated purposes of this study and to test the two hypotheses posed in the first chapter. The analysis is divided into two major sections, demographic data analysis and competencies and skills information analysis. The demographic part consists of ten variables, while the competencies and skills information section contains 118 variables.

Descriptive Analysis of Demographic Data

Research question 1: What is the demographic profile of women administrators in vocational education in Texas community colleges?

This first question dealt with the demographic profile of the administrators. Tables 1 through 9 reveal the characteristics of the respondents. The demographic variables examined include marital status,

ethnicity, age, number of children, level of education, type of educational training received, adequacy of preservice training received, number of years of vocational administrative experience, number of years of teaching vocational subjects, and level of professional organization participation.

Marital Status

Table 1 shows that 69.4% of the women administrators are married, whereas only 8.1% are single. About 20% (20.2%) are divorced, with 2% widowed. The high marital rate seems to indicate that many of the administrators are combining marriage with an administrative career. In a study by McAda (1980) on women administrators in vocational education in the United States, 70.1% of the women were married whereas 14.5% were single and 7.2% and 8.2% were divorced and widowed, respectively. The higher percentage of divorce rate in this study seems consistent with current social trends.

Age

The following were age ranges on the demographic questionnaire: under 31 years; 31 to 35 years; 36 to 40 years; 41 to 45 years; 46 to 50 years; and 51 years and over. The distribution of age by the responding women administrators in vocational education is shown in the Table 2 by frequencies and percentages. Only 5.6% of the respondents are under 35 years of age.

Table 1

Marital Status of Women Administrators in Vocational Education at
Community Colleges in Texas (N=124)

<u>Marital Status</u>	<u>Frequency</u>	<u>Percentage</u>
Married	86	69.4
Single	108.1	
Divorced	25	20.2
Widowed	3	2.4

About a third (35.5%) of the responding women administrators are 51 years and over. A total of 70.5% of the women administrators fall in the age range of 46 years and above.

Ethnicity

Table 3 shows that a majority of the women administrators (86.3%) in vocational education at community colleges in Texas are Anglo-Americans. African-American and Hispanic-American are 5.6% and 7.3%, respectively. Durnovo (1988) in "Emerging Characteristics of Women Administrators in Texas Community/Junior Colleges" found that 84.4% of her respondents were Anglo-Americans, 8.5% were black, and 7.1% were Hispanic. But the 1980 study on "Perceived Characteristics and Administrative Skills of Women

Administrators in Vocational Education" by McAda (1980) showed that 90.7% of the women administrators in vocational education in her study were Anglo-Americans; there were no Hispanic Americans in her study, and only 2.1% were black.

Table 2

Age Distribution of Women Administrators in Vocational Education at Community Colleges in Texas (N= 124)

Age	Frequency	Percentage
Under 31	1	0.8
31-35	6	4.8
36-40	16	12.9
41-45	26	21.0
46-50	31	25.0
51 and over	44	35.5

Number of Children

The distribution of the women administrators based on the number of children is as shown in Table 4. About 20% (20.2%) of the respondents have no children. Almost the same percentage, 24.2%, as those with no children

have three to four children. None indicated five or more children, whereas about 56% have one to two children.

Table 3

Ethnicity of Women Administrators in Vocational Education at Community Colleges in Texas

<u>Ethnicity (N=124)</u>	<u>Frequency</u>	<u>Percentage</u>
Anglo-American	107	86.3
African-American	7	5.6
Hispanic-American	9	7.3
Other	1	0.8

Highest Level of Education

Most colleges require an approved masters degree as the personal qualification for vocational administrators in community/4-year vocational education. In this study, Table 5 shows that the majority of the women administrators in vocational education at the community colleges (55.6%) have masters degrees, whereas 32% have doctoral degrees. Only two (1.6%) and 12 (9.7%) of the respondents have associate and bachelor's degrees, respectively. A few indicated some hours toward their doctoral degree, but

those were not included in the tabulation. Durnovo (1988) had a similar finding. She found that 53.8% of her respondents had a master's degree, while 21.7% had doctoral degrees. The women in this study seem to use education to gain entrance into educational administration.

Table 4

Number of Children of Women Administrators in Vocational Education at Community Colleges in Texas

<u>Number of Children (N=124)</u>	<u>Frequency</u>	<u>Percentage</u>
None	25	20.2
1-2	69	55.6
3-4	30	24.2
5 or more	0	0.0

Type of Education or Training Received

Table 6 shows five types of educational training represented in the questionnaire: section 1, general education administrator training; section 2, vocational education administrator courses; section 3, use of competency-based administrator modules; section 4, attended workshops; section 5, participated in supervised internship; and section 6, no training at all. One of the outcomes

Table 5

Highest Level of Education of Women Administrators in Vocational
Education at Community Colleges in Texas (N= 124)

Highest Level of Education	Frequency	Percentage
Associates	2	1.6
Bachelor's	12	9.7
Master's	69	55.6
Specialist	2	1.6
Doctorate	9	31.5

of the current educational reform movement is a demand for educational administration internship programs. For those who did not have internship experience, the next best means of competency upgrade is through the use of vocational administrator competency modules. Several of these have been developed by the Center for Research in Vocational Education. Unfortunately, according to this research, only 5% used the competency-based administrator modules. About half (52.9%) of the women administrators in vocational education at community colleges in Texas took general education administrator training; only 26.9% took vocational education administrator courses; and

Table 6

Type of Educational Training Received by the Women Administrators inVocational Education at Community Colleges in Texas (N = 119)

Responses	Frequency	Percentage
Yes	63	52.9
No	56	47.1
No response	5	4.0

Vocational Educ. Admin. Courses (N=119)

Yes	32	26.9
No	87	73
No response	5	4.0

Used competency-based-administrator modules (N=119)

Yes	6	5.0
No	113	95.0
No response	5	4.0

Attended Workshops (N=119)

Yes	72	60.5
No	47	39.5
No response	5	4.0

Table 6 (cont.)

Responses	Frequency	Percentage
<u>Participated in Supervised-Internship (N=119)</u>		
Yes	18	15.1
No	101	84.9
No response	5	4.0

60.5 % trained by attending workshops. Fifteen percent (15.1%) trained by doing supervised internships. Although the question was not asked concerning the type of education or training received, eight respondents checked that they received no training. That question is addressed in research question 3 section on the adequacy of preserve training initially received. The percentage totaled more than 100% because some marked more than one type of educational training.

Number of Years of Vocational Administrative Experience

The administrators were asked to indicate the number of years they have been vocational administrators. Consistent with the history of discrimination of women in obtaining administrative positions, Table 7 shows that 34.2% have been vocational administrators for five years or less; 30.8% have been administrators for between six to ten years. In other words, 65% of

the women administrators have had ten or less years of administrative experience. Only 18.3% have 16 or more years of vocational administrative experience.

Table 7

Number of Years of Vocational Administrative Experience

<u>Admin. Experience (N=120)</u>	<u>Frequency</u>	<u>Percentage</u>
0-5	41	34.2
6-10	37	30.8
11-15	20	16.7
16 or more	22	18.3

Number of Years Teaching Vocational Subjects

In addition to the number of years of vocational administrative experience, the respondents were asked the number of years of teaching vocational subjects. The data summarized in Table 8 indicate that 68.9% have taught vocational subjects ten years or less, whereas 30.1% have taught for ten or more years.

Table 8

Number of Years Teaching Vocational Subjects (N= 119)

Years	Frequency	Percentage
0-5	58	48.7
6-10	24	20.2
11-15	15	12.6
16 or more	22	18.5
No response	5	4.0

Professional Organization Involvement

Active participation by any administrator in professional organization activities in their field is likely to be associated with an increased level of competencies. Not only is the knowledge of the adequacy of training received by the women administrators important, it is equally valuable to discover the level of administrative professional organization involvement to keep current in their field. Table 9 showed that only 40.5% of the administrators are involved in some kind of professional activities on a regular basis, whereas 27.3% and 26.4% are involved on quarterly and yearly basis, respectively.

Table 9

Results of Professional Organization Activities Involvement (N=121)

Level of Involvement	Frequency	Percentage
None	7	5.8
Monthly	33	27.3
Quarterly	32	26.4
Yearly	49	40.5
No response	3	2.4

Descriptive Analysis of Competencies and Skills Information

Research question 2: The second research question is to what extent do women administrators in vocational education at community colleges in Texas possess the necessary vocational administrative competencies required to perform their duties?

Tables 10 to 20 show the perceived level of competencies possessed by the responding administrators in 11 administrative duty areas, namely: (a) program planning, development, evaluation and improvement; (b) curriculum and instructional management; (c) student services; (d) personnel management; (e) business and financial management; (f) facilities and

equipments management; (g) professional and staff development; (h) resource development; (i) marketing vocational-technical education; (j) public relations; and (k) program articulation. A close comparison of the descriptive statistics (means, median, standard deviation) of these 11 administrative categories indicate areas in which women administrators perceive themselves as either competent or not competent.

Program planning, development, evaluation and improvement, with 15 tasks that make up this category, received a mean score of 4.1, with a median of 4.0 on a 1 to 5 Likert scale, with 1 representing very low competence and 5 representing very high competence. With an arbitrary cut-off point of 4 as competent, Table 10 indicates that only 12.5% scored 3 or less; 61.7% considered themselves competent in this duty category, while 25.8% described themselves as very highly competent.

Curriculum and instructional management includes 14 tasks. With both the mean and median the same, 4.0. Table 11 shows that 20.2 % indicated a low competency score of 3 or less, whereas 79.8% rated themselves as high or very high competent level.

Table 10

Results of Perceived Competency Level Possessed by Women Administrators in
Program Planning, Development, Evaluation and Improvement Category

Level of Competence	Frequency	Percentage
Low	2	1.7
Minimum	13	10.8
High	74	61.7
Very high	31	25.8
No response	4	3.2
Total	124	100

*Note. Mean, 4.1; median, 4.0 ; std dev, .65

Student Services

Student services has 9 tasks in the questionnaire. The competency scores of the respondents ranged from 1 to 5 on the Likert scale, with a mean and median of 3.8 and 4.0, respectively. Of the 120 administrators who responded to this section, Table 12 shows 3 respondents or 2.5% marked 1 for a very low competency level, while 29.2% marked 3 or less. Seventy-one

Table 11

Results of Perceived Competency Level Possessed by Women Administrators
in Curriculum and Instructional Management Category

<u>Level of Competence</u>	<u>Frequency</u>	<u>Percentage</u>
Low	4	3.4
Minimum	20	16.8
High	67	56.3
Very high	28	23.5
No response	5	4.0

*Note. Mean 4.0; median, 4.0; std. dev, .74

percent (70.8%) reported themselves as being competent at the 4 or 5 (high to very high) competency level.

Personnel Management

The personnel management category includes 15 tasks. Its mean and median are 4.1 and 4.0, respectively, with a standard deviation of .85. Table 13 indicates that 79.3% of the administrators ranked themselves as being high to very highly competent in this section.

Table 12

Results of Perceived Competency Level Possessed by Women Administrators in Student Services Category

<u>Level of Competence</u>	<u>Frequency</u>	<u>Percentage</u>
Very low	3	2.5
Low	7	5.8
Minimum	25	20.8
High	61	50.8
Very high	24	20.0
No response	4	3.2

*Note. Mean, 3.8; median, 4.0; std. dev, .91

Business and Financial Management

The business and financial management category includes 12 tasks. As shown in Table 14, its mean is 3.6. About 40% (40.3%) rated themselves at 3 or less on the competency scale, while the remaining rated themselves as having high competence.

Table 13

Results of Perceived Competency Level Possessed by Women Administrators in Personnel Management Category

Level of Competence	Frequency	Percentage
Very low	1	0.8
Low	4	3.3
Minimum	20	16.5
High	54	44.6
Very High	42	34.7
No response	3	2.4

Note. Mean, 4.1; median, 4.0; std. dev, .85

Facilities and Equipment Management

Facilities and equipment management has the lowest mean, 3.3, and a median of 3.0. There are seven tasks in the category. Table 15 shows that only 44.1% consider themselves competent for this administrative function.

Table 14

Results of Perceived Competency Level Possessed by Women Administrators in Business and Financial Management Category

Level of Competence	Frequency	Percentage
Very low	5	4.2
Low	10	8.4
Minimum	33	27.7
High	50	42.0
Very high	21	17.6
No response	5	4.0

*Note. Mean, 3.6; median, 4.0; std dev, 1.0

Professional and Staff Development

Professional and staff development, with eight tasks in its section has a mean of 4.3. Table 16 shows that 14.3% indicated a low competency rating, whereas 85.7% of the administrators consider themselves as competent.

Table 15

Results of Perceived Competency Level Possessed by Women Administrators in Facilities and Equipment Management Category

<u>Level of Competence</u>	<u>Frequency</u>	<u>Percentage</u>
Very low	8	6.8
Low	11	9.3
Minimum	47	39.8
High	42	35.6
Very high	10	8.5
No response	6	4.8

*Note. Mean, 3.3; median, 3.0; std. dev, .99

Resource Development

Resource development is another duty area, with a low mean of 3.7. The section contains 11 tasks statements. Table 17 shows that 38.5% of the respondents rated themselves at the level of 3 or lower, with 2.6% indicating a very low level of competence on this section.

Table 16

Results of Perceived Competency Level Possessed by Women Administrators in Professional and Staff Development Category

Level of Competence	Frequency	Percentage
Low	2	1.7
Minimum	15	12.6
High	53	44.5
Very high	49	41.2
No response	5	4.0

*Note. Mean, 4.3; median, 4.0; std. dev, .74

Marketing and Public Relations

Marketing vocational education and public relations have similar competency ratings by the administrators. Marketing has seven task statements, while Public relations has 13 competency statements. Table 18 shows that the marketing category has a mean of 4.1 and a median of 4.0, while Table 19 shows public relations with a mean of 4.1 and a median of 4.0. Also, 74.6% and 78.8%, respectively, rated themselves high to very high on possession of the competencies in these two areas.

Table 17

Results of Perceived Competency Level Possessed by Women Administrators in
Resource Development Category

Level of Competence	Frequency	Percentage
Very low	3	2.6
Low	17	14.5
Minimum	25	21.4
High	44	37.6
Very high	28	23.9
No response	7	5.6

*Note. Mean, 3.7; median, 4.0; std. dev, 1.1

Program Articulation

Finally, program articulation is another area with a low level of competency ratings by the women administrators. This section has seven competency statements. Table 20 shows a mean of 3.96, with 26.8% rating their competency skill level on this function area as very low-low- to- medium competency (3 or less).

Table 18

Results of Perceived Competency Level Possessed by Women Administrators in Marketing Vocational Education Category

Level of Competence	Frequency	Percentage
Very low	1	0.8
Low	3	2.5
Minimum	26	22.0
High	46	39.0
Very high	42	35.6
No response	6	4.8

*Note. Mean, 4.1; median, 4.0; std dev .87

Research question 3: The third research question is How adequate is the preservice training received by the women administrators in vocational education in Texas community colleges?

This question was answered by asking the administrators to rate the adequacy of the initial training they received as vocational administrators. On a Likert scale of 1 to 5 with, 1 being very adequate, 2 adequate, 3 inadequate,

4 very inadequate, and 5 as no training, Table 21 shows that about a quarter of the administrators (25.2%) indicated they received no vocational administrative training. Another 20.8% rated their initial training as either inadequate or very inadequate. Only approximately half (53.9%) of the respondents classified their preservice training as adequate to very adequate.

Table 19

Results of Perceived Competency Level Possessed by Women Administrators in

Public Relations Category

<u>Level of Competency</u>	<u>Frequency</u>	<u>Percentage</u>
Low	2	1.7
Minimum	23	19.5
High	51	43.2
Very high	42	35.6
No response	6	4.8

*Note. Mean, 4.1; median, 4.0; std. dev .78

Table 20

Results of Perceived Competency Level Possessed by Women Administrators in
Program Articulation Category

Level of Competence	Frequency	Percentage
Very low	3	2.7
Low	5	4.5
Minimum	22	19.6
High	45	40.2
Very high	37	33.0
No response	12	9.7

*Note. Mean, 3.96; median, 4.0; std. dev, .98

Research Question 4: The final research question addressed is In which task and duty areas do women administrators in vocational education at community colleges in Texas need the most inservice training?

This research question necessitated the comparison of the means of all 11 administrative function sections. Table 22 ranked the means in descending order, with the lowest mean score being facilities and equipments management (mean = 3.297) and the highest, professional and staff development, with a

mean of 4.252. See Table 22 for the rest of the means, with the standard error of the means.

Table 21

Adequacy of Preservice Training Received by Women Administrators

Response	Frequency	Percentage
Very adequate	12	10.4
Adequate	50	43.5
Inadequate	19	16.5
Very inadequate	5	4.3
Received no training	29	25.2
No response	9	7.3

Testing of Hypotheses

In addition to the above research questions, two multiple regression hypotheses were tested. The following are the two hypotheses:

Research Hypothesis 1: There is no statistically significant association between the management-skills variables (Factor 1) as the dependent variable and the four independent variables of level of education, number of years of

teaching vocational subject, number of years of vocational administrative experience, and level of vocational professional organization involvement.

Table 22

Results of Means on Level of Competency Possessed by Women

Administrators

<u>Task Category</u>	<u>N</u>	<u>Mean</u>	<u>Std. error of means</u>
Facilities & Equipment	118	3.30	.09
Business & Financial	119	3.61	.09
Resource Development	117	3.66	.10
Student Services	120	3.80	.08
Program Articulation	124	3.96	.09
Curriculum & Develop.	119	4.00	.07
Marketing Voc. Educ.	118	4.06	.08
Personnel Management	121	4.09	.08
Prog. Plan, Dev., Eval. Imprvmt.	120	4.12	.06
Public Relations	118	4.13	.07
Professional & Staff Dev.	119	4.25	.07

Research Hypothesis 2: There is no statistically significant association between the educational-skills variables (Factor 2) as the dependent variable and the four independent variables of level of education, number of years of teaching vocational subject, number of years of vocational administrative experience, and level of vocational professional organization involvement.

Before discussing the hypotheses testing, some background information is needed for an adequate understanding of the variables used in the data analysis.

Principal Component Analysis

The first step in the analysis of this data was the use of principal component analysis (PCA) as a means of reducing the number of dependent variables from 11 to 2. For this study, the skills and professional section of the questionnaire comprised of 118 items subdivided under 11 major vocational administrative functions areas, namely: (a) program planning, development, evaluation and improvement; (b) curriculum and instructional management; (c) student services; (d) personnel management; (e) business and financial management; (f) facilities and equipments management; (g) professional and staff development; (h) resource development; (i) marketing vocational-technical education; (j) public relations; and (k) program articulation.

The 11 function areas created the problem of having 11 dependent measures. Correlation analysis of these 11 dependent measures using Pearson correlation coefficient (r) shows them as highly correlated. The correlation coefficients ranged from .26 to .71. The means of the items across the 11 sections were used in the PCA rather than the 118 individual items.

According to Stevens (1992), principal component analysis and factor analysis are two empirical approaches that derive their factors by linear combinations of the original variables. Using Kaiser's criterion of retaining only those components whose eigenvalues are greater than one, the 11 criterion variables were reduced to two factors which are uncorrelated and which accounts for 64.2% of the variance by the set of factors. The retention of the two factors was supported by Cattell's scree plot, which also identified two factors.

Table 23 shows the results of the principal component analysis, with varimax rotation for ease of interpretation. The first derived component score loaded high on facilities and equipments management (.841), business and financial management (0.835), resource development (.801), professional and staff development (.715), personnel management (.644), public relations (.636), student services (.616), and marketing. The second derived component score loaded high on curriculum and instructional management (.852), program planning, development, evaluation and improvement (.800), and

Table 23

Results of Principal Component Analysis With Varimax RotationFactor Loadings

<u>Competency category</u>	<u>Factor 1</u>	<u>Factor 2</u>
Facilities & equipment	.841	.102
Business & financial	.835	.143
Resource development	.801	.269
Professional & staff dev.	.715	.442
Personnel management	.644	.516
Public relations	.636	.417
Student services	.616	.214
Marketing voc. educ.	.572	.429
Curriculum & develop.	.207	.852
Prog. plan, dev., eval. imprvmt.	.138	.800
Program articulation	.336	.683

program articulation (.683). The two underlying components were classified as management-skills variables (Factor 1) and educational-skills variables (Factor 2). These two scores were used as the dependent variables for the next step in the analysis.

Table 24

Extraction Analysis for Principal Component Analysis

Variable	Communality	Factor	Eigenvalue	Percent of Cumulative	
				Variance	percent
Program	.658	1	5.87	53.4	53.4
Curriculum	.769	2	1.18	10.8	64.2
Student Serv.	.425				
Personnel Mag.	.680				
Business & Info.	.718				
Facilities & Equip.	.718				
Prof. & Staff Dev.	.706				
Resource Dev.	.715				
Marketing	.511				
Public Relation	.578				
Prog. Articulation	.580				

The use of the principal component scores as the dependent variables rather than 11 dependent variables has the following advantages: (a) the two scores are orthogonal or independent of each other and hence will lead to lower

Type I error rate in the overall analysis (Stevens, 1992); and (b) ease of communicating two dependent variables rather than 11 dependent measures.

Multiple Regression Analysis

Regression Assumptions

To obtain the best linear unbiased predictors for this study, three main regression assumptions were tested: (a) the assumption of linearity, which means that the regression of Y on X is on a straight line; (b) the assumption that the errors are not correlated with the independent variable, X; and (c) the assumption that the variance of errors is the same at all levels of X-homoscedasticity (Pedhazur, 1982, p. 33).

A scatter plot of the factor scores (dependent variables) against each of the independent variables was examined to determine what type of functional relationship was appropriate between the variables. The scatter plot of the data indicated that a linear relationship is appropriate for this data. Trend analysis was used to test the linear, quadratic, and cubic functions of the independent variables against the two dependent measures. Only the linear functions were statistically significant. Also, an inspection of the standardized partial residual plots of the dependent variables with the independent variables showed the residuals to be randomly distributed about the horizontal line

originating from the mean of the residuals, indicating that there was no relationship between the residuals and the independent variables. The plots also indicated the variance of errors at all values of X to be the same, thereby meeting the homoscedasticity assumption.

To check for outliers, DFFITS, and DFBETAS of the independent variables were calculated. The cut-off values for each influence statistic was checked, but there were no outlier values. Finally, an examination of the histograms of the errors revealed that the errors are normally distributed; this allows inference to be drawn from the sample to the population.

A fourth important regression assumption that was tested is multicollinearity. According to Pedhazur (1982), correlations among the independent variables can lead to difficulties in the estimation of regression statistics. Pedhazur stated that high multicollinearity leads to imprecise estimation of regression coefficients. He defined multicollinearity as the absence of orthogonality in a set of independent variables. When two variables are orthogonal, they are independent of each other, and the correlation between them is zero. Brightman (1986) stated that, if the independent variables are slightly related, multiple regression can still be used, but where there is severe multicollinearity, the values of the sample intercept

and the slopes are not meaningful; that is, the sample results are not meaningful.

Three tests--variance inflation factor (VIF), tolerance, and variance proportions--were used to test for multicollinearity. The results show that VIF ranged from 1.0 to 1.1. This is well within the VIF limit of 10, indicating that multicollinearity is not a problem in this study (Hair, Anderson, Tatham, & Black, 1995). The tolerance score ranged from .91 to .99 which is also within the acceptable range of 0 to 1. The rule of thumb, according to Johnson, Latour, Routten, and Brocklebank (1994), is that a tolerance value less than 0.1 may indicate the presence of multicollinearity. The variance proportions associated with the highest condition index (13.1) were .44 for highest level of education, .02 for number of years of vocational administrative experience, .08 for number of years teaching vocational subjects, and .43 for level of professional vocational organization involvement. These figures indicate no multicollinearity problem. Examination of the variance proportions for the largest condition index is used to determine if there is a near dependency problem and, if there is, which of the independent variables are involved. A number close to one indicates a collinearity problem (Johnson et al., 1994).

Durbin-Watson d statistics was another regression diagnostic used to test for the autocorrelation of the error terms. The value of d was 1.83 and

1.73 for the two regression models and indicates that the error terms are independent. Johnson et al. (1994) stated that the value of d tends to be small (near 0) for positively correlated residuals, large (near 4) for negatively correlated residuals, and approximately two for purely random residuals.

Dependent and Independent Variables

Regression models. Two linear regression models were used to test the association between the derived principal component scores as the dependent variables and the four predictor variables. There is great deal of interest in researchers using demographic variables such as age, level of education, type of organization, and others to determine the association between variables. For this study, four demographic variables were chosen as the independent variables: highest level of education, number of years of vocational administrative experience, number of years teaching vocational subjects, and level of participation in vocational education professional organization activities. These four independent variables were chosen because of the assumed impact these variables might have on the competencies of the women vocational education administrators.

Power of Statistical Test

Post hoc power analysis-GPOWER (a general power analysis program) was used to determine the power for the two regression models (Erdfelder, E.,

Faul, F., & Buchner, A. , 1996). For Factor 1 (management-skills variables), with an effect size of .31, the power was calculated as .83. For Factor 2 (educational-skills variables), with an effect size of .43, the power was determined to be .97. The sample size required for this type of power was 107. Power was defined by Hinkle, Wiersma, and Jurs (1988) as the probability of rejecting the null hypothesis when it is false (1 - Beta). In this instance, power represents the probability of detecting if an increase in R^2 is statistically different from zero. With a sample size of 124 women administrators responding, this study therefore has adequate sample size to achieve a respectable level of power.

Statistical Analysis and Hypotheses Testing

Regression Analysis

The hypotheses were tested under two regression models, as explained above, at .05 level of significance. The question asked was what proportion of the management-skills and educational-skills (dependent variables) competencies can be predicted from the four predictor variables discussed earlier (i.e., does R^2 differ significantly from zero). Using backward stepwise regression analysis to test the two models, R^2 in the tables provides a quantitative measure of how much variance in the dependent variables was predicted from the predictors (independent variables).

Table 25 shows the regression on management-skills competencies (Factor 1) as the dependent variable with the four independent variables: (a) level of education; (b) number of years of administrative experience; (c) number of years of teaching vocational subjects; and (d) level of vocational professional organization. Table 26 shows the regression on educational-skills competencies (Factor 2) as the second dependent variable, with the same four independent variables stated above. For regression model 1, multiple regression analysis resulted in multiple R of .30, an R^2 of .09 ($F = 5.04$, $p < .008$) and effect size (f) = .31, indicating that for this model, two of the four independent variables--highest level of education and number of years teaching vocational subjects--accounted for 9.0% of the variance in the management-skills competencies possessed by the administrators with moderate effect size. The null hypothesis of $R^2 = 0$ was rejected at .008 level of significance. The beta coefficients for the two significant independent variables are - .18 for number of years of teaching vocational subjects, .17 for level of education, and a constant of -.23. Number of years of teaching vocational subjects has a negative beta coefficient.

The prediction equation for management skills competencies (Factor 1) becomes $-.23 + .17(\text{Highest}) + -.16(\text{Nuyrvs})$, where Highest is level of education, and Nuyrvs is number of years of teaching vocational subjects.

Table 25

Results of Backward Stepwise Regression Analysis and Residual Sum of Squares for Competencies Possessed by Women Administrators at Community Colleges in Texas Factor 1 (N = 107)

Source of variation	SS	d.f.	MS	F	Signif F
Regression	9.5	2	4.77	5.04	.008
Residual	98.5	104	.94		

*Note. Multiple R .30, R Square .09, Standard error .97

Similarly, using backward stepwise multiple regression analysis on educational-skill competencies (Factor 2) as the dependent variable and the four stated independent variables resulted in multiple R of .39, an R^2 of .16 ($F = 6.34$, $p < .0005$ and effect size (f) = .43), indicating that, for this model, three independent variables--level of education, number of years of vocational administrative experience, and number of years of teaching vocational subjects--accounted for 16% of the variance in the educational-skills competencies possessed by the administrators, with a high effect size of (f) = .42. The null hypothesis of $R^2 = 0$ was rejected at a .0005 level of significance. The beta coefficients for the three out of the four independent

variables left in the equation are .24 for level of education, .17 for number of years of vocational administrative experience, .16 for number of years of teaching vocational subjects, and a constant of -1.53. All three have positive beta coefficients.

The prediction equation for educational skills competencies (Factor 2) becomes $-1.53 + .24 (\text{Highest}) + .17 (\text{Nuyrva}) + .16 (\text{Nuyrvs})$, where Highest is level of education, Nuyrva is number of years of administrative experience and Nuyrvs is number of years of teaching vocational subjects. This finding is discussed further under the discussion on findings.

Table 26

Results of Backward Stepwise Regression Analysis and Residual Sum of Squares for Competencies Possessed by Women Administrators at Community Colleges in Texas Factor 2 (N= 107)

Source of variation	SS	d.f.	Mean square	F	Signif. F.
Regression	16.6	3	5.5	6.34	.0005
Residual	89.9	103	.87		

*Note. Multiple R .39, R Square .16, Standard error .93

Discussions on Findings

There has been great deal of debate in the literature on the quality of educational administrators preparation (see Jacobson & Conway, 1990). Findings of this study indicated that a fourth (25.2%) of the women administrators in vocational education at the community colleges in Texas received no vocational administrative training; 20.8% perceive their initial training as inadequate; and only 15.1% participated in a supervised internship. According to the study by Lovelace and LaBrecque(1992), the vocational administrators at Texas community colleges indicated a need for professional development in all 133 competency/task statements in their questionnaire, with the most pressing needs related to program planning, development, and evaluation. This is consistent with the finding of this study. Up to a quarter of the respondents indicated a low level of competence in program planning, development, and evaluation. A similar finding by Combrink (1983) identified program planning, development, and evaluation, school/employer/community relations, business and financial management, facilities and equipment management and instructional management as category areas that both secondary and postsecondary administrators in Arizona vocational education perceived to be their greatest need for training. Interestingly, of the 67 tasks perceived to be important by both the Arizona

and national vocational administrator group, none of the tasks was from student services category. Yet, in this study, 68.3% of the women administrators perceive themselves to be competent in student services category. It may be that women administrators perform more functions in the student services area. Other studies have found that women in administration function in areas with lower level authority, such as in student services (Pearson et al., 1989; Restine, 1993; Shakeshaft, 1987).

On the testing of research hypotheses for regression model 1, number of years of teaching vocational subjects has a negative beta coefficient of .18. This is surprising and difficult to explain. It seems that the longer the administrators have taught vocational subjects, the less they scored on the criterion variable of administrative type skills. It may be that the administrators who have taught vocational subjects the longest do not have enough administrative experience and as such do not perceive themselves to be quite as competent. Level of education and number of years of administrative experience both have positive beta coefficients, as indicated earlier.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains a summary of the study of the perceived administrative competencies possessed by women administrators in vocational education at community colleges in Texas. The chapter is divided into the following sections: summary of the study, summary of the findings, conclusions, and recommendations.

Summary of the Study

The problem of this study was the perceived administrative competencies of women administrators in vocational education at the community college level in Texas. The study has four main purposes: (a) to determine the perceived level of administrative competencies possessed by women administrators in vocational education at the community college level in Texas; (b) to determine the adequacy of the preservice training received by these administrators to perform their administrative functions; (c) to help women administrators in vocational education at Texas community colleges evaluate their respective attainment levels of administrative competencies; and

(d) to provide needs- assessment data to colleges and universities that have preservice and inservice educational programs for school administrators.

The population of this study was the women administrators in vocational education at Texas community colleges. A total of 208 women administrators in vocational education at Texas community colleges was identified from the list compiled, as described in Chapter 3. Of the identified 208 women administrators, 175 were randomly selected for the study. Of this number, 124 returned usable questionnaire for a response rate of approximately 71%.

From the data collected using a mail survey questionnaire, four research questions were answered, and the hypotheses were tested using Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to answer the four research questions, while multiple regression analysis was used to test the two research hypotheses. Before testing the regression models, regression diagnostics and assumptions were checked and met. Principal component analysis was used as a variable reduction measure to reduce the 11 sections of the administrative competencies to two. These two principal components scores described as management-skill variables (Factor 1) and educational-skill variables (Factor 2) were used as the two dependent variables and were regressed on the four independent variables of level of education,

number of years of administrative experience, number of years of teaching vocational subjects, and level of vocational professional organization. The research hypotheses were used to test if there is statistically significant association between the dependent variables Factor 1 and Factor 2 and the four independent variables at a .05 level of significance.

Summary of Findings on Research Questions

Research question 1: What is the demographic profile of women administrators in vocational education in Texas community colleges?

Summary

A majority of the women administrators (69.4%) in vocational education at the community colleges in Texas are married, while only 8% are single. About 20% are divorced. A total of 70.5% of the women administrators fall in the age range of 46 years and above. Only seven of the responding women administrators are under 35 years of age.

The data on the ethnicity of the women administrators in vocational education at community colleges in Texas found that over 85% of the women administrators (86.3 %) in vocational education at community colleges in Texas are Anglo American, with only 5.6% African-American and 7.3% Hispanic Americans.

More than half (56%) of the women administrators in vocational education at community colleges in Texas have one or two children; 20.2% have no children; none has five or more children.

The study found that 32% have doctoral degrees, while 55.6% of the women administrators in vocational education at community colleges in Texas have masters degrees.

Over half (52.9%) of the women administrators in vocational education at community colleges in Texas took general education administrator training; only 26.9% took vocational education administrator courses; 60.5 % trained by attending workshops; 5% used the competency-based administrator modules; and only 15.1% trained by doing supervised internship.

This study found that approximately half (54%) of the administrators classified the preservice training they received as adequate; 25.2% indicated they received no vocational administrator training at all, whereas 20.8% described their training as inadequate.

About a third (34.2 %) of the women administrators had been vocational administrators for five years or less; 65% had ten or less years of administrative experience; only 18.3% had 16 or more years of vocational administrative experience.

On number of years of teaching vocational subjects, 68.9% taught vocational subjects for ten or less years, whereas 30.1% taught vocational subjects for ten years or more.

Of the administrators, 27.3% were involved in some kind of professional activities on a regular basis, while 26.4% and 40.5% were involved on a quarterly and yearly basis, respectively.

Research question 2: To what extent do women administrators in vocational education in community colleges in Texas possess the necessary vocational administrative competencies required to perform their duties?

Summary

The findings indicate that the women administrators, on the average, possess the necessary competencies needed to perform their duties. On the other hand, the women need better preservice and inservice programs than they have acquired in certain duty categories. At least a fourth of the respondents in each competency category need better preservice and or inservice training. For instance, in the area of program planning, development, evaluation, and improvement duty category, 61.7% consider themselves competent in those tasks; 79.8% perceive themselves competent in the curriculum and instructional management category; 68.3%, in the student services category; 79.3%, in the personnel management category; only 59.7%,

in the business and financial management competency category. Facilities and equipment management has the lowest percentage (44.1%) of women administrators that perceived themselves competent in this category; 85.7% considered themselves competent in the professional and staff development category; 58.9% of the women perceive themselves as competent in the resource development category; 74.6% of the women administrators perceive themselves as competent in the marketing vocational education; 78.8% perceive themselves competent in the public relations category; and lastly, 73.5% rated themselves competent in the program articulation competency category.

Research question 3: How adequate is the preservice training received by the women administrators in vocational education in Texas community colleges?

Summary

One fourth (25.2%) of the women administrators in vocational education at the community colleges in Texas had received no vocational administrative training. Another 20.8% perceived their initial training as inadequate; and 26.9% took vocational education administrator courses. Only approximately half (53.9%) of the respondents classified their preservice training as adequate.

Research question 4: In which task and duty areas do women administrators in vocational education in Texas community colleges need the most inservice training?

Summary

The study revealed that, of the 11 performance categories studied, at least a quarter of the women administrators in vocational education at community colleges in Texas need inservice training in the following seven vocational administrative competency categories: facilities and equipment management (55.9%); resource development (41.1%); business and financial management (40.3%); program planning, development, evaluation, and improvement (38.3%); student services (31.7%); program articulation (26.5%); and marketing vocational education (25.4%).

Summary of Hypotheses Testing

The hypotheses testing was to determine if there was any association between the perceived competencies possessed by the women administrators in vocational education on management-skills variables (Factor 1) and educational-skills variables (Factor 2), as the dependent variables and the four demographic variables (independent variables) of highest level of education, number of years of vocational administrative experience, number of years teaching vocational subjects and level of participation in professional

vocational organization activities. It was hypothesized that there would be no statistically significant relationship between the two variables. Using two regression models, the two hypotheses were rejected at .05 level of significance, indicating that there was a statistically significant relationship between the management skills variables and the educational skills variables as the dependent variables and the four independent variables. The R^2 for model 1 and model 2 were .09 and 0.16, respectively, indicating that the independent variables accounted for 9% and 16% of the variance in the dependent variables. Using f as a measure of effect size for the two regression models, their values were .32 for above medium effect size for Factor 1 and high (.43) effect size for Factor 2. The f effect size reflects the strength of the association between the dependent and independent variables. Interpretation of R^2 as a measure of the effect size for this study is misleading as it showed the independent variables accounted for only 9% of the variance in Factor 1 and 16% for Factor 2. With a medium-to-high effect size, the level of association between the variables was by no means trivial.

Conclusions

Based on the research findings, the following was concluded:

1. There are more older women administrators than younger ones in vocational education at community colleges in Texas.

2. There are few minority (5.6% African-American and 7.3% Hispanic American) women administrators in vocational education at community colleges in Texas.
3. A good percentage of the women administrators now possess doctoral degrees.
4. The majority of the women vocational administrators did not take vocational administrative courses.
5. Neither internship programs nor the use of competency-based administrator modules was a major source of vocational administrative training.
6. Half of the administrators did not perceive their preservice administrative training as adequate.
7. The majority of the women administrators were not involved in regular professional organizational activity.
8. In 7 of the 11 competency categories, at least a quarter of the women administrators do not perceive themselves competent in those areas.
9. Knowledge of level of education and number of years of teaching vocational subjects can help in predicting level of competency in the management-skills area defined as Factor 1 whereas level of years of education, number of years of teaching vocational subjects, and number of years of

vocational administrative experience is useful in predicting level of competency in the educational skills variables defined as Factor 2.

Limitations

Certain limitations need to be put in perspective in order to ensure proper interpretation of the data. First, this study was based on self-reported competencies as perceived by the women administrators. As in any self-evaluation, there may be bias due to the tendency of some administrators to be either too harsh or too lenient on themselves. Secondly, not all of the tasks are applicable to all of the administrators. As such, it is not so much the level of competency the individual administrator possesses but what her job responsibility calls for. Thirdly, studies on women administrators noted that many women administrators are usually at the lower to middle level of administrative positions, and, therefore, many of the respondents may not be in the administrative level to exert leadership authority. Fourthly, due to randomization of the sample, different school sizes may not have been represented proportionally.

Recommendations

On the basis of the literature reviewed, the demographic profiles data, findings, and conclusions of the study, the following recommendations are made in three areas. Recommendations are made to the women administrators

in vocational education at the community colleges in Texas, and then recommendations are made to the educators of community college administrators. Finally, suggestions for further research are made.

Recommendations to Women Administrators in Vocational Education

The continued assessment of their personal contributions and shortcomings is an important evaluation process for administrators who intend to improve in their areas of responsibility. On that basis, it is recommended that administrators self-evaluate to assess their own areas of needed professional improvement and take personal action to acquire the necessary competency if they desire to be effective administrators. Lovelace and LaBrecque (1992), in their study on professional improvement assessment, found that 36% of the responding administrators had not completed any professional vocational teacher education courses. In addition, 54% of the responding administrators felt that the present inservice staff development efforts of their institution were inadequate, and only 46% of the respondents felt that the institutions provided them with useful assistance in developing a personalized plan for professional development.

Recommendations for Educators of Vocational Administrators

For educators of vocational administrators, it is recommended that they design inservice programs to meet the specific needs of the vocational

administrators. In addition to general administrative functions, vocational administrators perform unique vocational administrative functions. This should be taken into consideration when designing inservice programs.

Only 26.9% of the women administrators took vocational education administrator courses. It is recommended that vocational administrator educators "sell" their programs better. A proper understanding of the unique functions, mission, and philosophy of vocation education is necessary for effective administration of vocational programs.

Administrator internship programs have been touted as a means of improving administrators' preparation programs. Only 15.1% of this group trained by doing a supervised internship. It is recommended that educators of vocational administrators inculcate this learning process to help women administrators achieve the necessary competencies.

With only 54% of the administrators classifying the preservice administrative training they received as adequate, vocational administrator educators could use the findings of this study and a newly developed administrator task inventory in designing appropriate programs.

Based on the finding of this study, only 5.6% African-American and 7.3% Hispanic-American women administrators in vocational education at community colleges in Texas responded to this study. It is recommended that

an attempt be made to encourage, recruit, or train promising women from these groups.

Recommendations for Further Research

Several competency-based vocational administrator modules have been developed for vocational administrators, yet this study indicates that only 5% of the respondents have used the modules. It is recommended that a national study be done to see if this lack of use is peculiar to this sample. It is also recommended that evaluation be made as to why there is such a low level of use of these modules.

A new administrator task inventory needs to be developed. The Administrator Task Inventory, which identified the competencies needed by vocational administrators at secondary and postsecondary level nationally, was first developed in 1977 and updated in 1987. Several changes and educational reform movements have occurred in vocational education since then, such as passage of the School-to-Work Act of 1994 and the Perkins 11 of 1990. This new task inventory will incorporate recent changes in vocational educational administration.

Other research recommendations are as follows:

1. Research should be conducted to determine if those who trained in combination with internship programs perceive themselves as more competent than those that did not do internship programs.

2. A comparison of women and men vocational administrators should be made to determine if the areas of perceived competency differed.

3. Other similar studies should be performed at either the state or national level.

4. Research methodology other than self-report should be used to evaluate level of competencies possessed by the vocational administrators.

5. There is a need for evaluation and dissemination of information on professional development programs that have been successful elsewhere.

6. Other predictor variables and the study of their interactions should be done to determine how well they predict the level of competencies possessed.

7. A study should be done concerning the barriers to women's professional and leadership competencies.

8. One important finding is that the educational administrators must fulfill both leadership and administrative functions. Lipham (1964) defined leadership as follows:

[It is] the initiation of a new structure or procedure for accomplishing an organization's goals and objectives The administrator, on the other hand, may be identified as the individual who utilizes existing structures or procedures to achieve an organizational goal or objective. (p.122)

It seems that most women administrators in vocational education perform mainly administrative functions rather than both leadership and administrative functions. It is therefore recommended that a study be undertaken to determine what leadership functions are being performed by women administrators at community colleges. This combines with another needed area of research, which is to determine if there is "glass ceiling" effect on women in vocational administration at community colleges.

9. Finally, there is great need for diverse research on women administrators in vocational education at community colleges.

Summary

This study has determined the perceived level of competencies possessed by women administrators and has provided information on areas of competencies possessed by women administrators at community colleges in Texas. It has provided needs- assessment data that vocational educators could use in planning preservice and inservice training programs. It has determined the need for relevant and effective inservice programs for the women

administrators in vocational education at community colleges in Texas. There is a lot of information on women in administration, particularly on discrimination issues at secondary level, but a dearth of information at the postsecondary level. This study can help fill the gap, not only concerning women administrators but also vocational education.

APPENDIX A
REQUEST FOR LIST OF WOMEN ADMINISTRATORS IN
VOCATIONAL EDUCATION AT
COMMUNITY COLLEGES
IN TEXAS

March 7, 1995

Contacts

Title

School

Address

City, State Zip

Dear

I am currently conducting a research study on the skills and competencies of women administrators in vocational education in Community Colleges in the State of Texas. The study is being supervised by Dr. Pat McLeod in the department of Applied Technology Training and Development, at the University of North Texas, Denton, Texas.

Would you please send me a copy of your county or college directory of women vocational administrators. The directory is very essential to study as it will provide me opportunity to contact all the women vocational administrators in the state of Texas.

I believe your college and other community colleges in Texas will benefit from the study.

Thank you in advance for your cooperation.

Sincerely,

Chioma Chiawa

APPENDIX B
LETTER TO WOMEN ADMINISTRATORS
IN VOCATIONAL EDUCATION
AT COMMUNITY COLLEGES
IN TEXAS

June 12, 1996

Contacts
Title
School
Address
City, State Zip

Dear

You are among the administrators selected for a survey to identify and analyze the competencies possessed by women administrators in vocational education at community colleges in the State of Texas.

This study is important based on the fact that demographic changes have empirically shown women to be the majority of the workforce. As a result, women will be expected to play greater and more technical roles in workforce leadership.

We believe this study will be very beneficial to you, as well as to all women administrators in vocational education, business industries, and the State of Texas, in providing information for professional upgrading of this field. This study will enable women administrators in vocational education to identify their area of competency and training needs required for more efficient and effective skills, giving them a competitive advantage in the workforce.

For this study to be valid, your response to the enclosed questionnaire is very critical. Please send the completed questionnaire in the self-addressed envelope, at your earliest possible convenience.

The information gathered in this study will be strictly confidential and the results will be used only for the purpose of this research. A copy of the result will be sent to you if you desire. If you have any questions regarding the study, please feel free to contact Dr. Pat McLeod at (817)565-2711, or Ms. Chioma Chiawa at (214)317-0812.

Thank you very much for your cooperation.

Sincerely,

Chioma Chiawa

APPENDIX C
FOLLOW-UP LETTER

July 16, 1996

Contacts
Title
School
Address
City, State Zip

Dear

I recently mailed you a questionnaire concerning the competencies possessed by women vocational administrators at Texas community colleges. I have not yet received your response as of this date. If you have not received the research materials, please contact Dr. McLeod at (817)565-2711 or myself at (214)317-0812 so that another package may be promptly sent to you.

As mentioned in my previous letter, information gathered in this study will be strictly confidential and the results will be used only for the purpose of this research. I would appreciate it if you could return the completed questionnaire in the self-addressed envelope as soon as possible. This study is a very significant one and your response is essential to the study's success.

If you have already returned the questionnaire, please disregard this letter.

Thank you for your cooperation.

Sincerely,

Chioma Chiawa

APPENDIX D
PERMISSION TO USE ADMINISTRATOR
TASK INVENTORY 1987

Chioma Chiawa
1634 Sunswept Ter.
Lewisville, TX 75067
(214)317-0812

April 25, 1996

Dr. Robert E. Norton
Center For Educ. & Training For Employment
Ohio State University
1900 Kenny Rd.
Columbus, Ohio 43210

Dear Dr. Norton

Subject: Permission to use Administrator Task Inventory Instrument 1987

Please permit me to use your 1987 "Administrator Inventory" instrument for my research on women administrators in vocational education in Texas. In addition, it will be very helpful if you can forward the test reliability of the instrument to me.

I am a doctoral candidate, in the Department of Applied Technology Training and Development at the University of North Texas. My dissertation is a study of the adequacy of training and the determination of the extent women administrators in vocational education at Texas community colleges possess the nationally identified competencies. After a series of research, your instrument is the most suitable for my topic. You did an excellent job. I will be using a modified form of the instrument to suit my purpose for the study.

I will give you full citation and credit in the dissertation. And also provide you with the result if you desire. Your approval at the earliest possible time would be appreciated.

Sincerely,

Chioma Chiawa

Chioma Chiawa
1634 Sunswept Ter.
Lewisville, Tx. 75067
(214-317-0812)

154

April 25, 1996

Dr. Robert E. Norton
Center For Educ. & Training For Employment
Ohio State University
1900 Kenny Rd.
Columbus, Ohio 43210

Dear Dr. Norton,

Subject: Permission to use Administrator Task Inventory Instrument 1987

Please permit me to use your 1987 "Administrator Task Inventory" instrument for my research on women administrators in vocational education in Texas. In addition, it will be very helpful if you can forward the test reliability of the instrument to me.

I am a doctoral candidate, in the Department of Applied Technology Training and Development at the University of North Texas. My dissertation is a study of the adequacy of training and the determination of the extent women administrators in vocational education at Texas community colleges possess the nationally identified competencies. After a series of research, your instrument is the most suitable for my topic. You did an excellent job. I will be using a modified form of the instrument to suit my purpose for the study.

I will give you full citation and credit in the dissertation. And also provide you with the result if you desire. Your approval at the earliest possible time would be appreciated.

Sincerely,
Chioma Chiawa
Chioma Chiawa.

10/1/96 Chioma:

To: WIMC Please consider this statement
as my granting you formal
permission to use my Administrator
Task Inventory Instrument.

Sincerely,
Robert E. Norton
Professor

APPENDIX E
QUESTIONNAIRE

University of North Texas
DEPARTMENT OF TECHNOLOGY AND COGNITION

RESEARCH QUESTIONNAIRE

TOPIC:

Assessment of the Perceived Competencies possessed by
Women Administrators in Vocational Education at
Community Colleges in Texas.

By
Chioma Chiawa

Supervised
By
Professor Pat McLeod,
Department of Applied Technology Training
and Development, University of North Texas
Denton, Texas

Summer 96

PART 1 Background

Please carefully complete the following questions as closely as applied to you.

A. Marital Status

1. Married
2. Single
3. Divorced
4. Widowed

B. Ethnicity

1. Anglo-American
2. African-American
3. Hispanic-American
4. Other

C. Age

1. under 31
2. 31-35
3. 36-40
4. 41-45
5. 46-50
6. 51 and over

D. Number of Children

1. None
2. 1 - 2
3. 3 - 4
4. 5 or more

E. Highest Level of Education

1. Associate
2. Bachelor's
3. Master
4. Specialist
5. Doctorate
6. Others, Specify _____

Background (Continues)

F. Type of education or training received

1. Took general education administrator courses
2. Took vocational educational education administrator courses
3. Used competency-based administrator modules
4. Attended workshops
5. Participated in supervised internship

G. How adequate was the training you initially received as vocational administrator

1. Very adequate
2. Adequate
3. Inadequate
4. Very inadequate
5. Received no training

H. Number of Years of Vocational Administrative Experience

1. 0 - 5
2. 6 - 10
3. 11- 15
4. 16 or more

I. Number of Years Teaching Vocational Subjects

1. 0 - 5
2. 6 - 10
3. 11- 15
4. 16 or more

J. How often do you participate in professional organization activities in vocational education

1. Monthly
2. Quarterly
3. Yearly
4. All of the above
5. None

SECTION 2

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence possessed to perform tasks.

1	2	3	4	5
Very Low				Very High

PROGRAM PLANNING, DEVELOPMENT, EVALUATION AND IMPROVEMENT

- | 1 | 2 | 3 | 4 | 5 | |
|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 1. Conduct occupational training program need assessment |
| [1] | [2] | [3] | [4] | [5] | 2. Identify labor market needs |
| [1] | [2] | [3] | [4] | [5] | 3. Utilize advisory committees |
| [1] | [2] | [3] | [4] | [5] | 4. Establish program goals and objectives |
| [1] | [2] | [3] | [4] | [5] | 5. Develop program curriculum outline |
| [1] | [2] | [3] | [4] | [5] | 6. Review licensure, accreditation, and certification requirement |
| [1] | [2] | [3] | [4] | [5] | 7. Determine facility, supply, and equipment needs |
| [1] | [2] | [3] | [4] | [5] | 8. Prepare program proposal |
| [1] | [2] | [3] | [4] | [5] | 9. Secure an external and internal program approval |
| [1] | [2] | [3] | [4] | [5] | 10. Develop program evaluation plan |
| [1] | [2] | [3] | [4] | [5] | 11. Determine program cost and effectiveness |
| [1] | [2] | [3] | [4] | [5] | 12. Interpret and use research results for program development and improvement. |
| [1] | [2] | [3] | [4] | [5] | 13. Develop program modification plan based on evaluation data |
| [1] | [2] | [3] | [4] | [5] | 14. Design and/or participate in institutional research studies |
| [1] | [2] | [3] | [4] | [5] | 15. Implement local board and administrative policies |

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence
possessed to perform
tasks

1 2 3 4 5

Very Low Very High CURRICULUM AND INSTRUCTIONAL
MANAGEMENT

Low High

- | | | | | | | |
|-----|-----|-----|-----|-----|-----|------------------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 1. | Establish curriculum development and review procedures |
| [1] | [2] | [3] | [4] | [5] | 2. | Comply with legal requirements and regulations |
| [1] | [2] | [3] | [4] | [5] | 3. | Identify student competencies through job/occupational analysis |
| [1] | [2] | [3] | [4] | [5] | 4. | Verify (validate) occupational tasks locally |
| [1] | [2] | [3] | [4] | [5] | 5. | Conduct task analysis as basis for curriculum development |
| [1] | [2] | [3] | [4] | [5] | 6. | Adopt, adapt, or develop vocational- technical curriculum |
| [1] | [2] | [3] | [4] | [5] | 7. | Determine program course sequence |
| [1] | [2] | [3] | [4] | [5] | 8. | Determine related academic requirements |
| [1] | [2] | [3] | [4] | [5] | 9. | Establish program admission requirements |
| [1] | [2] | [3] | [4] | [5] | 10. | Determine student progress reporting system |
| [1] | [2] | [3] | [4] | [5] | 11. | Determine instructional delivery methods |
| [1] | [2] | [3] | [4] | [5] | 12. | Seek instructional assistance from business and industry |
| [1] | [2] | [3] | [4] | [5] | 13. | Contract for training with private and public sectors when appropriate |
| [1] | [2] | [3] | [4] | [5] | 14. | Evaluate curriculum and instructional management function |

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence
possessed to perform
tasks

1 2 3 4 5

Very
Low

Very
High

PERSONNEL MANAGEMENT (Continues)

- | | | | | | |
|-----|-----|-----|-----|-----|-------------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 6. Recruit personnel |
| [1] | [2] | [3] | [4] | [5] | 7. Select and recommend personnel for employment |
| [1] | [2] | [3] | [4] | [5] | 8. Negotiate and manage employment contracts |
| [1] | [2] | [3] | [4] | [5] | 9. Supervise faculty and staff |
| [1] | [2] | [3] | [4] | [5] | 10. Establish and maintain open communications with personnel |
| [1] | [2] | [3] | [4] | [5] | 11. Orient new personnel to institutional policies and procedures |
| [1] | [2] | [3] | [4] | [5] | 12. Evaluate faculty and staff performance |
| [1] | [2] | [3] | [4] | [5] | 13. Recognize exemplary personnel performance |
| [1] | [2] | [3] | [4] | [5] | 14. Utilize due process for making personnel adjustments |
| [1] | [2] | [3] | [4] | [5] | 15. Evaluate personnel management functions |

BUSINESS AND FINANCIAL MANAGEMENT

- | | | | | | |
|-----|-----|-----|-----|-----|---------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 1. Develop procedures for business and financial management |
| [1] | [2] | [3] | [4] | [5] | 2. Comply with legal requirements for purchasing and disposal |
| [1] | [2] | [3] | [4] | [5] | 3. Comply with legal requirements for auditing and reporting |

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence
possessed to perform
tasks

1 2 3 4 5

Very
Low

Very
High

BUSINESS AND FINANCIAL MANAGEMENT
(Continues)

- | | | | | | |
|-----|-----|-----|-----|-----|---------------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 4. Interpret and apply federal and state aid funding formulas |
| [1] | [2] | [3] | [4] | [5] | 5. Develop operational budgets |
| [1] | [2] | [3] | [4] | [5] | 6. Develop capital budgets |
| [1] | [2] | [3] | [4] | [5] | 7. Prepare bid specifications for services, supplies and equipments |
| [1] | [2] | [3] | [4] | [5] | 8. Provide for risk management |
| [1] | [2] | [3] | [4] | [5] | 9. Monitor program-generated revenues |
| [1] | [2] | [3] | [4] | [5] | 10. Manage financial expenditures |
| [1] | [2] | [3] | [4] | [5] | 11. Manage financial contracts and agreements |
| [1] | [2] | [3] | [4] | [5] | 12. Evaluate business and financial functions |

FACILITIES AND EQUIPMENTS MANAGEMENT

- | | | | | | |
|-----|-----|-----|-----|-----|------------------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 1. Establish procedures and policies for facility and equipment use |
| [1] | [2] | [3] | [4] | [5] | 2. Comply with health and safety requirements |
| [1] | [2] | [3] | [4] | [5] | 3. Interpret and apply requirements for construction of new facilities |
| [1] | [2] | [3] | [4] | [5] | 4. Provide facility design/renovation specifications |
| [1] | [2] | [3] | [4] | [5] | 5. Maintain capital equipment inventory |

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence
possessed to perform
tasks

1 2 3 4 5

Very
Low

Very
High (continues)

FACILITIES AND EQUIPMENTS MANAGEMENT

- [1] [2] [3] [4] [5] 6. Arrange for rental of equipment and facilities
- [1] [2] [3] [4] [5] 7. Evaluate the facilities and equipment management function

PROFESSIONAL AND STAFF DEVELOPMENT

- [1] [2] [3] [4] [5] 1. Survey inservice training needs of staff
- [1] [2] [3] [4] [5] 2. Comply with state and local requirements regarding professional development
- [1] [2] [3] [4] [5] 3. Develop individual personnel development plans for staff
- [1] [2] [3] [4] [5] 4. Provide in house professional staff development programs
- [1] [2] [3] [4] [5] 5. Facilitate staff participation in state department, college, university and other training program
- [1] [2] [3] [4] [5] 6. Facilitate technical inservice training of instructors
- [1] [2] [3] [4] [5] 7. Encourage participation in professional organizations and conference
- [1] [2] [3] [4] [5] 8. Participate in professional meetings and programs for self-development

RESOURCE DEVELOPMENT (FINANCIAL AND OTHERS)

- [1] [2] [3] [4] [5] 1. Establish procedures for resources development

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence
possessed to perform
tasks

1	2	3	4	5	
Very Low					Very High (OTHERS continues)
[1]	[2]	[3]	[4]	[5]	2. Establish procedures for resources management
[1]	[2]	[3]	[4]	[5]	3. Identify total resources needed
[1]	[2]	[3]	[4]	[5]	4. Identify available resources (e.g., financial and others)
[1]	[2]	[3]	[4]	[5]	5. Secure appropriate approval for submission of proposals and applications
[1]	[2]	[3]	[4]	[5]	6. Negotiate contract and agreements for resources/services
[1]	[2]	[3]	[4]	[5]	7. Develop partnerships with business, industry, and labor
[1]	[2]	[3]	[4]	[5]	8. Comply with funding sources reporting requirement
[1]	[2]	[3]	[4]	[5]	9. Maintain resource development records
[1]	[2]	[3]	[4]	[5]	10. Determine alternatives for continuing funded project
[1]	[2]	[3]	[4]	[5]	11. Evaluate resource development functions

MARKETING VOCATIONAL-TECHNICAL EDUCATION

[1]	[2]	[3]	[4]	[5]	1. Develop a marketing plan
[1]	[2]	[3]	[4]	[5]	2. Develop printed promotional materials (e.g., brochures, newsletters, press releases)
[1]	[2]	[3]	[4]	[5]	3. Develop promotional materials strategies

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence possessed to perform tasks

1	2	3	4	5	
Very Low			Very High		MARKETING VOCATIONAL-TECHNICAL EDUCATION (continues)

- | | | | | | |
|-----|-----|-----|-----|-----|--------------------------------------------------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 4. Seek opportunities to make public presentations |
| [1] | [2] | [3] | [4] | [5] | 5. Establish and /or participate in special events (e.g., open houses, mall shows, fairs) |
| [1] | [2] | [3] | [4] | [5] | 6. Identify target groups for marketing approach (e.g., student, counselors, parents, advisory groups) |
| [1] | [2] | [3] | [4] | [5] | 7. Determine effectiveness of marketing plan |

PUBLIC RELATIONS

- | | | | | | |
|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------------------|
| [1] | [2] | [3] | [4] | [5] | 1. Seek out and make use of all opportunities to create a positive image for vocational education |
| [1] | [2] | [3] | [4] | [5] | 2. Establish and maintain positive personal relationships |
| [1] | [2] | [3] | [4] | [5] | 3. Participate in civic and professional groups |
| [1] | [2] | [3] | [4] | [5] | 4. Provide in service training for faculty and staff for public relation program |
| [1] | [2] | [3] | [4] | [5] | 5. Encourage faculty and staff to participate in professional and civic group |
| [1] | [2] | [3] | [4] | [5] | 6. Encourage students to provide community service |
| [1] | [2] | [3] | [4] | [5] | 7. Establish a speakers bureau |
| [1] | [2] | [3] | [4] | [5] | 8. Establish procedures for press releases |

Instruction: Please check one item under each classification as closely as applied to you:

Level of competence
possessed to perform
tasks

1 2 3 4 5

Very

Low

Very

High

PUBLIC RELATIONS (continues)

- [1] [2] [3] [4] [5] 9. Cultivate positive relationships with other educational agencies
- [1] [2] [3] [4] [5] 10. Serve on internal/external boards, counsels and committees
- [1] [2] [3] [4] [5] 11. Identify and work with community opinion leaders
- [1] [2] [3] [4] [5] 12. Give public recognition for student and staff achievements
- [1] [2] [3] [4] [5] 13. Give public recognition to supporters of vocational education

PROGRAM ARTICULATION

- [1] [2] [3] [4] [5] 1. Determine need for and benefits of program articulation
- [1] [2] [3] [4] [5] 2. Develop plan and procedures for articulation
- [1] [2] [3] [4] [5] 3. Involve other agencies for articulation purposes
- [1] [2] [3] [4] [5] 4. Establish inner-agency articulation committee
- [1] [2] [3] [4] [5] 5. Develop articulation agreement
- [1] [2] [3] [4] [5] 6. Maintain and renew articulation agreements
- [1] [2] [3] [4] [5] 7. Encourage coordinated planning to avoid duplication of effort.

Source: Norton, Robert E.; Harrington, Lois G. Administrator Task Inventory 1987.

Thank You

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