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Identifying skills needed by office information systems graduates in the changing work environment: perceptions of administrative support occupations workers

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IDENTIFYING SKILLS NEEDED BY OFFICE INFORMATION SYSTEMS GRADUATES IN THE CHANGING WORK ENVIRONMENT: PERCEPTIONS OF ADMINISTRATIVE SUPPORT OCCUPATIONS WORKERS

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by
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DEDICATION

This dissertation is dedicated to my husband, Jim, who held my hand, provided moral and spiritual support, and encouraged me along this long road towards my doctoral degree; and my children, Trey, Clay, and Martha, who babysat for me, said many prayers, and lost many hours with their mother.

This manuscript is also dedicated to the memory of my mother, Polly Lou Sepulvado, a 33-year business educator whose love and wisdom gave me the courage to continue and make my dream a reality; my father, Doug Sepulvado, who always questioned if I would ever finish school; and my daughter, Brooke, whose dreams were cut short but her determination in the face of adversity gave me the strength to finish this degree. I know the three of you were pushing me along with the help of GOD.

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ABSTRACT

This study sought to identify the skills that need to be taught in an associate degree program for office information systems. Specifically, the researcher sought to determine the importance of skills needed by office information systems/ administration graduates with implications for curricular revision. One hundred and fifty-seven members of the International Association of Administrative Professionals in the states of Louisiana, Mississippi, and East Texas including the Houston, Texas area participated in this study.

Findings indicated that the participants perceived 109 (85%) of the job skill items to be important, very important, or extremely important in the performance of their jobs. Only 19 (15%) of the job skill items were perceived to be somewhat important in the performance of their jobs.

Almost all of the participants were women and the average number of years in the administrative support occupation field was almost 22 years. Almost three-fourths of the participants had completed some type of post-secondary type of education. The participants reported 70 job titles with the most frequently reported job titles of administrative assistant or executive assistant.

Over one-third of the participants were employed in the service industry and one-third reported the scope of the organization as international. Almost one-third of the participants reported the size of the office where they worked as large and over half reported the type of community as large.

The participants reported using most frequently Microsoft Office software packages to perform their jobs. To perform their jobs, over half of the participants

reported using: copier; calculator; fax machine; computer printer; multi-line telephone systems; personal computer; typewriter; local area network; scanner; and voice mail via telephone.

Using the perceived importance of the nine job skill categories' summated scores and selected personal and professional demographic characteristics, the researcher calculated stepwise multiple on nine separate regression equations. This procedure returned four statistically significant models. However, these models did not explain a large portion of the variance.

Recommendations and implications were given for Office Information Systems curriculum associate degree programs. Also, recommendations and implications were provided for future research and studies.

CHAPTER 1

INTRODUCTION

> I have often said that we do not have a worker shortage in this country but a skills shortage. We must equip all Americans with the tools they need to succeed in the new economy, while at the same time provide businesses with the skilled workers they need to succeed in the global economy (Herman, 2000).

The former United States Secretary of Labor, Alexis M. Herman, made those comments at the 2000 National Skills Summit. Also, E. L. Chao (2001), the current U. S. Secretary of Labor, stated that the American workforce is facing a challenge, a skills gap.

Workers are unprepared to perform their jobs. This workforce skills gap is a result of the technological advancements in the work environment. These advancements in technology are changing the way people work and play. How employees perform their jobs and where they perform their jobs are changing as a result of these advancements in technology (Chao, 2001).

Rationale for the Study

The changing skill requirements of the work place, educational degree program requirements, and accrediting agency standards are a few of the driving forces behind assessing the needs of the labor market. Emerging technology, globalization, and flattening organizational hierarchy have redesigned all jobs in the economy, especially the jobs held by the administrative support occupations' employees. In addition to performing word processing tasks, Kerka (1995) stated that administrative support occupations' employees use a variety of office technology to perform office tasks. Such technologies include facsimiles, e-mail, voice mail, and computer networks. Administrative support occupations employees use desktop publishing, spreadsheet and

database spreadsheets to complete office tasks (Administrative Development Institute, 1994; Jurisic, 1999; Kerka, 1995; Martin, 2001). Bouchey (2001), Herbert and Hosler (1997), and Cooper (1999) noted that office workers use the Internet to gather information and conduct research, use software application packages such as word processing, spreadsheet, and database to create and maintain documents, use online computer services and use manual and electronic calendars to schedule appointments. According to Martin (2001), office workers' roles have changed. They have assumed the role of "media producer, contract negotiator, presentation designer, Web-based researcher, and software specialist" (p. 8).

This trend in the flattening and downsizing of corporations and advancing technological changes are not isolated issues to the American workplace. These changes are also occurring abroad. Administrative support workers in Britain also face changing job skills and titles. Giles, La Valle, and Perryman (1996) described their transformation in Britain. These workers must possess good oral and written communication, interpersonal, computer-related, and office equipment. The stereotyping of these workers is common to Britain and the United States. It is predicted that administrative support occupations workers will need more training in the future in both countries (Bureau of Labor Statistics, 2000; Giles et al., 1996; Mittelhauser, 1998).

Employers are disenchanted with the current skills of individuals hired to fill job vacancies. They have voiced concern about the lack of a skilled workforce. Some of the traditional office skills needed by yesterday's administrative support occupations workers are inadequate in today's office environment. Business and industry expect educational institutions to send graduates who are prepared with necessary job skills. If

educational institutions are to provide the labor force then curriculum must reflect those skills (Arneson, 1989; McMahon, 1972; National Skill Standards Board [NSSB], 1999; Prosser & Quigley, 1968; Secretary's Commission on Achieving Necessary Skills [SCANS], 1992c; Sullivan, 1995; Whetzel, 1992).

The major accrediting agencies for institutions of higher education have developed standards for institutions and their educational programs. Institutions must document that their curriculum is reflective of the needs of the work force (American Assembly of Collegiate Schools of Business [AACSB], 1992; Association of Collegiate Business Schools and Programs [ACBSP], 1996). What are the skill requirements of the work place? Is the American workforce lacking a source of workers? Or, is it lacking skilled workers? What skills do employees need and how do educators determine these skills needs?

Educational programs can use several different sources to determine the skill requirements of the labor market. Sources include advisory boards, alumni, employers, and professional organizations.

Advisory board members should include representatives from business and industry. They provide feedback about the skills needed for employment (AACSB, 1992; ACBSP, 1996; W. Creighton, personal communication, July 20, 2001; McMahon, 1972; Prosser & Quigley, 1968; J. Worley, personal communication, July 28, 2001). Gillie (1973) stated that educators should involve the people who are most affected by the curricula, the potential employers of graduates. The first step in the curricula revision process should be determining the employment needs of the labor market. An

advisory board can provide pertinent information about the skill needs of employers (Gillie, 1973; McMahon, 1972; Prosser & Quigley, 1968).

Recent degree program graduates should be consulted about skills needed for employment. Universities can collect skill requirement needs and degree program satisfaction from these graduates and their employers (AACSB, 1992; ACBSP, 1996; W. Creighton, personal communication, July 20, 2001; J. Worley, personal communication, July 28, 2001).

The Regional Coordinating Councils of Louisiana is another source of information about labor market demands. In The Master Plan for Public Postsecondary Education 2001 the Louisiana Board of Regents (2001) divided Louisiana into eight regions. Each Louisiana public postsecondary institution must work in conjunction with one of the established Regional Coordinating Councils. Area representatives from business, industry, government agencies, and educational institutions serve as members of the Regional Coordinating Councils. The purpose of the Regional Coordinating Councils is to determine the skill needs of their workforce and then develop programs to meet the educational and training needs of their area employers (Louisiana Board of Regents, 2001).

Another source of information about skill requirements would be organizations involved with administrative support occupations' curricular issues and models. These organizations include The Vocational Technical Education Consortium of States (V-TECS), International Association of Administrative Professionals (IAAP), and The Office Systems Research Association (OSRA). In 1996 The Vocational Technical Education Consortium of States (V-TECS) and the Professional Secretaries

International (PSI)/ International Association of Administrative Professionals (IAAP), joined efforts to meet the needs of the workforce and provide educators with a framework for curriculum development by conducting a comprehensive research study. The results of this research study produced a publication, Administrative Support Occupations Skill Standards (The Vocational Technical Education Consortium of States [V-TECS], 1996).

In another effort to assist with the development of relevant curriculum for administrative support occupation workers, Professional Secretaries International (PSI)/ International Association of Administrative Professionals (IAAP) organization developed the PSI Model Curriculum for Office Careers (PSI, 1994). According to S. Fenner (personal communication, August 17, 2000) of I AAP, this curriculum is the latest version, but noted that it will be outdated soon, and PSI/IAAP has no plans to update the model. Another administrative support occupations' curriculum model, Organizational and End-user Information Systems Model Curriculum (The Office Systems Research Association [OSRA], 1996), was developed by The Office Systems Research Association. The information used in the development of this curriculum was gathered during the winter of 1994-1995. It will also soon be outdated.

Advancements in technology have changed the role of the administrative support occupations workers, and the types of tasks and skills needed and performed by these workers. Several researchers have conducted studies to determine these changes (Anderson & Griffin, 1994; Butts, 1993; Davis, 1992; Haff, 1993; Henry, 1994; Herbert & Hosler, 1997; Kozlowski, 1998; Moore, 1993; Peters, 1990; Sormunen & Adams, 1999). A few researchers have conducted studies to determine the equipment and

software needs of businesses. Their findings appear to indicate changing technology has caused businesses to update their office environment to reflect these changes. (Gerber, Hamburger, Buddy, & Nowka, 1999; Kruk, 1996; Redmann, Seaward, & Griffin, 1989; Vincent & Ross, 1998; Vincent & Williams, 1993).

Other studies sought to determine what job skills administrative support workers need. These skills were grouped under major categories or themes. McEwen (1998) grouped skills under four categories: administrative skills, public relation skills, end-user computer skills, and professional behaviors. The Administrative Support Occupations Skill Standards (V-TECS, 1996) grouped the duties/tasks into nine technical core skill areas and three technical occupation specific skills areas. The core skills categories are organizing and planning functions; maintaining equipment and supplies; performing financial functions; managing records and files; communications; document production; information distribution; producing desktop-producing documents; and using operating systems. The occupation specific skill categories are supervising personnel; preparing legal documents; and providing medical services.

Many thought the integration of technology and downsizing of American businesses would eliminate the need for administrative support occupations workers, but the need has not decreased. These occupations are predicted to remain constant or even grow. By the year 2008, it is projected that legal secretarial jobs will increase by 13%, medical secretarial jobs by 12%, receptionists and information clerks' jobs by 24% and general office clerks' jobs by 15%. In some occupations, job openings will occur because of replacement needs—retirement, death, job change, relocation, or career advancement (Bureau of Labor Statistics, 1999).

In Louisiana, employment in administrative support occupations is expected to grow 7 percent. Estimated employment trends for 1994-2005 indicate an expected growth of at least 9% in the secretarial occupation, except legal and medical; at least 33% in the receptionists and information clerk occupations; and at least 10% in general office clerk occupation (Guidelines for Implementing the Carl D. Perkins Vocational & Technical Act of 1998 [Carl D. Perkins Guidelines], 1999). The Louisiana Department of Labor (1999) has projected a growth in several of these occupations; including clerical supervisors, receptionists and information clerks, and medical secretaries. These were ranked among the top 10 demanded occupations for Louisiana through the year 2006.

Since there is a demand for office workers in the administrative support occupations, universities and colleges need to address current skills needed by these workers and continue to prepare students to enter these occupations. Curriculum planners, educators, and administrators must stay abreast of job skill requirements to meet educational degree program requirements, accrediting agency standards and the needs of business and industry.

Statement of the Problem

The United States workforce competitiveness is determined by employee level of education and training (Arneson, 1989; NSSB, 1999; Sullivan, 1995; Whetzel, 1992). However, business and industry have expressed a growing dissatisfaction with new hires' skills and knowledge.

In response to this dilemma, several groups examined/identified necessary workplace competencies for job success (Carnevale, Gainer, & Meltzer, 1988; Resnick

& Wirt, 1996; SCANS, 1991). These groups identified generalizable or generic skills that would allow an individual to become effective in almost any work setting. These skills or traits are personal and are not the necessary job tasks found in a particular occupation.

As educators seek to determine their educational program content, they must balance generic and tailored job skills. For example, office administration degree programs should not have to build basic skills (such as the three R's--reading, writing, and arithmetic). These programs should enhance thinking and personal quality skills through higher-level learning. They cannot adequately provide training for every possible spreadsheet software program, but instead should teach the generic features of business application software (Carnevale et al., 1988; W. Creighton, personal communication, July 20, 2001; SCANS, 1991; J. Worley, personal communication, July 28, 2001).

Educational programs must also meet the standards of accreditation agencies. The accreditation agencies for occupational education have standards that are reflective of the labor market trends. In order for an educational program such as office administration to receive an agency's accreditation, it must demonstrate that it has met or exceeded established standards. For example, an associate degree program must provide follow-up data on recent graduates' satisfaction with skill level as well as the satisfaction of employers of these graduates (ACBSP, 1996). To obtain and maintain accreditation, a program must base its curriculum on employment trends and workplace skills (AACSB, 1992; ACBSP, 1996).

For the occupational area of office administration, The Occupational Outlook Handbook, 2000-01 Edition (Bureau of Labor Statistics, 2000) identifies 16 job clusters. A description of the nature of the work, working conditions, employment trends, training/education and other qualifications needed, and a list of related occupations is shown for each cluster. For eight of the sixteen job clusters within the "administrative support occupations including clerical" job group, employers prefer new hires to have more education than a high school diploma, but can be below the baccalaureate degree level. These eight clusters include the following: (1) court reporters, medical transcriptionists, and stenographers (2) information clerks (3) office and administrative support supervisors and managers (4) office clerks, general (5) records processing occupations (6) secretaries (7) bank teller and (8) word processors, typists, and data entry keyers (Bureau of Labor Statistics, 2000). (See Appendix A)

The Office Information Systems degree program at Northwestern State University focuses on these eight clusters (W. Creighton, 2001). W. Creighton (personal communication, July 20, 2001) stated that 1997-2001 graduates of the office information systems program at NSU have sought employment in the surrounding areas (within a 70 mile radius of Natchitoches, Louisiana). This data supported an earlier study of 1992-1996 office information systems' graduates. Creighton and Kilcoyne (1998) found that all graduates were working in Louisiana. Their job titles included secretary, caseworker assistant, career services assistant, bookkeeper, legal secretary, customer service, and loan supervisor.

B. Kleen (personal communication, August 29, 2001) stated that the majority of the information systems' graduates from Nicholls State University stayed in the area of

Thibodaux, Louisiana. They are employed in area hospitals, legal and medical offices, schools, and small business offices. Job titles include office manager, administrative support professionals and software support professionals.

As technology continues to change the work environment and the required skills for jobs, potential employees who are appropriately educated will tend to do best (Gates, 1995). Gates (1995) recommended that people "get a good formal education and then keep on learning" (p. 254). McMahon (1972), Norton (1993), and Prosser and Quigley (1968) stated educators must determine the needs of the work place and provide educational programs that are reflective of the work environment. Also, Norton (1993) and Prosser and Quigley (1968) stated that workers who currently perform the jobs are the best reliable source of content verification for occupational training programs. Therefore, educators must determine the needs of business and industry and make appropriate curricular changes to be reflective of the work environment.

Since the job skills in the administrative support occupations are changing under the impact of new technology and corporate downsizing, research is needed to assist educators in planning office administration curriculum as well as determining equipment, facilities, and in-service training needs of educators. Once an assessment of the skill needs has been conducted, educators can then modify, update, and revise curricula to remain relevant to the job requirements. Therefore, the following research questions will be addressed in this study:

(a) What are the skills needed by administrative support occupations' workers?

(b) Does a relationship exist between the administrative support occupations employees' perception of skills and other personal, professional demographic and organizational variables?

Purpose and Objectives of the Study

The purpose of this study was to identify the skills that need to be taught in an associate degree program for office information systems. Specifically, the researcher sought to determine the most important skills needed by office information systems/administration graduates with implications for curricular revision. The researcher's objectives for this study were:

Objective 1. To determine the importance of administrative support job skills in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions.

Objective 2. To determine the importance of administrative support job skill categories in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions.

Objective 3. To describe workers who are currently employed in administrative support occupations positions on the following selected demographic characteristics:

(a) age;

(b) gender;

(c) job title;

(d) years of work experience in the field of administrative support occupations;

(e) highest level of education completed;

(f) size of the office (as measured by the total number of employees) at the location where participant is employed;

(g) type of community (as measured by population size) in which the office of employment is located;

(h) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(i) type of organization (as measured by the Department of Labor [DOL] Standard Industrial Code [SIC] designation) in which the participant is employed. (See Appendix B)

Objective 4. To determine whether or not selected software/programs, office technology, and other office items are used in the performance of administrative support office jobs as perceived by workers currently employed in administrative support occupations positions.

Objective 5. To determine if a model exists explaining a significant portion of the variance in the perceived importance of administrative support job skill categories in the performance of administrative support jobs from the following personal and professional demographic characteristics:

(a) age;

(b) gender;

(c) job title;

(d) years of work experience in the field of administrative support occupations;

(e) highest level of education completed;

(f) size of the office (as measured by the total number of employees) at the location where participant is employed;

(g) type of community (as measured by population size) in which the office of employment is located;

(h) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(i) type of organization (as measured by the Department of Labor [DOL) Standard Industrial Classification [SIC] designation) in which the participant is employed.

Significance of the Study

The rapidly changing office environment and changing role of the office workers are causes of great concern for curricular planners and educators. Educators are also concerned about maintaining educational programs that adhere to the philosophies of their universities and degree programs (Northwestern State University General Catalog, 2000-2001), accreditation standards (American Assembly of Collegiate Schools of Business (AACSB), 1992; Association of Collegiate Business Schools and Programs (ACBSP, 1996) and local, state and federal legislation (Guidelines for Implementing the Carl D. Perkins Act of 1998, 1999; Louisiana Board of Regents, 2001; Prosser & Quigley, 1968; SCANS, 1991). Finally, educators are faced with the course requirement limitations set by the existing degree programs (Northwestern State University General Catalog, 2000-2001).

With the continued introduction of new technologies into the office environment educators, employers, and students will continue to experience changes in the skill needs of the administrative support occupations workers. Curricular planners can use the information gathered through this study as a guide and framework to assist educators with validating, updating, changing, expanding, or revising the courses in the office occupations programs to reflect the most important/critical skills.

Limitations of the Study

This study focused on incumbent administrative support occupations workers in the states of Louisiana, Mississippi, and East Texas (including Houston, Texas). Therefore, the findings of this study may not be generalized to other states within the United States.

The researcher gathered information regarding the perceived importance of skills needed by incumbent workers in the eight job clusters within the "administrative support occupations including clerical" job group. Therefore, the findings of the study may not be generalized to other occupations. The study obtained self-reported information through mail questionnaires.

Definition of Terms

For the purpose of this study, the following terms will be defined as follows:

Incumbent Office Worker—a person who is performing the required tasks to complete the job.

Importance of Skill—How important is the skill to the job performance. If a skill is rated extremely important, the skill is critical to the performance of the job. If a skill is rated very important, the skill is needed in the performance of the job. If the skill is

rated important, the skill is usually needed in the performance of the job. If the skill is rated somewhat important, the skill might be needed in the performance of the job. If the skill is rated not important, the skill is not needed in the performance the job.

Skill—"great ability or proficiency; expertness that comes from training, practice, etc." (Webster's New World College Dictionary, 2000, p. 1343).

Proprietary Business School—a commercial, profit-making institution usually privately owned that trains students in office and clerical skills (Unger, 1996, p. 776).

Technical College—"A post-secondary institution offering courses and training in a variety of non-academic, vocational skills. Educational programs at technical colleges range from short-term instruction in clerical skills to complex, multi-year instruction in various crafts, production skills and semiprofessional technologies such as computer programming, electronics and instrumentation" (Unger, 1996, pp. 972-973).

Company/Organization scope by operation—The organizational scope by level of location will be defined as the location or locations of the organization/company. For example, Exchange Bank is a locally owned financial institution. It has offices located on the east side and on the west side of Natchitoches and the company scope would be local locations.

Type of organization by the Economic Sector (SIC Codes)—According to the Standard Industrial Classification Manual (1987) a business or industry organization can be grouped under one of following nine economic categories: (1) agriculture, forestry, and fishing; (2) mining; (3) construction; (4) manufacturing; (5) transportation, communication, electric, gas, and sanitary services; (6) wholesale and retail trade; (7)

finance, insurance, and real estate; (8) services; and (9) public administration (Standard Industrial Classification Manual, 1987, pp. 7-9).

Location of organization by city population size—The location of organization by city population size will be defined as small city/town (less than 5,000); medium city (5,001-25,000); medium-large city (25,001-50,000); and large city (greater than 50,001).

East Texas—The east Texas region including Houston, Texas will consist of the following counties: Titus, Camp, Franklin, Hopkins, Morris, Lamar, Delta, Red River, Bowie, Cass, Henderson, Van Zandt, Panola, Rains, Upshur, Rusk, Cherokee, Marion, Gregg, Harrison, Anderson, Wood, Smith, Sabine, Shelby, San Augustine, San Jacinto, Houston, Jasper, Newton, Polk, Angelina, Trinity, Tyler, Nacogdoches, Galveston, Brazoria, Jefferson, Hardin, Orange, Matagorda, Wharton, Liberty, Chambers, Harris, Montgomery, Walker, and Waller (Texas Online, n.d.)

CHAPTER 2

REVIEW OF THE LITERATURE

In this chapter a review of relevant research regarding skill requirements of administrative support workers is presented. It is divided into the following areas: a brief historical overview of the administrative support occupation; the employment outlook for the administrative support occupations' workers; changes in job titles and tasks; knowledge, skills and abilities needed by administrative support workers in the office environment as perceived by business and industry; other knowledge, skills, and abilities related studies; knowledge, skills, and abilities needed by administrative support workers in the office environment as perceived by educators; curriculum content and models; procedures used to revise curriculum; the requirements of accreditation standards; and national and state skill standards.

Brief Historical Overview of the Administrative Support Occupation

The exact date the administrative support occupation appeared in the work environment is unknown. However, it is known that the establishment of this occupation arose out of a need to record information. One of the primary functions of this occupation was the transcription of information. Since the recording space for information was limited, workers used an abbreviated form to record information, shorthand. Thus another essential job skill was shorthand. The people performing these jobs were usually very prominent, well-educated men (International Association of Administrative Professional [IAAP], n.d.c).

With the expansion of trade and commerce, business people needed more administrative support workers to handle correspondence and confidential matters and

maintain financial records (IAAP, n.d.c). With the industrial revolution, the need for office workers increased, and the demand outpaced the supply. Men held most of these jobs, but due to demand women began entering the administrative support occupations after the 1830s. After the Civil war ended, some of the women kept their positions because they were more accurate and productive than their male counterparts. Also, they were paid half the salary of the man (Mezile, 1988).

Women, who first worked in federal government offices, were called clerks. Their duties included sorting and packaging bonds and currency. Women slowly moved into the occupations of stenographer and typist. These occupations—stenographers, clerks, and typists—were the forerunners of today's secretary. Women in the administrative support occupations increased from 55% in 1880 to 95% by 1930. The administrative support occupations held by the women were very prestigious, second only to professional occupations (Mezile, 1988).

Employment Outlook for Administrative Support Occupations Workers

The Occupational Outlook Handbook (Bureau of Labor Statistics, 2000) provides employers, educators, and prospective employees with valuable information about employment trends in occupations. It provides projected employment growth, educational and job skill requirements, and estimated average salary for occupations. This information is very valuable and useful for people who prepare students for the workplace.

All occupations are grouped into nine clusters: construction; finance, insurance, and real estate; government; manufacturing; mining; retail trade; services; transportation and public utilities; and wholesale trade. The occupations of secretary,

receptionist, general clerk, medical and legal secretaries are grouped under the administrative support including clerical occupational cluster (Bureau of Labor Statistics, 2000). The person working in the secretarial occupation can hold the job title of secretary. Some secretarial workers are called "administrative assistant, executive secretary, and administrative secretary" (Chronicle Guidance Publications, 1999, p. 17). The workers in greatest demand will be those people who have technological, administrative, and secretarial skills. It is projected that many job openings will occur due to transfers and retirements (Chronicle Guidance Publications, 1999).

From 1998 to 2008 the Bureau of Labor Statistics (1999) projected that several administrative support occupations will experience growth while other occupations decline. The number of jobs in the legal secretary occupation will increase by 13%; in the medical secretary occupation by 12%; in the receptionists and information clerk occupation jobs by 24%; and in the general office clerk occupation by 15%. The secretary occupation will experience little or no change in jobs. However, job openings will be available due to turnovers and retirements in this occupation (Bureau of Labor Statistics, 1999).

Nationally the projected number of people employed in the secretary, except legal and medical, occupation by 2008 will be 2,690,512 for all industries. It is expected that the word processor and typist occupations will experience a decrease in the number of people employed; 20% decrease is anticipated (Bureau of Labor Statistics, 1999). According to the Louisiana Department of Education (1998) and the Louisiana Department of Labor (1999), some of the administrative support occupations would

experience growth. These include clerical supervisors; receptionists and information clerks; and medical secretary occupations.

R. Tarver (personal communication, December 15, 2000) stated a follow-up study of Northwestern State University (NSU) Office Information Systems' (OIS) graduates from fall 1997 to spring 2000 indicated that all but one of the graduates are employed in administrative support occupations in Louisiana. This information was supported by an earlier study of 1992-1996 NSU OIS graduates—all graduates were working in Louisiana (Creighton & Kilcoyne, 1998). B. Kleen (personal communication, August 29, 2001) noted similar findings of Nicholls State University's information systems graduates. Most graduates remained in the immediate area of Thibodaux, Louisiana.

B. Kleen (personal communication, August 29, 2001) noted that Nicholls State University information systems' graduates were employed in area hospitals, legal and medical offices, schools, and small business offices. Job titles included office manager, administrative support professionals, and software support professionals. Creighton and Kilcoyne (1998) found that NSU graduates' job titles included secretary, caseworker assistant, career services assistant, bookkeeper, legal secretary, customer service, and loan supervisor. W. Creighton (personal communication, December 12, 2001) stated that NSU's OIS degree program focuses on eight administrative support occupations' clusters because the majority of the graduates are working in these occupations (W. Creighton, personal communication, December 12, 2001).

Changes in Job Titles and Tasks

Burton, Shelton, and Jennings (2001), Chronicle Guidance Publications (1999), Cooper (1999), Herbert and Hosler (1997), International Association of Administrative Professionals (n.d.e), Odgers (1997), and Quible, 2001 stated that job titles and duties held by office occupation workers have expanded as a result of new technology. In the past, the office occupation workers held such job titles as receptionist/clerk, secretary, and executive secretary. Today, office occupation workers might hold these traditional job titles and other titles such as administrative assistant, senior secretary, executive secretary, desktop publishing/graphics specialist, production word processor, administrative receptionist, data/order entry clerk, and office manager.

Herbert and Hosler (1997) and Cooper (1999) noted that administrative support occupations workers perform job tasks that are both traditional secretarial and technology-related tasks. For example, some traditional job tasks might include answering and screening telephone calls, making travel arrangements, arranging meetings, and sorting and routing the mail. Some technology-related job tasks include using the Internet, using software application packages, using online computer services and using manual and electronic calendars (Administrative Development Institute, 1994; Kerka, 1995; Martin, 2001).

The International Association of Administrative Professionals [IAAP] (n.d.f) described the daily activities performed by a 21 st century administrative assistant as

(a) developing a production report using spreadsheet software;
(b) preparing charts, slides, and handouts for a management presentation;
(c) corresponding via phone, fax, or e-mail with clients all over the world;
(d) researching a topic on the Internet;
(e) coordinating a videoconference;
(f) scheduling an airline flight and purchasing tickets over the Internet;

(g) supervising and training a coworker; and,
(h) effectively representing management at a meeting" (A typical day for today's administrative assistant can include section, para. 3).

The Chronicle Guidance Publications (1999) and Bouchey (2001) described similar activities performed by secretaries in the workplace.

Bouchey (2001) stated the skills needed by secretaries included management, software applications, organizational, Internet and Intranet communications, research, and electronic record keeping. Adams (2001) reported similar findings in the Houston, Texas area. Texas employers were seeking secretaries with software application skills especially Microsoft Word, PowerPoint, Access, and Excel. Also, these workers need to be able to greet customers, type e-mails, use the Internet, and manage databases. The most frequently used software application packages, Microsoft Word and Excel, were used by office workers in Maui, Hawaii; however, desktop publishing software was not used frequently (Pezzoli, Lum, & Meyers, 1999). In Maui employers rated computer-related and communication job skills as most important and shorthand skills, especially in the private sectors, as least important for office workers. IAAP (n.d.b, n.d.e) also noted some skills in great demand in the workplace include developing and maintaining company's web site, software training, organizing and planning meetings/conferences, conducting research using the Internet, and supervising of other people.

A need exist for administrative support occupation workers. These workers' job titles, duties and responsibilities are expanding as a result of technology. To provide relevant job skills in existing courses or to develop a new course, educators must seek the valuable input from business and industry.

Knowledge, Skills, and Abilities of Workers: Perceptions of Business

Several researchers conducted workplace studies to determine knowledge, skills, and abilities required of office workers (Akeyo & Pollard, 1992; Chalupa, 1988; Forde, 1987, 1988; Moses, 1988; Rodriguez, 1989; The Vocational Technical Education Consortium of States [V-TECS], 1996). Information was gathered from employers (Akeyo & Pollard, 1992; Arzy, 1992; Forde, 1987; Moses, 1988; Rodriguez, 1989) and employees (Chalupa, 1988; Dirks, 1988; Edwards, 1989; Moore, 1993; Rodriguez, 1989; V-TECS, 1996).

Employers' Perceptions. Arzy (1992) found that northern Wyoming businesses were using IBM or IBM-compatible computer systems and 40% reported that their computer systems were connected to a local area network. Over half of the employers wanted their potential office workers to have some post-secondary education and some work experience. It was noted that the size of the business did not affect computer use and 94% of the businesses reported using computers to perform office tasks.

Forde (1987) surveyed 595 personnel directors to determine the importance of competencies needed by four-year office administration graduates and their perceptions of the graduates' degree of preparation. Using a Likert scale, the respondents rated 76 competencies clustered into seven major categories. The categories were personal characteristics, management skills, basic knowledge and skills, specific job skills, communication skills, machine operation, and automated office skills. A comparison was conducted to determine if a difference existed between their perceived importance

of each competency and their perception of the graduate's degree of preparation of each competency.

Akeyo and Pollard (1992) surveyed Fortune 500 managers to determine telecommunication skill needs. Managers identified the telecommunication competencies/skills needed by the workers; the job title of the workers who needed the telecommunication competencies/skills; and their satisfaction level with the telecommunication competencies/skills of the office workers. Also, they identified the types of employee-based programs used to provide training for office workers and made skill requirement recommendations for secondary and post-secondary programs.

Rodriguez (1989) surveyed executive officers (CEO) and executive secretaries of manufacturing and service companies to identify non-technical competencies needed by executive secretaries to perform their jobs and to determine the perceived importance of each non-technical competency to the performance of the job. Participants completed a questionnaire consisting of 145 non-technical competencies clustered into categories—communication, office management, human relations' competencies, and personal and professional traits.

Both the CEOs and executive secretaries indicated that 142 of the 145 competencies are essential for a successful job performance. Communication and personal and professional traits competencies received the highest ratings. The supervisory and administrative competencies received lower importance ratings. Secretaries felt least prepared in the supervisory and administrative competencies and employers felt a need existed for training in these competencies (Rodriguez, 1989).

Kozlowski (1998) noted that an analysis of employment ads indicated employers want administrative support workers with Internet and e-mail skills as well as knowledge of presentation and graphics software. The secretary job title appeared to have lost its number one ranking. Also, traditional secretarial skills have increased as job requirements. Again, shorthand and dictation skills were on the desired skills list of employers. This analysis suggested that employers want traditional secretarial skills and technology-related skills (Kozlowski, 1998).

Employees' Perceptions. Dirks (1988) surveyed incumbent professional secretaries in Wichita, Kansas, to determine the effect of organization size on the workers' computer-related job tasks. The results indicated that secretaries in large businesses (299 or more employees) spent more time producing letters and reports, editing final draft copy submitted by other people, and assembling form letters sent out over the signature of supervisors than secretaries in small companies (under 299 employees). No other significant size-related differences existed.

Moses (1988) collected skills, knowledge, and work attitudes data from Lansing employers and incumbent, first year entry-level office employees. Specifically, the researcher sought to determine if significant differences existed between the perceptions of the groups according to the size of the business office and the type of business organization. The results indicated significant differences did exist between the perceptions of the groups in the areas of word processing, data processing, keyboarding/typing, work attitudes, and computations. Also, significant differences were found among the respondents based on the sizes and types of business offices.

Edwards (1989) gathered data from Aluminum Company of America secretaries to determine the factors needed by people seeking these secretarial positions with implications for instructional considerations for business education programs. After an analysis of personnel records, career notices, and job descriptions, the researcher identified those factors that appeared to be needed by students who wish to obtain a top-level secretarial position. They included having more than a high school diploma, having prior work experience, and possessing functional, administrative, human-relations, problem solving, and supervisory skills. The secretaries had moved up the secretarial career pathway in a pattern similar to the executives of the organizations.

Moore (1993) conducted a study to identify the competencies needed by entry-level administrative workers to obtain jobs, bookkeepers, clerk-typists, file clerks, general clerks, secretaries, stenographer, or typists, in the Pittsburgh, Pennsylvania area. The competencies were derived from The Vocational Technical Education Consortium of States competencies. Bookkeepers and clerical and secretarial workers completed separate questionnaires rating the importance of each competency to the performance of their jobs and indicated how frequently they used the skills in the performance of their jobs. The clerical and secretarial workers indicated that the important competencies performed daily were clustered into four categories—receive, interview and inform people; prepare documents, correspondence and reports; maintain files, records and logs; and perform word processing skills. There was little difference found among the performed competencies of workers by job titles.

In a study of the members of the Professional Secretaries International Association (PSI) and non-members, The Vocational Technical Education Consortium

of States (V-TECS) identified skills and developed skill standards for the administrative support occupations. V-TECS (1996) has been "a leader in the development of industry guides and curriculum frameworks for over 25 years" (p. 1).

PSI members were sent surveys and asked to give a copy to a non-PSI member. Part one, included demographic items: job title, years of employment, level of education, salary range, age category, second language, number of executives supported, type of industry, number of employers, and status of business/industry operation [national or international or local/state]. It was reported that the typical administrative support occupation workers' job titles were either secretary or administrative secretary. These workers had more than a high school diploma; some college education. These workers fit into the age category of 35 to 49 years and had worked in the field for 10 to 20 years. Most of the respondents worked in the manufacturing, service and finance industry. They reported the size of their companies to be large (more than 2,000 employees) and the scope of the organization was reported as international (V-TECS, 1996).

Part two, duties/tasks, requested participants to respond either yes or no to the performance of 143 pre-selected tasks/duties. These tasks/duties were grouped under two categories: tasks/duties required of all office occupation workers and tasks/duties specific to the legal, executive, and medical secretary. The participants did not indicate the frequency of use of each task/duty, the importance of each task/duty, nor the percentage of time devoted to each task/duty on the job. Only legal, medical, and executive secretaries completed the tasks/duties specific to the legal, executive, and medical secretary section (V-TECS, 1996).

Part three, workplace skills, asked participants to indicate which skills were used on a daily basis and whether entry-level employees should have the skill. Part four, equipment and software, asked the participants to indicate their use of certain equipment and software in the performance of their jobs. Almost all the respondents indicated that they used file cabinets, copying machines, electric typewriter, personal computers, calculators, multi-line phones, storage cabinets, fax system, and laser printers in the performance of their jobs. A variety of application software packages were used in the performance of their jobs. The most frequently used application packages were word processing, calendaring/scheduling, database, network, spreadsheet, and customized. Skill standards were developed and published from the findings (V-TECS, 1996).

In another study, Chalupa (1988) sought to determine the types of technology used by secretaries on the job and if these types of technology were included in the curriculum by educators. The secretaries indicated their current or future use of pre-selected technologies in the performance of their job. For example, the secretaries indicated whether they had knowledge of, use of, and available for use of each technology. If they were not using the technology they were asked to indicate whether they anticipated the implementation of the technology in the next five years. The results indicated that the secretaries had knowledge or used all the technologies.

The professional secretaries indicated they had knowledge of or used the technologies—optical character reader, electronic mail systems, facsimile, audio conferencing, video conferencing, computer conferencing, communicating blackboards, voice mail systems, computer-based message systems, telex/TWX, and communicating

copiers. Significant differences existed between the proportions of the responses with regard to 11 of the 15 technologies used or available for use by the secretaries when compared to the inclusion of these technologies in the curriculum at the operational/or competent level. This finding suggests that professors should consider the inclusion of these technologies in the curriculum (Chapula, 1988).

Related Office Environment Studies

Several researchers have conducted related office environment studies (Arneson, 1989; Oswalt & Arn, 1989; Redmann, Seaward, & Griffin, 1989; Rickman, 1987; Rickman & Behymer, 1989). Arneson (1989) surveyed affiliated members of the National Association of Temporary Services to analyze technology's impact on employment, particularly in the office occupations. The study concluded that office technology has not caused a decrease in demand or deskilling of office workers. These occupations were predicted to be the fastest-growing temporary help occupational segment in the future. Also, the workers were in high demand. The typical temporary office worker was a white female between the ages of 24-34 with an education above a high school diploma. The most demanded position was word processing and these workers received the highest salaries. Future office workers will need traditional secretarial skills, except shorthand, and technology-related skills such as word processing, spreadsheet, databases, modems, networks, desktop publishing, and facsimile. The findings indicated that current office workers lack these skills.

Rickman (1987) and Rickman and Behymer (1989) conducted a Delphi study to identify emerging competencies needed by information processing employees for employment in the workplace by the year 2000. The Delphi panel consisted of 28

educational practitioners, business practitioners, research- and development-automation specialists, and automation futurists. The findings indicated that none of the competencies were considered to have high priority as an emerging competency for information-processing employees in the year 2000. They identified four competencies as a high priority/high consensus combination with an inconclusive-emerging status. The highest priority was given to the competency concerning inter-relatedness of technologies. However, they questioned the need to be aware of the inter-relatedness of "all areas" in using advanced technologies. The other three competencies given a high priority/high consensus combination with an inconclusive-emerging status were: (1) inputting data, executing programs, and maintaining decision support system; (2) using fluently various input devices such as keyboard, mouse, digitizer, voice); (3) and applying advanced keyboard formatting techniques and creative art designs in the preparation of reports, messages, and publications with a sense of the graphic elements.

Redmann, Seaward, and Griffin (1989) surveyed 6,000 Louisiana firms to identify current and anticipated technology used in the workplace. Specifically, they sought information in the area of computer equipment and programs. Findings indicated most very small and small business employees used word processing software. The anticipated use of database applications was indicated as need for very small business firms. Almost half the small business firms stated word processing skills were a prerequisite employment skill. Small businesses indicated that employees were required to do more database and spreadsheet applications than the employees of very small business firms.

Oswalt and Arn (1989) surveyed Fortune 500 industrial and service companies to identify microcomputer and office automation competencies needed for entry-level lower to middle management employment. The competencies listed on the questionnaire were developed from a review of fifteen office automation, microcomputer applications, and computer literacy textbooks. It was divided into two parts--Competency Ranking and General Information. In the General Information Section, participants provided information that included the type of business, the size of computer, the number of microcomputers and office automation equipment, the use of applications software packages, training methods, and the company software and hardware policies. Each competency was rated using a likert-type scale that ranged from 1 (not important) to 4 (essential).

Findings indicated that none of the competencies were rated as important or essential to employment. Twenty-three competencies were rated as useful to important for employment. An important competency was defined as a definite plus in obtaining entry-level lower to middle management employment. A useful competency was defined as a nice to know competency. If a person lacked knowledge of this competency they could still obtain employment. Thirty-six competencies were rated as not important to employment. A not important competency was defined as not necessary for entry-level lower to middle management employment (Oswalt & Arn, 1989).

Local and Statewide Office Skills Studies

Recently a few researchers have conducted local and statewide studies to determine required and needed knowledge, skills and competencies of office workers

(Anderson & Griffin, 1994; Butts, 1993; Consortium for Education Research and Technology [CERT], 2000; Haff, 1993; Henry, 1994; Holmquist, 1992; Miller, 1999; Peters, 1990; Vincent & Williams, 1993). The Consortium for Education Research and Technology [CERT] (2000) conducted a recent Louisiana business/industry skills-based study. The members of the CERT are individuals representing North Louisiana institutions of higher education. The purpose of the survey was to determine what skills employees needed to be successful in the work place. Specifically, they sought to identify ways that education and business and industry training providers could prepare North Louisiana workers to meet the technology skills demands of the business community (CERT, 2000).

In order to ensure that all stakeholders were represented in this study, CERT used several methods to collect the required skills data and identify available educational/ training resources. These included focus groups, face-to-face interviews, telephone calls, written correspondence and electronic mail. An on-line survey was developed and posted to gather information about the skills needs of employers. It consisted of 240 plus questions: current and future hiring needs, educational requirements of positions, and required skills needs of workers. Twenty participants completed the on-line survey (CERT, 2000).

Fitzgerald (2001) stated the results of CERT's survey indicated that north Louisiana employers expected workers to have basic ninth grade level or above math and reading skills. Also, employers indicated other necessary skills: "solving problems, communicating in writing and in person, using a computer for word processing and other office tasks, and the ability to collaborate in diverse groups" (p. 17A).

Holmquist (1992) conducted a three-year study of secretaries to identify issues and trends affecting office workers. They reported using IBM or IBM compatible computer systems and different software packages such as word processing, database, and spreadsheet. The most frequently used software packages were WordPerfect, Lotus, and WordStar. Almost half of their time was spent writing letters and memos. They also performed data processing and filing tasks. It was noted that in 1988 only 17% of the secretaries were using electronic mail; in 1990 63% were using it.

In a study of Northwest Arkansas office workers, Butts (1993) sought to determine the skills and competencies needed by entry-level employees. Employees used either IBM or IBM compatible microcomputers and WordPerfect. Computer literacy, spelling, typing speed and accuracy were also important. Employees must also be able to work independently. It was noted that a person's ability to take shorthand is not a prerequisite skill for employment.

Haff (1993) surveyed South Carolina personnel directors and department chairs of two-year post-secondary schools to identify computer competencies needed by secretaries and administrative assistants for entry-level employment and to determine if these computer competencies were included in the degree programs. The personnel directors rated three of the five competency areas as prerequisites of entry-level employment. These were word processing, spreadsheet, and file maintenance. The department chairs indicated these three competency areas were taught in their programs.

Peters (1990) surveyed business educators and secretaries to identify essential word processing competencies. The researcher compared the responses to determine if any significant differences existed.

In the first phase, a panel of experts—business educators and professional secretaries rated the importance of 191 word competencies. Ninety-one competencies were rated as essential to the performance of their job and these competencies were included in a questionnaire (Peters, 1990).

In the second phase, ninety-four secretaries rated the 91 word processing competencies as essential, important, or unimportant to the performance of their job. Findings indicated only 58 of the 91 competencies were considered to be essential. A comparison of the response ratings of participants in Phase I and II seemed to indicate no significant difference among 22 competencies. Also, the findings suggested that a disagreement did exist between the experts (Phase I) and the secretaries (Phase II) with regards to which word processing competencies should be included in the curriculum (Peters, 1990).

Henry (1994) surveyed 1985-1991 secretarial graduates to determine the impact of technology on office positions especially those secretarial positions in the legal, medical, executive, school, and word processing occupations in New York City. Over half of the respondents were recent graduates. They worked for firms of varying sizes—1,000 or more; 999-600; 599-300; and 299 or less workers. Almost one-third of the graduates had been promoted to some level of management.

Findings indicated executive, legal, word information processing and school secretaries used stenographic skills on the job. More recent school secretary graduates and those who graduated over six or more years ago used shorthand than those who graduated 3 or 5 years ago. Over half of the legal secretaries and 50% of the executive secretaries indicated using shorthand on the job (Henry, 1994).

Employers gave keyboarding tests, 3- or 5-minute time writings on regular or electronic typewriters instead of computers or word processors. Therefore, keyboarding skills were important. Almost all the secretaries used photocopying machines, facsimile, and computer on a daily basis. Most of them did not use the Dictaphone. Over half of them indicated using the word processing software package, Word Perfect 5.0 and 5.1 (Henry, 1994).

The majority of their time was spent answering the telephone, composing letters, memos, and other documents, handling clients, maintaining records, scheduling appointments and maintaining calendars, planning meetings, and maintaining financial records. Almost one-fourth of their time was spent on planning itineraries and organizing their employer's day. The remaining time was spent on other activities such as recording minutes, recruiting, purchasing, maintaining inventory control, conducting research, using the library, reading maps, coordinating fund-raising activities, screening mail, maintaining confidential information on employees, bookkeeping (billing), assisting other employees, conducting follow-ups, and training others (Henry, 1994).

Miller (1999) sought to identify the amount of time administrative support personnel spent performing or completing specific job-related tasks. The facsimile questionnaire was divided into five areas: manager-specific services, administrative/ secretarial duties, extended meeting activities, customized projects, data management, specialized tasks, and other. Workers indicated the amount of time that they allocated to each task during a one-week time period. Also, they provided demographic information: name of company, job title, years with current company, average number of annual training days/years, work week hours, number of managers supported, and number of

staff, other than managers, supported. Findings were compared to a nationwide study conducted by Norrell Corporation, an Atlanta-based provider of staffing and outsourcing services. The respondents of the Norrell study were users of administrative support personnel (Miller, 1999).

The findings of both studies indicated that administrative support personnel were spending the majority of their time on manager-specific and administrative/ secretarial tasks. Also they were spending a lot of time on customized projects and data management job tasks; 16% and 14% respectively. These findings suggested that the nature of work for the administrative support personnel was changing. In the Norrell study, users of administrative support personnel were asked if their administrative support personnel had one extra free hour in their day what would the user do with the hour. The most frequent answers were: have the administrative support personnel help with special projects and have the administrative support personnel receive more computer training (Miller, 1999).

As employees continue to send and receive documents and compose letters and proposals from their personal computers, administrative support personnel will continue to see a shift in job tasks. Predicted shifts in the job tasks will be toward the areas of customized projects and Internet research (Miller, 1999).

Anderson and Griffin (1994) surveyed South Georgia companies to identify word processing competencies used by office personnel. Forty-seven word processing competencies were rated using a 5-point likert-type scale. Almost half of the competencies were rated either extremely important or important. The most frequently used application software packages were WordPerfect and Lotus 123. They used IBM

or IBM compatible hardware and the operating systems software, MS-DOS. Typewriters were still used in the office (Anderson & Griffin, 1994).

Vincent and Williams (1993) surveyed 1981-1991 administrative office systems' graduates to determine the skills required in obtaining a job, training needs, and major job responsibilities. The respondents provided demographic information: job titles; industry classification, and current employment status. A variety of job titles and types of industries were listed.

The respondents listed keyboarding, word processing, writing, computer and machine transcription skills were required for employment. They produced letters, memos, reports, statistical documents, manuals, and legal documents using typewriters and word processors. Microcomputers and mainframes were also used. Software applications packages used included word processing, spreadsheet, database, accounting, graphics, desktop publishing, and scheduling. Computers were used for record management, accounting, electronic mail, electronic calendaring, desktop publishing, and multi-media presentations. Other job responsibilities included supervising other people, making decisions, and handling budgets (Vincent & Williams, 1993).

Current and Future Software and Equipment Needs

A few researchers have sought to determine the current and future software and equipment needs of businesses. Vincent and Ross (1998) sought to determine computer software needs required by the local business community in Louisiana, specifically, the Acadiana area. Eight parishes form the Acadiana area in south Louisiana. They surveyed the top 100 privately held businesses in the area as defined by the Times, a

local newspaper based in Lafayette, Louisiana. The Times ranked the businesses according to revenue.

Findings indicated the most frequently used operating system software was Windows 3.1 or MS-DOS followed by Windows 95 and UNIX. Over half of the respondents used word processing software and database programs. The most frequently used packages were Microsoft Word, WordPerfect, and Access. Almost all of the respondents indicated that they used spreadsheet software programs; Excel was used most often. Desktop publishing software programs were used by less than half of the respondents. Almost all the businesses used an accounting-type software program; however, the respondents listed different software names. It was recommended that educators poll business and industry on a regular basis to determine their computer software needs (Vincent & Ross, 1998).

Gerber, Hamburger, Buddy, and Nowka (1999) surveyed western Oklahoma business organizations to determine hardware and software changes in the office environment from 1993 to 1998. Using a mailed questionnaire, respondents indicated their technology use. A comparison of results was used to determine if changes had occurred. The respondents' working knowledge was also compared.

The questionnaire consisted of demographic information, type of hardware and software used, and type of work performed using the technology. Findings indicated a decline in the use of typewriters in the office; however, over three-fourths of the respondents still used typewriters in 1998. The type of computer configuration used in the office environment seemed to indicate a decline in the standalone personal computer and an increase in the local area network. Most offices used IBM or IBM clones.

Offices had increased the use of Windows-based versions of the disk operating environment and decreased MS-DOS. Almost half of the respondents in 1998 indicated that the computer systems were maintained internally. Almost half of the respondents in 1998 indicated that they taught themselves how to use software packages. They indicated that current office employees lacked basic communication, English, math, presentation, and telephone skills. The use of advanced software skills was also indicated as a deficiency (Gerber, et al., 1999).

Shelly, Cashman, and Vermaat (2002) and T. J. O' Leary and L. I. O'Leary (2002) reported the most popular software application packages used by employees to be Microsoft Office and WordPerfect Office suites. The most popular operating system for personal computers was listed as Microsoft Windows. (See Appendix C)

Since 1988 new technologies have entered into the office environment. Monitor, Briere, and Heckart (2000) described one of the newest communication technologies available to business organizations, instant messager. Instant messager operates like the walkie-talkie. Instant messagers spread information throughout an organization faster than using e-mail, reducing expenses of long-distance cost, and improving internal communication. As new technology emerges, the knowledge and job skills of office workers will change.

Kruk (1996) described the types of technology used by office workers. Such technology included desktop videoconferencing, artificial intelligence, and voice recognition. They would use local area networks and wide area networks to complete job tasks. To perform their jobs, they would use portable laptop computers, video/audio teleconferencing equipment, optical scanners, smart electronic information display

boards, and hand-written input tables. Employers are searching for people with strong computer and telecommunication skills. He stated that office workers must keep up to date with technology changes by attending seminars, taking courses, and reading computer and communications magazines.

The above mentioned research seems to indicate that administrative support occupation workers need advanced word processing, spreadsheet, database, and desktop publishing skills as well as skills in training and supervising workers. Also, skill needs vary according to organizational size and location of the organization. Educators must provide administrative support occupations graduates with relevant knowledge and job skills. Therefore, educators must continue to develop and update curriculum to be reflective of current and future skills.

Knowledge, Skills, and Abilities of Workers: Educators' Perceptions

Researchers have conducted studies to determine educators' perceptions of knowledge, skills, or abilities needed by administrative support occupations workers. Some studies have examined whether educators and employers agree about the importance of knowledge, skills or abilities.

M. Noble and P. Noble (1987) surveyed California community colleges and employers to determine if the office education programs should be updated to meet the changing needs of the administrative support occupations. The results concluded that educators over estimated the importance of traditional office skills such as word processing and office procedures in the curriculum. Employers indicated a greater emphasis should be placed on students' oral and written communication skills. Employers expected the educational institutions to provide students with opportunities

to use communication and problem-solving skills. They stated that effective employees have these two skills and education was failing in this area. It was noted that the communication between educators and employers was more of a one-way street not a two-way street. It appears that educators have not completely understood industry's need for employees with good communication skills. If the message has been received and understood, then educators have not acted upon the request (Noble & Noble, 1987).

Chalupa (1988) surveyed educators and secretaries to identify the types of technology used by secretaries on the job and if these types of technology were included in the administrative support occupation curriculum. The professors indicated the current and future coverage of each technology in the curriculum. For example, they indicated whether electronic mail system was included at the awareness, operational, competent level, or not an objective at all in the curriculum. All 15 technologies were included at the awareness level in the curriculum, except for two, internal databases and electronic typewriters which are included at the competent level (Chalupa, 1988).

Like M. Noble and P. Noble (1987), Chalupa (1988) found differences between the responses of the educators and the secretaries. Significant differences were found for five technologies that were included at the awareness level in the curriculum and the secretaries' knowledge of these technologies. Also, significant differences were found between the proportions of the responses with regard to 11 of the 15 technologies that are used or available for use by the secretaries compared to the NABTE professors including those technologies at the operational/competent level in the curriculum. For future research endeavors, it was suggested that researchers seek to determine how

institutions modify their course offerings to meet the demands of the workplace especially the technological needs (Chapula, 1988).

Peters (1990) conducted a study to identify word processing competencies perceived to be essential by secretaries and educators. The expert panel rated 91 of 191 competencies as essential to the performance of their jobs and these 91 competencies were included in the questionnaire. The secretaries rated the importance of the 91 competencies using a Likert scale-essential, important, or unimportant to the performance of their job. The secretaries rated 58 of the 91 competencies as essential to the performance of their jobs. It was noted that there appeared to be a disagreement between the experts and the secretaries' ratings of the competencies (Peters, 1990).

Davis (1992) conducted a study of members of the Secretarial/Clerical Trainers Network of the American Society for Training and Development to identify perceptions of business and industry trainers regarding the required skills and knowledge of employees. The results indicated that training providers should place more emphasis on computer/technology related applications than on understanding the concepts and terminology. More emphasis should be placed on keyboarding accuracy than typing speed. Learning how to adjust to change and learning new concepts should receive more emphasis than applying supervisory skills such as planning, organizing, directing, and controlling.

Haff (1993) conducted a study to identify computer competencies needed by administrative professionals, especially by secretaries and administrative assistants, for entry-level employment and to determine if these computer competencies are currently taught in degree programs at the post-secondary level. A three-round Delphi technique

was used to rate 172 computer competencies in five major categories. Personnel directors or their designee from 46 business organizations and department chairs of two-year post-secondary schools in South Carolina were chosen as participants. Business participants rated three of the five competency categories as required for entry-level employment. These three categories included 11 general file maintenance competencies, 19 word processing competencies, and 19 spreadsheet competencies. Department chairs indicated that three required entry-level employment competency categories were taught in their programs. These included 11 general file maintenance competencies, 14 word processing competencies, and 14 spreadsheet competencies.

Skill-Related Studies Conducted by Other Disciplines

Jiang (1994) surveyed business and industry recruiters to determine the skill expectations of employers of new college graduates and if the skill expectations are changing. Respondents used a questionnaire to rate the importance of the skills from 1 (not important) to 3 (most important). Communication, management, and motivation skills were identified as most important for the information systems (IS) and the non-information systems graduates. Business and organizational knowledge and computer skills were rated as least important for both graduates. People skills were ranked least important for IS graduates and analytical skills were least important for non-IS graduates.

Jones and Berry (1995) surveyed college students to determine their information technology knowledge and how they obtained this knowledge. They collected data from students enrolled in one of nine introductory required university courses using a questionnaire. To identify the student's use of technology, they used a 7-point likert

scale with 1 (have never heard of) to 7 (use daily). To determine how students learned about technology, they used a likert scale ranging from 1 (strongly disagree that this source used to gain information about technology) to 7 (strongly agree that this is a source used to gain information about technology).

Data was analyzed to determine whether a student's background and experience with computers differed with respect to computer usage, sources of learning, and comfort level with personal computing tasks. Findings indicated that almost half of the students had used computers prior to entering the university, owned a personal computer, and had been exposed and used computers in courses taken at the university. Students used word processing packages, games, spreadsheets, and window packages. They also used cell phones. The primary learning sources were: first, newspapers and magazines; second, friends/colleagues; third, television news; and fourth, instructional classroom. Their information technology knowledge was limited to the technologies that were associated with basic productivity such as word processing programs. They used the information superhighway—Internet—for research. Also, they used other communication software and desktop publishing packages (Jones & Berry, 1995).

Roth and Duclos (1995) conducted a study to determine computer-related skills used by recent graduates. They surveyed 1991-1993 College of Business graduates who were working in entry-level positions by mail questionnaire. Management information systems graduates were eliminated from the population. Almost all the graduates used computers in their work activities. To perform their jobs, they used word processing, spreadsheets, and databases programs. The business organization provided little or no training regarding the use of these programs. The graduates indicated that they were

expected to utilized technology on the job and create and develop new ways of using technology to increase productivity on the job. These findings were used for curricular revisions.

Siegel and Sorensen (1994) surveyed members from the Institute of Management Accountants (IMA), Financial Executive Institute (FEI), and the American Institute of Certified Public Accountants (AICPA) to determine the required knowledge, skills, and educational level needed by accountants. IMA, FEI, and AICPA members were high-level accounting and financial executives and excluded those members who worked for public and consulting accounting firms or educational institutions.

Findings indicated that entry-level management accountants lacked the appropriate educational knowledge and skills necessary to enter the profession. They indicated that the preferred entry-level management accountants needed at least a bachelor degree in accounting. Also they indicated the importance of major-related work experience prior to permanent employment. It was noted that job applicants who had participated in at least a six-month internship were more prepared to enter the profession than those job applicants who had not completed an internship. Educators must gain a better understanding of the needs of their customers (employers) and create and revise degree programs to meet the customers' needs (Siegel & Sorensen, 1994).

Post-Secondary Curriculum Studies

Several studies have been conducted to determine the skills, knowledge, and computer and software packages that should be included in the administrative support curriculum at the post-secondary level (Herbert & Hosler, 1997; Holmquist, 1992; Sormunen & Adams, 1999).

Herbert and Hosler (1997) surveyed University of Wisconsin at Whitewater graduates to evaluate the office systems program. In the years of 1982, 1987, and 1992, the researchers collected information from graduates using the survey research design. Findings indicated that graduates were employed consistently in the service, financial, and manufacturing sectors. All graduates indicated that the most beneficial required course in acquiring their positions was typewriting/document processing. The required communication course was also ranked among the top four courses in 1982 and 1987 and as number 2 in 1992 (Herbert & Hosler, 1997).

Another finding indicated that the job activities completed by respondents in regard to amount of time spent were a very diverse list. The activities were grouped into seven major categories--analysis/problem-solving, computer, customer/client, document preparation, financial, software, and supervision activities. It was recommended that technology-related and communication activities be integrated throughout the courses of the degree program. Also, it was recommended that planning and conducting training courses be developed and implemented into the curriculum (Herbert & Hosler, 1997).

Sormunen and Adams (1999) surveyed graduates to obtain information to determine if administrative support workers provided training to other workers. Graduates of the associate and bachelor degree programs in administrative office support for the period of 1988-1996 from two mid-western state universities were included in the study. Findings indicated that office support personnel were providing on-the-job training sessions for other employees—subordinates, peers, and upper-level management—within their organization. These training sessions included technology especially in the areas of communication and application.

Since educators cannot determine exactly what types of computer programs students will use in the office environment, Holmquist (1992) recommended that educators should provide students with a generic type of computer application training and place more emphasis on decision-making skills. Also, it was recommended that educators stress the importance of word processing proficiency in producing letters and memos as well as placing an emphasis on working with data processing.

Curriculum Models Developed by Professional Organizations

Two organizations have developed models to be used by educators in the development or revision of curriculum for the administrative support occupations. Each curriculum model will be discussed.

The Professional Secretaries International (PSI) developed one of the latest administrative support occupation curriculum models in 1994. The PSI Model Curriculum for Office Careers (Professional Secretaries International [PSI], 1994) was developed to serve a guide for use by curricular developers and educators of the administrative support occupations degree programs. Over 25 courses with objectives and performance expectations are included in the document. Business and government representatives, secretaries, and educators validated the courses. Within the curriculum model, course names, objectives and performance expectations, textbooks and additional resource materials are recommended (PSI, 1994).

It was designed to allow educators to tailor individualized programs, thus creating beneficial models for all constituents. The curriculum has multiple entry and exit points for students. Educators can add or delete courses to meet student and employer needs. Some of the benefits associated with the use of this curriculum model

include: "articulated structure, flexibility, and competency- and technology-based nature" (PSI, 1994, p. 2). Fenner (personal communication, August 17, 2000) of International Association of Administrative Professionals (formerly PSI) indicated that a number of states had used the curriculum model. However, an exact number or the states' names could not be given.

It was noted that the PSI curriculum model should be revised in five years (PSI, 1994). Fenner (personal communication, August 17, 2000) indicated that this model was the latest version. She also indicated that the PSI curriculum model was becoming obsolete and there were no plans of updating the curriculum model (Fenner, personal communication, August 17, 2000).

The other model, Organizational and End-user Information Systems Model Curriculum (OEIS) (The Office Systems Research Association [OSRA], 1996), was developed by The Office Systems Research Association [ORSA]. ORSA appointed a curriculum revision committee to develop a curriculum model for use at the undergraduate level for organizational and end-user information systems students. The previous curriculum model was developed by the OSRA association in 1986 (The Office Systems Research Association [OSRA], 1996).

During the winter of 1994-1995, information was gathered from businesses to determine the knowledge, skills, and abilities requirements of information systems employees. Information was collected using the focus group method in 12 locations. Eleven courses were developed from the analysis of information. Each course included a course description, objectives, performance expectations, activities, and suggested textbooks. A draft copy was reviewed and critiqued by representatives from educational

institutions and businesses. The final copy was drafted and course topics included: assessment of organizational and end-users performance and training needs, selection and implementation of new technologies in the office environment, development of training presentations, and realistic application of knowledge, skills, and abilities through work-related experiences (ORSA, 1996.)

Curriculum Revision Process Used by Colleagues

Today educators are faced with the challenge of meeting the ever-changing knowledge and skills needs of business and industry while maintaining degree program requirements. How do educators update curriculum to meet the demands of business and industry?

Colleagues described the sources and procedures used by their departments or colleges to identify the current and emerging skills and knowledge needed by graduates. W. Dennis (personal communication, December 4, 2000), coordinator of the department of Industrial & Engineering technology (IET) at Northwestern State University in Natchitoches, Louisiana, stated that the accreditation standards of National Association of Industrial Technology (NAIT) are used to review their programs. V. Gentry (personal communication, January 24, 2001), acting chair for the department of health and human performance at Northwestern State University in Natchitoches, Louisiana, stated that their programs follow the standards established by National Council for Accreditation of Teacher Education (NCATE), North American Society for Pacing and Electrophysiology (NASPE), and the American College of Sports Medicine. N. Planchock (personal communication, January 24, 2001), dean of the College of Nursing at Northwestern State University in Natchitoches, Louisiana, stated that the nursing

faculty solicits curricular input information from a variety of sources such as accreditation agencies and local, regional, and national regulatory sources.

Another source used in the curricular revision process by colleges and departments are advisory boards (W. Dennis, personal communication, December 4, 2000; N. Planchock, personal communication, January 24, 2001; C. H. Ashe, personal communication, December 18, 2000; R. Mitchell, personal communication, December 12, 2000). These boards provide information about employment needs. Information collected is used to update or create courses.

Several colleagues reported collecting skill needs information through surveys and focus groups. N. Planchock (personal communication, January 24, 2001), R. Mitchell (personal communication, December 12, 2000), chair and professor of the College of Business at the University of Arkansas in Little Rock, Arkansas, and C. H. Ashe (personal communication, December 18, 2000), assistant department head for management, marketing, and business administration at the University of Houston—Downtown in Houston, Texas, reported that their programs collect information about skill needs of workers through alumni surveys. C. H. Ashe (personal communication, December 18, 2000), J. Russell (personal communication, December 12, 2000), W. Dennis (personal communication, December 4, 2000), and R. Mitchell (personal communication, December 12, 2000) collected data from business and industry surveys. C. H. Ashe (personal communication, December 18, 2000) and R. Mitchell (personal communication, December 12, 2000) solicit skill needs feedback from focus groups.

Another source of curricular feedback included a review of literature especially employment trends (C. H. Ashe, personal communication, December 18, 2000; J.

Russell, personal communication, December 12, 2000; R. Mitchell, personal communication, December 12, 2000; V. Gentry, personal communication, January 24, 2001). For example, after reviewing the U.S. Labor Bureau's employment trend data, J. Russell (personal communication, December 12, 2000) added a new course, System Analysis and Development, to the CIS program to meet the demands for the number one occupation in America for 2000-2003, system analyst. Also, V. Gentry's (personal communication, January 24, 2001) department sought information from other collegiate and departmental programs as a part of their curricular review process.

J. Russell (personal communication, December 12, 2000) noted that the computer information systems program at Northwestern State University (NSU) in Natchitoches, Louisiana uses the Information Systems (IS) 97 Model Curriculum and the 2001 Model to provide guidance in curricular revision. Nationally renowned educators from different states developed these models. To date, he stated that a defined revision procedure does not exist at NSU in the CIS department. He indicated the need to adopt a procedure and hoped that it would include a re-evaluation of the existing program every two years using a criterion of currency, marketability of current graduates, and emerging careers. He also stated that revising the curriculum is imperative to keeping CIS graduates current and competitive in the CIS job market (J. Russell, personal communication, December 12, 2000).

C. H. Ashe (personal communication, December 18, 2000), assistant department head for management, marketing, and business administration at the University of Houston—Downtown, indicated that the department does not have a predefined procedure for revising curriculum. The faculty members within the department make

the decisions about the deletion or modification based upon the collected information from several sources. The departmental curriculum committee reviews the course content and determines if appropriate adjustments are deemed necessary or if a new course should be created and implemented into the curriculum.

R. Mitchell (personal communication, December 12, 2000), chair and professor of the College of Business at the University of Arkansas at Little Rock, stated that their departmental subcommittee makes recommendations for revisions or deletions in the curriculum. Prior to forwarding the changes to the university curriculum committee, the program advisory committee evaluates changes.

Information collected from colleagues at Northwestern State University and other universities outside of Louisiana suggested that several sources are used to identify current and future needs of business and industry with implications for curricular modification. However, there appeared to be no defined procedure or model to guide disciplines in the curricular revision process.

Textbooks and Handbooks Used for Curriculum Development/Revisions

Curriculum development textbooks and handbooks have been written to assist educators with curriculum planning (McMahon, 1972; McNeil, 1996; Norton, 1992). McMahon (1972) and Prosser and Quigley (1968) noted that curriculum developers should form a partnership between employers and educators. Current and anticipated work skills and competencies needed by workers and the employer should provide occupational employment trends for educators. The educators can integrate the information provided by the business community and develop or revise curriculum to be reflective of the work place (McMahon, 1972).

Curriculum planners must be able to identify the needs of the immediate business community that their programs serve. McMahon (1972) and Prosser and Quigley (1968) suggested that curriculum planners consult business advisory boards and conduct a need assessment survey of the local business community and surrounding area. Do you need secretaries? Will your secretarial positions increase in the next year? Five years? This survey does not ask about required job skills and competencies. Curriculum planners must also survey the student body to determine manpower for the occupation. Vocational education programs must provide "knowledge and skills needed for entry into the labor market" (McMahon, 1972, p. 119).

Are we teaching students the required skills necessary to perform the job? Are we teaching students outdated and no longer required skills of the job? Norton (1993) noted that educators often teach "what they know best, what they were taught, what they enjoy teaching, what they have had experience with, what available textbooks happen to include, what an occupational analysis done elsewhere includes, and what a 3-to 5-year-old occupational analysis includes" (Norton, 1993, p. 2-3).

To help educators eliminate or minimize these "what errors", Norton (1992) recommended that curriculum developers conduct a very strenuous occupational analysis using the Systematic Curriculum and Instruction Development model (SCID). It has six-steps—“conduct needs analysis, conduct job analysis, conduct task verification, select tasks for training, conduct standard task analysis, and conduct literacy task analysis" (Norton, 1993, p. 3).

The SCID model uses the Developing A CUrriculum (DACUM) to analyze jobs (Norton, 1993). This approach is widely used in the United States, Canada, and other

countries as an effective method of job or occupation analysis. Researchers have utilized effectively this procedure in the analysis of professional, managerial, technical, skilled, and semi-skilled jobs or occupations. It involves a 2- or 3-day workshop with 5-12 expert workers analyzing their jobs. These expert workers create a profile of duties and tasks used to perform their jobs. The experts also define general knowledge and skills, tools and equipment, behaviors, and future trends needed. A trained facilitator provides assistance and leadership with monitoring the committee (Norton, 1998).

Norton (1993) stated that "a well-conducted job analysis provides solid answers to the question of 'what tasks do successful workers perform on the job?" (p. 3). From a job analysis he noted a curriculum planner should be able to develop or revise curricula relevant and reflective of the needs of business and industry (Norton, 1993).

Verification of job tasks should be submitted to a group of workers who are performing the job. Usually 50-100 people verify they are performing the tasks on the job, identify additional tasks, rank the importance of the tasks, and identify the difficulty in learning to perform the task. Norton (1993) stated that verified data should be analyzed and prioritized. Tasks are assigned a priority rating for program/training inclusion. The fifth step, conduct standard task analysis, he noted that the tasks are broken into the performance steps, the business performance expectation, occupational knowledge, attitudes, and safety requirements, and the tools, equipment, supplies, and materials used by the worker in the performance of the job (Norton, 1993).

The final and optional step, conduct literacy task analysis, is subdivided by knowledge areas: (1) communication skills (reading, writing, speaking, listening), (2) mathematics skills, (3) science skills, (4) computer skills, and (5) decision-making skills

(reasoning and problem solving). It was noted that the DACUM Enhanced Literacy Task Analysis (DELTA) should be used for this part of the analysis (Norton, 1993).

The tasks verification provides educators, administrators, and curriculum developers with a base to construct or modify relevant courses and programs. The final stage of the curriculum development process is the integration or implementation of the occupational tasks into existing or new curricula. Norton (1992) stated that most institutions convene a committee to determine the use of the DACUM findings in the curricula. Some universities reported using departmental committees and university-wide committees to evaluate curricular revisions (C. H. Ashe, personal communication, December 18, 2000; W. Dennis, personal communication, December 8, 2000; R. Mitchell, personal communication, December 12, 2000; J. Russell, personal communication, December 12, 2000).

DACUM findings provide educators, trainers, and employers the answer to the question "What should be taught?" (Norton, 1998a, p. 3). This approach assists educators, trainers, and employers in closing the gap between what skills are being taught in the classroom and what skills are being used in the real world. Also, it provides educators, trainers, and employers with relevant information about equipment, tools, skills, behaviors, and future trends of the job or occupations.

Impact of Institutional Constraints on the Curricular Revision Process

Educators are faced with a constantly changing office environment and providing relevant degree programs within the constraints of university policies and procedures—time and degree requirements. For example, according to the NSU General Catalog 2000-2001 (2000-2001) a student receiving an associate degree in office

administration must complete 61 hours of course work. This includes 31 hours of basic university course work such as English, math, and speech and 30 hours of office-related course work. A course is the equivalent of 3 credit hours; therefore, a student will take 10 office-related courses. Courses are required to meet 45 contact hours per three hours of credit.

Educational requirements limit the number of courses included in a degree program and the number of hours in a given day physically limit a degree program. In order to provide business and industry with personnel to fill existing and emerging jobs, educators must continuously strive to update and modify as well as create new courses to train workers. What do graduates need to know? What skills and knowledge do graduates need to perform the job? How do educators determine whether to update a course or develop a new one?

Accreditation Standards for Higher Education

Accreditation of educational institutions and programs has been viewed as a systematic way to assure quality educational activities. Some government agencies, foundations, employers, and scholarship commissions use the accreditation status as a major consideration for funding. Therefore, accreditation serves several groups: the public, the students, and institutions of higher education (American Assembly of Collegiate Schools of Business [AACSB], 1992; Association of Collegiate Business Schools and Programs [ACBSP], 1996, August; Council for Higher Education Accreditation [CHEA], 2001, September).

Accrediting agencies establish criteria for accreditation, arrange site visits, evaluate institutions and programs that desire accredited status, and publicly

acknowledge those universities, colleges, and programs, which have met their standards. Institutions of higher education must periodically renew their accreditation; thus, continuous self-study and program improvements must be maintained. Accreditation recognition of an institution or program by an approved accrediting agency documents that the institution or program is one that provides quality educational activities.

University administrators at Northwestern State University have set as a top priority the accreditation of all eligible programs (V. Crossno, personal interview, June 9, 1999). Louisiana institutions of higher education have anticipated that at a later date those universities and colleges with accredited programs will receive additional funds, Incentive/Performance--House Bill 1, Act 19, 1998, from the state legislature (V. Crossno, personal interview, June 8, 1999; C. Simpson, personal interview, June 9, 1999). V. Crossno (personal interview, June 8, 1999) further stated Dr. Randall Webb, President of Northwestern State University (NSU), believes that future funds for institutions of higher education in Louisiana will be tied to the number of accredited programs on campus. Thus, NSU has a major goal, accreditation of all eligible programs. Those programs that do not have accrediting agencies are participating in internal and external reviews of programs (V. Crossno, personal interview, June 8, 1999).

Another reason Louisiana universities and colleges have sought to obtain accreditation is to justify the existence of their programs (V. Crossno, personal interview, June 9, 1999). For example, the board can justify the elimination of duplicate programs that are not accredited.

Two national accrediting bodies for United States business programs are the Association to Advance Collegiate Schools of Business International (AACSB) and the Association of Collegiate Business Schools and Programs (ACBSP). Accredited programs must adhere to established standards and document integration of these standards into their degree programs (Association to Advance Collegiate Schools of Business International, 2001; Association of Collegiate Business Schools and Programs, 1996; C. Simpson, June 9, 1999).

The Association of Collegiate Business Schools and Programs (ACBSP) provide standards for program evaluation of four-and two-year schools and colleges of business. The ACBSP (1992) stated "the purpose of the accreditation standards is to establish educational thresholds to assist ACBSP member institutions in achieving academic excellence" (p. 1). The accreditation standards address areas that include curriculum and business and industry relations and others areas.

During the self-evaluation process programs must demonstrate knowledge of relevant work place issues as well the integration of these perspectives into their curriculum. Outcome measurements that provide this information include recent graduate and employer surveys and advisory board feedback (American Assembly of Collegiate Schools of Business, 1992).

Under the standard of business and industry relations, ACBSP (1992) states "the school or program must demonstrate that linkages to business practitioners and organizations exist that are current and meaningful" (p. 13). These linkages benefit both faculty and students. Business practitioners are a source of current and future job skill trends. This information is useful for updating and revising curriculum.

ACBSP (1992) stated, "an institution must have an outcome assessment program with documentation of the results and evidence that the results are being used for the development and/or improvement of the institution's academic programs" (p. 14). AACSB (2001) noted that the curriculum evaluation and revision process should include input from constituents—employers and graduates. Outcome measurements can include surveying recent graduates about their educational experiences and its relationship to their employment, surveying employer about graduates' performance on the job and surveying employers to identify knowledge, skills, and abilities needed by graduates for success in the field (AACSB, 2001; ACBSP, 1996).

By achieving and maintaining accredited status, collegiate business schools and programs provide assurance that their students are part of a quality educational program. Also it provides assurance that federal and state monies are spent on quality educational programs.

Skills Standards for Occupational Clusters

Discontented with the lack of knowledge, skills, and competencies possessed by the pool of potential employees, business and industry across the nation have voiced great disappointment with educational institutions. As a result educators, government officials and business and industry leaders have joined and created several groups to address their concerns. The groups' major focus was to determine the knowledge, skills, and competencies needed by current and future workers and establish nationwide standards to be utilized by both education and business and industry (Secretary's Commission on Achieving Necessary Skills [SCANS], 1991; National Skill Standards Board [NSSB], 1999; National Business Education Association [NBEA], 1995).

The Secretary of Labor appointed the Secretary's Commission on Achieving Necessary Skills (SCANS), composed of representatives from business, industry, government, and institutions of education. SCANS identified the current and future skills and competencies needed by potential employees to be successful on the job. This committee produced several reports (SCANS, 1991).

What Work Requires of Schools: A SCANS Report for America 2000 (SCANS, 1991) defined what employees should know and be able to do in order to succeed in the world of work today and in the future. Successful workers in a high-performance workplace must possess a concrete basis in communication, cognitive and computational skills. These workers must be able to read and write, speak and listen, perform calculations, learn, reason, think, make decisions, and solve problems. Finally, successful workers must possess personal traits such as responsibility, confidence, reliability, discipline, motivation, and trustworthiness. The five competencies that effective employees must utilize are "resources, interpersonal skills, information, systems, and technology" (SCANS, 1991, p. 6).

Skills and Tasks for Jobs: A SCANS Report for America 2000 (SCANS, 1992c) focused on identifying the SCANS competencies and foundation skills required by occupations. In phase one, the SCANS committee collected information from 15 occupations. From each occupation, three or four incumbent workers ranked the importance of the competencies and foundation skills. The administrative support occupations including clerical was one of the occupations selected for phase one. Information was solicited from three or four workers who held the title of secretary. In phase two, occupational information was obtained for 35 other occupations excluding

occupations included in phase one. For each selected occupation, the researchers gathered information from three or four workers.

The final report was entitled Learning a Living: A Blueprint for High Performance: A SCANS Report for America 2000 (SCANS, 1992b). Part one describes the economic choices facing the United States, defines workforce issues and makes several recommendations as the path to a high-performance future. The committee described ways that educators and business/industry should work cooperatively to create and maintain a high-performance economy that will sustain the country's standard of living. Part two provided educators, employers, and assessors with suggestions to assist them in providing opportunities for students to reach and maintain these high-level skills required of workers today and tomorrow.

In the United States it appears that an avenue to provide information about the changing work skills has not been established between business and industry and educational institutions. Or if an avenue has existed, educational institutions have not been responding to the skill demands of business and industry. Out of this need to develop educational programs that provide relevant work place knowledge arose the establishment of two federal initiatives, the School-to-Work Opportunities Act (STWOA) and the National Skill Standards Act. The major focus of these initiatives was to establish a "national framework for improving relevance and quality in education" (National Skill Standards Board [NSSB], 1998, p. 1). The STWOA “supports the development of systems that ensure that students have an opportunity to prepare for employment in broad occupational clusters or industries and to earn portable credentials that certify that they have mastered relevant skills" (NSSB, 1998, p. 1).

The implementation of the National Skill Standards Act created the need for the establishment of the National Skill Standards Board (NSSB). The board serves "as a catalyst to stimulate the development of a national system of voluntary skill standards and certifications" (NSSB, 1998, p. 1). The members, representatives from education, business, labor, government and civil rights organizations, promote the development of voluntary industry-based skill standards in partnership with other constituents—education, labor, and community stakeholders. “Skill standards are statements of the knowledge and competence required to perform successfully in the workplace” (Occupational Skill Standards and the School-to-Work Opportunities Act, 1997, p. 2). Also, the board assists with the identification of “occupational clusters that share common characteristics appropriate for the development of universal, portable skill standards through a voluntary partnership with academe, public and private organizations, and business and industry” (NSSB, 1998, p. 1).

In the development of skill standards a process called job analysis can be used. This process uses a group of incumbent workers and their supervisors to identify the “functional areas of responsibility in an occupation and the tasks performed in carrying out each function” (Occupational Skill Standards and the School-to-Work Opportunities Act, 1997, p.2). The skills list can be developed from current job descriptions or from scratch. Job data can be collected by watching workers perform their jobs and interviews. Verification of job tasks should be submitted to a large group of workers who are performing the job for validation (Occupational Skill Standards and the School-to-Work Opportunities Act, 1997).

By using occupational skill standards students will know which knowledge and skills are required and educators can determine what employers and students need for a specific occupation. Then, employers will know what their new employees can do and will be able to target training investments. Thus all constituents—educators, students, the general public, and business and industry—are provided with the assurance of a quality education being offered to students (Atkinson, 1997; National Alliance of Business, 2000; "Showing the Way…", 1995).

Educators must prepare students to enter the workforce equipped with required job skills. Atkinson (1997) described two publications that offer guidance and assistance to educators in answering the question: is the curriculum relevant in meeting the changing needs and demand of business and industry? The publications are the Standards for Business Education: What America's Student Should Know and Be Able to Do in Business and the Administrative Support Occupations Skills Standards.

Standards for Business Education: What America's Student Should Know and Be Able to Do in Business. This business education program standards publication is developed and endorsed by the National Business Education Association (NBEA) in 1995. It provides a framework for use by business education administrators and instructors to develop, update, and revise curriculum to be reflective of and meet the changing skill demands of workers. These standards describe what kindergarten through post-secondary (community or technical college) students should know and be able to do in business (National Business Education Association [NBEA], 1995).

Atkinson (1997) stated that secondary or postsecondary graduates should be able to:

- function as an economically literate citizen
- demonstrate interpersonal, teamwork, and leadership skills in all business settings
- develop career awareness
- select and apply technology tools
- communicate effectively as writers, listeners, and speakers in social and business settings
- use accounting procedures to make decisions
- apply the principles of law
- prepare to become an entrepreneur
- understand the relationship of different areas of business
- participate in business transactions--both domestic and international arenas
- market the assets each individual has
- manage data
- use analytical tools to make decisions about economic issues (p. 77).

Therefore, all business education content areas—accounting; business law; career development; communication; computation; economics and personal finance; entrepreneurship; information systems; international business; management; marketing; and inter-relationships of business functions—should integrate the competencies into their curriculum (Atkinson, 1997).

Atkinson (1997) noted that these standards identified the required performance expectations and established an overall achievement standard for each content area. The performance expectations are assigned at four educational levels: elementary (K-6), middle school/junior high (6-9), secondary school (9-12), and community or technical college (13-14). "Each achievement standard identifies what students need to know and be able to do" (p. 78). The business education standards should be used as a guide for designing curricula if deemed appropriate by the state or school district (Atkinson, 1997).

Administrative Support Occupations Skills Standards. Atkinson (1997) described the Administrative Support Occupation Skill Standards. This skill standards publication was developed by The Vocational Technical Education Consortium of States [V-TECS] and Professional Secretaries International Association.

Using a tasks/duties list generated from an extensive review of current literature and a panel of experts, V-TECS surveyed members of the PSI and non-members who were working in the office occupation field. Almost 500 participants returned usable surveys. Respondents provided data that included demographic information, task/duties performed on the job, workplace skills, and equipment and software usage information. From the analysis of data, the tasks/duties were grouped under nine major job task/duty areas. These were organizing and planning functions; maintaining equipment and supplies; performing financial functions; managing records and files; communications; document production; using operating systems; information distribution; and producing desktop publishing documents. A skill standard matrix was developed that identified the skills and listed the standards required to measure accomplishment of the skill (Atkinson, 1997, V-TECS, 1996). For example, a skill under organizing and planning functions is "maintains supervisor's appointment calendar manually or electronically" (V-TECS, 1996, p. 24). The standard for this skill addresses the details, time, duplication, and confirmation requirements for maintaining a calendar (V-TECS, 1996).

Individual State Skill Standards. A few states have taken national skill standards and developed state skill standards for the administrative support occupations. The Connecticut Business and Industry Association (1995) developed a publication that projects types of available jobs and skill standards needed in business and finance

occupational clusters. For each job category, information describes the employment needs including number of employees as well as expected job skills. Under the business and finance occupational clusters, Connecticut included the administrative support occupation. This occupation is one of six occupations that will need well-trained workers. These workers will need computer and other office-related equipment skills. A skill matrix of each job category provides information about educational knowledge and skills, technical knowledge and skills, and workplace skills required of workers.

Illinois has also developed skill standards for the administrative support occupations. The Illinois Occupational Skill Standards and Credentialing Council developed the publication, The Illinois Occupational Skill Standards: Administrative Support Cluster (Illinois Occupational Skill Standards and Credentialing Council, 1998). It describes "what people should know and be able to do and how well these skills and knowledge will be demonstrated in an occupational setting" (p. 1). The standards are divided into three areas: performance skill, skill standard and performance elements and evaluation criteria" (p. 1). The administrative support occupations were divided into three categories called levels (Illinois Occupational Skill Standards and Credentialing Council, 1998).

The document includes a job description of each level and required skill standards. At Level One, administrative support workers are under the supervision of another person. At Level Two, the workers are required to perform all the tasks of the previous level and supervisory tasks and basic management tasks. Their job titles include "secretary, executive secretary, executive office assistant, and executive assistant" (Illinois Occupational Skill Standards and Credentialing Council, 1998, p. 2).

At Level Three administrative support workers are required to perform all the tasks required at the previous two levels as well as organizational and planning tasks; maintenance tasks related to office equipment and supplies; and financial and record management tasks. They are required to make decisions and solve problems. Job titles included: "administrative assistant, administrative aide, professional secretary, administrative secretary, and assistant to manager" (Illinois Occupational Skill Standards and Credentialing Council, 1998, p. 2).

The Ohio State Department of Education (1995) conducted a study to identify the job-specific, educational, employability skills/competencies needed by administrative support personnel to enter the office and technology labor force. Using a modified version of the Developing A CUrriculum (DACUM), an occupational competency analysis profile (OCAP) for administrative and office technology occupations was developed. Expert workers were used to identify and verify the list of competencies. These individuals were from Ohio businesses, industries, labor, and community agencies.

The competencies were clustered into six broad areas: communications; office technology; financial functions; records management; support tasks; and professionalism. A description of required knowledge, skills and attitudes needed to perform each competency was provided (Ohio State Department of Education, 1995).

The list of academic competencies was derived from an analysis of the Model Competency-Based Language Arts Program, the Model Competency-Based Mathematics Program, and the Model Competency-Based Science Program for grades 9-12. Each expert worker indicated the competencies that an entry-level employee

should possess. The results were analyzed to determine which required competencies were crucial to entry-level employment in each occupational area (Ohio State Department of Education, 1995).

Also, included in the guide was an OCAP listing of employability competencies, work keys assessments, job profiling, a total list of academic competencies (communications, mathematics, and science), and a list of academic competencies identified by expert workers as the most crucial to the entry-level success of employees (Ohio State Department of Education, 1995).

In Louisiana, the Director of the Governor's Office of Workforce Development, Pete Darling (personal communication, August 11, 2000), stated that work is in progress with the National Skill Standards Board to develop occupational skills standards to meet the needs of Louisiana business and industry. To date, teams of representatives from education and businesses are being selected. The secretarial occupation is included as one of the occupational areas in need of skill standards development. No specific date has been selected. He noted that a project currently in progress is the development of a directory listing all industry-based certificate programs offered at Louisiana secondary and post-secondary educational levels. He commented that the major focus at this time is at the secondary level with progression to the postsecondary level.

In an effort to meet the demands of businesses for a skilled pool of workers, the Louisiana Department of Education (1998) charged an interagency group of education and business representatives to create a document that all constituents--educators, students, parents, administrators, businesses and government agencies--could use as a

framework for developing and revising business education curriculum. The educational team identified "five career majors within the Business career cluster: Accounting, Administrative Support, Business Administration and Management, Economics/Finance, and Information Systems" (Louisiana Department of Education, 1998, p. 4). After a thorough review of national skills standards and other related documents, Louisiana business educators developed standards and performance expectations to be used as a guide for developing and revising business education curriculum. The publication, Content Standards Curriculum Framework 1998, described job opportunities within each career major at the completion of each educational level and a matrix, which included "skill standard, benchmarks for each skill standard, and academic cross-references" (Louisiana Department of Education, 1998, p. 12).

Skill Certificates

> As U.S. businesses move at a furious pace to compete in the global economy, their knowledge and skill needs are changing at breakneck speed as well. In this environment, it is paramount for employers, employees, educators and trainers to know--at any given time--the competency demands of the workplace. Increasingly, skills certificates represent the 'shorthand' for this information--and are becoming a valuable new currency in the job market (National Alliance of Business International, 2000, March, p. 1).

The Association of Administrative Professionals (IAAP), formerly Professional Secretaries International (PSI), has endorsed a few certificate programs, the Certified Professional Secretaries (CPS), the Certified Administrative Professional (CAP), and the Office Proficiency Assessment and Certification (OPAC). Mitchell (1974) defined a Certified Professional Secretary as "a person who has successfully completed an examination developed and administered by the Institute of Certifying Secretaries, a department of the National Secretaries Association (International), and who has met the

educational and secretarial experience requirements" (p. 245). A person who has graduated from high school and worked two years in a secretarial position can take the CPS exam. Also, a person who has graduated from an associate or bachelor secretarial degree program can take the CPS examination prior to the completion of the 2-year secretarial experience requirement.

The CPS examination and rating system was developed by PSI, the leading association and certifying body for the secretarial profession, and it has been in effect since 1951. More than 57,000 administrative professionals have completed the certification. The CPS certification includes a required minimum work experience and formal education, and the successful completion of a three-part exam; recertification is required every five years. The topic areas covered by the three-part exam include the following: finance and business law, office systems and administration, and management (International Association of Administrative Professionals [IAAP], n.d.c).

In 2001, IAAP (n.d.d) began offering another type of certification—the Certified Administrative Professional (CAP). The CAP has all the requirements of the CPS plus an additional part of the exam, which focuses more on management, organizational planning, and human resources. CPS holders are required to take only the additional part of the exam, the Organizational Planning (IAAP, n.d.d).

Another IAAP certification is the Office Proficiency Assessment and Certification (OPAC). Biddle & Associates, Inc. (1998) stated,

> The OPAC System is designed as a job-related, computerized method of evaluating skills needed in today's office. It consists of five test modules, plus software selection options for testing on a variety of popular software packages. The test modules are: keyboarding and word processing; language arts/records management; financial record keeping and applications; 10-key/data entry; and terminology/custom test (p. 15).

The OPAC has integrated into its software-testing program the Microsoft Office User Specialist (MOUS) certification.

Biddle & Associates, Inc. has been in the human resource consulting business since 1974. Their main focus is in the area of testing and validation. One of their examinations is Office Proficiency Assessment & Certification (OPAC). IAAP conducted a nationwide study to determine the relevant skills needed by administrative professionals in order to develop OPAC. Biddle & Associates, Inc. conducted a comprehensive validation of OPAC using 300 incumbent administrative professionals representing 24 secretarial/clerical-related categories working for a federal government agency. The validation process gave OPAC a criterion-related validity rating in all areas evaluated (Biddle & Associates, Inc., n.d.).

Odgers (1997) identified another administrative support worker's certification program—the Certified Administrative Manager (CAM). It is sponsored and endorsed by the Academy of Administrative Management. The CAM certificate is only awarded to managers who meet rigorous standards and pass an examination.

In response to computer application skill competency, Microsoft developed a set of recognized standards. People who complete the Certified Microsoft Office Certification examinations can provide mastery or competence in the use of Microsoft applications' packages. The exams require participants to apply application skills to realistic tasks. The Microsoft Office User Specialist Programs (MOUS) offer several examinations: Word, Excel, Access, PowerPoint and Outlook. For example, a person can request and take an examination for Microsoft Word 2000 and receive either a basic or an expert certification rating (Microsoft Training and Certification, 2002).

As the demand for a skilled workforce continues, skill certificates will continue to gain value by meeting the urgent needs of all constituents—educators, business and industry, and students. Skills certificates provide the following benefits:

1. Communicating employer knowledge and skill requirements (also known as competencies);
2. Ensuring the development of competency-driven programs, curricula and outcomes; and,
3. Providing a competency measurement in an employer recognized credential (National Alliance of Business, 2000, p. 4).

In the rapidly changing economy, skill standards and certificates provide valuable information for employers, educators, and employees. Employers are seeking a way to determine what students know and can do. Educators are seeking a way to determine what students should know and be able to do. Students are seeking a way to determine what knowledge and skill requirements they need to have attained in order to be successful on the job. For all stakeholders, skill standards and certificates can provide universal, portable credentials of workers (National Alliance of Business, 2000).

Summary

Numerous office-related studies were conducted in the period from 1987-1989. Only a few studies were conducted after 1990. The majority of these studies examined specific skills of office workers such as word processing, computer usage, telecommunications skills, equipment and software requirements. Some of the studies were limited to local, state, or regional participants. A few studies determined that the size, location, and type of organization affected the job tasks, skills, and knowledge required of workers. Due to the lack of recent or limited office occupation skill/competency research, the emergence of new technology in the office environment,

and the concern of the public regarding the lack of knowledgeable workers, the researcher will propose an expansion of V-TECS skill standards to add new skills and prioritize skills with implication for curricular revision for the administrative support occupation program at Northwestern State University.

CHAPTER 3

METHODOLOGY

In this chapter the methods and procedures used by the researcher in this study are described. Issues related to the study, including population/sample description, research design, instrument, data collection, and data analysis are addressed.

Approval to Conduct the Study

Appropriate approvals were secured for conducting the proposed study. These approvals included:

1. Approved exemption form from the Louisiana State University (LSU) Institutional Review Board (IRB). (See Appendix D)
2. Approved exemption form from the Northwestern State University (NSU) Committee on the Protection of Human Subjects in Research. (See Appendix E)

Population and Sample

The target population of the study was defined as administrative support occupation workers in the United States. The accessible population of the study was operationally defined as the members of the International Association of Administrative Professionals (IAAP) in Louisiana, Mississippi, and East Texas (including Houston, Texas). Membership in IAAP included three levels: professional, student, and associate. The professional member was a person currently employed or within the last two years employed as an administrative professional or a holder of the Certified Professional Secretary rating, or an employed teach of business education. A student member was a full-time student in business education with a

maximum of 4-years in student classification. An associate member was an individual, firm, or educational institution that sustains the objectives of IAAP. There were 27 IAAP chapters in the states of Louisiana, Mississippi, and East Texas (including Houston, Texas). The total number of members in the chapters was 1,302.

Using Cochran's (1963) sample size determination formula where t = t-value for alpha level of .05; s^2 = estimate of the variance in the population; and d = acceptable margin of error (number of points on primary scale X acceptable margin of error), the minimum required returned sample size was calculated:

$$n_0 = \frac{t^2 s^2}{d^2}$$

$$n_0 = \frac{(1.96)^2 (0.83)^2}{(0.025 \times 5)^2}$$

$$n_0 = \frac{(3.8416)(0.6889)}{(0.015625)}$$

$$n_0 = \frac{2.6464}{0.015625}$$

$$n_0 = 170$$

The minimum required returned sample was 170. Since the required returned sample was more than 5% of the population (170/1,302 = 13%), the researcher used Cochran's (1963) correction formula where population = 1,302; n_0 = required returned sample to Cochran's formula was 170; and n = required returned sample because sample > 5% of population. The minimum required return sample was calculated below:

$$n = \frac{n^0}{1 + \left(\frac{n^0}{population} \right)}$$

$$n = \frac{170}{1 + \left(\frac{170}{1302} \right)}$$

$$n = \frac{170}{1 + (0.13056)}$$

$$n = \frac{170}{1.13056}$$

$$n = 151$$

The minimum required useable sample was 151.

Kerlinger (1986) noted that a researcher utilizing mailed questionnaires to gather data from a sample could expect a low return response. The researcher anticipated a return response of 50% (Kerlinger, 1986). Dillman (2000) noted that researchers using the Total Design Method had received return responses of 70%. The researcher randomly selected 302 participants from the accessible population of 1,302 members. This number was selected based on an anticipated return response of 50%, thus providing the required minimum returned response of 151.

Research Design

Survey research is frequently used and considered to be an important type of research technique, especially in the areas of sociology, business, political science, government, and education (Ary, Jacobs, & Razavieh, 1979; Babbie, 1992; Berdie, Anderson, & Niebuhr, 1986). Backstrom and Hursh-Cèsar (1981) defined survey research as "… the scientific study of people—their personal characteristics and

aspects of their knowledge, attitudes, and behavior" (p. 1). Kerlinger (1986) and Ary et al., (1990) stated that researchers could gather information through interviews (telephone or face-to-face), panel, or questionnaire (mail). Each method has its advantages and disadvantages. A mailed questionnaire will provide a systematic and impartial means of collecting the data and provide data collected relatively free from personal bias of the researcher. Since the purpose of this study was to identify the skills required of administrative support workers, the survey research method seems especially appropriate because (1) a relatively geographically-diverse population will be used, (2) the data collected will be relatively free from personal bias of the researcher, (3) the ability to be administered by the participants results in obtaining more truthful responses, and (4) mailed surveys are a systematic and impartial means of collecting data (Ary et al., 1979; Babbie, 1992; Backstrom & Hursh-Cèsar, 1981; Berdie et al., 1986;).

The disadvantages of using a mailed questionnaire are the low completion rate by participants and the participants' lack of knowledge about issues addressed by the questionnaire. Ary et al. (1979) stated that participants often do not complete a questionnaire immediately upon receipt, thus forgetting to return it by the due date. Berdie et al. (1986) and Dillman (2000) stated that another reason participants fail to complete the questionnaire is because they lack the knowledge to complete the questionnaire. Since the participants were selected from administrative support occupations' workers employed in the workforce, they should possess the knowledge to complete the questionnaire.

This study was designed as a descriptive correlational study. The study was guided using the following objectives:

Objective 1. To determine the importance of administrative support job skills in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions.

Objective 2. To determine the importance of administrative support job skill categories in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions.

Objective 3. To describe workers who are currently employed in administrative support occupations positions on the following selected demographic characteristics:

(a) age;

(b) gender;

(c) job title;

(d) years of work experience in the field of administrative support occupations;

(e) highest level of education completed;

(f) size of the office (as measured by the total number of employees) at the location where participant is employed;

(g) type of community (as measured by population size) in which the office of employment is located;

(h) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(i) type of organization (as measured by the DOL SIC designation) in which the participant is employed.

Objective 4. To determine whether or not selected software/programs, office technology, and other office items are used in the performance of administrative support office jobs as perceived by workers currently employed in administrative support occupations positions.

Objective 5. To determine if a model exists explaining a significant portion of the variance in the perceived importance of administrative support job skill categories in the performance of administrative support jobs from the following personal and professional demographic characteristics:

(a) age;

(b) gender;

(c) job title;

(d) years of work experience in the field of administrative support occupations;

(e) highest level of education completed;

(f) size of the office (as measured by the total number of employees) at the location where participant is employed;

(g) type of community (as measured by population size) in which the office of employment is located;

(h) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(i) type of organization (as measured by the DOL SIC designation) in which the participant is employed.

Instrument Development Procedures

The researcher used a review of current office-related skills studies (Akeyo & Pollard, 1992; Anderson & Griffin, 1994; Butts, 1993; Davis, 1992; Gerber, Hamburger, Buddy, & Nowka, 1999; Haff, 1993; Henry, 1994; Holmquist, 1992; Kozlowski, 1998; Martin, 2001; Miller, 1999; Oswalt & Arn, 1989; Redmann, Seaward, & Griffin, 1989; Rickman & Behymer, 1989; Sullivan, 1995), related-skills' standards and curriculum models (V-TECS, 1996; Professional Secretaries International, 1994; Office Systems Research Association, 1996), and office-related textbooks (Becker & Anders, 1971; Biddle & Associates, Inc., 1998; Fulton-Calkins & Hanks, 2000; Cooper, 1999; Odgers, 1997) as a basis for development of the questionnaire. A questionnaire was developed to address the study's objectives.

Preliminary Instrument. Based on a review of the related literature, the researcher used the Administrative Support Occupations Skill Standards (V-TECS, 1996) as a basis for the preliminary version of the questionnaire. The researcher obtained permission from Vocational Technical Education Consortium of States' (V-TECS) to use the Administrative Support Occupations Skill Standards (V-TECS, 1996). (See Appendix F) In the original study, only workers employed as executive, legal, or medical secretaries completed all twelve categories. The researcher used ten of the twelve skills' categories in the preliminary version of the questionnaire. These categories are: (1) organizing and planning functions, (2) maintaining equipment and supplies, (3) performing financial functions, (4) managing records and files, (5)

communications, (6) document production, (7) information distribution, (8) producing desktop-publishing documents, (9) using operating systems, and (10) supervising personnel. A total of 119 skills were listed under the ten categories.

Focus Group. A focus group was used to generate a list of job skills performed by administrative support occupations workers. A focus group usually consists of 8 to 12 people working with a facilitator to express and to discuss their opinions or attitudes about a specific topic (Zemke & Kramlinger, 1982). Members of a focus group are people who are familiar with the topic (Zemke & Kramlinger, 1982). A typical focus group meeting lasts approximately one to two hours (Fowler, 1993; Zemke & Kramlinger, 1982).

The Northwestern State University (NSU) College of Business Advisory Board (COBA) members were sent a letter describing the purpose of the study and requesting the identification and recommendation of one of their administrative support occupations workers who could participate in the focus group. (See Appendixes G and H) Some of the NSU COBA members identified and recommended more than one person from their organization. The researcher generated a list of potential focus group members from the NSU COBA recommendation forms. The researcher anticipated that some focus group participants would not attend. From this list the researcher selected fifteen administrative support occupations workers to contact as focus group participants. These participants were sent a letter stating the purpose of the meeting, requesting their assistance with the study, and giving the time, date, and location of the meeting. Also, the researcher

included a map giving directions to the meeting location (Zemke & Kramlinger, 1982). (See Appendix I)

The focus group meeting was held in the NSU College of Business Natchitoches room in Natchitoches, Louisiana. Ten of the fifteen focus group participants attended the focus group meeting. The researcher provided refreshments for the participants. Refreshments included small bite-size sandwiches, potato chips, cookies, after-dinner mints, and drinks (bottled water and colas). Two note takers were present for the focus group session. A colleague of the researcher was present to write responses on the flip chart. The researcher introduced and explained the role of the note takers and the colleague to the focus group participants. Upon approval from the focus group participants, the researcher audio-taped the focus group session (Zemke & Kramlinger, 1982).

The researcher facilitated the focus group and a colleague wrote responses on the flip chart. As a flip chart sheet was completed it was hung on the walls of the room. All the completed flip chart sheets were visible to the focus group participants. The researcher analyzed the transcripts of the taped focus group session and reviewed the written notes. The researcher made note of any new key job skills or other items identified by the focus group members for inclusion or deletion. The focus group information was compared to the preliminary instrument. Any additional job skill items and other items identified by the focus group were considered for inclusion (Zemke & Kramlinger, 1982).

Using the analysis of the focus group audio-taped transcript and the flip chart sheets, the researcher, a post-secondary business educator, and a doctoral committee

member made the decision about the addition and deletion of items. Under Maintaining Equipment and Supplies, the item, train others in operation of equipment was added. Under Performing Financial Functions, handle payroll, was split and reworded. The two items were: calculate payroll electronically and calculate payroll manually. The item, maintain accounting journals, was split and reworded. The two items were: maintain accounting journals electronically and maintain accounting journals manually. The item, calculate billing of services/products, was a new item added.

Under Managing Records and Files, two items were deleted: maintain clippings file and maintain tickler file. Two items were added: maintain on line reference library and file materials electronically. Under Communications, additional wording was used to make items clearer. Under Document Production, four items were added: create documents using presentation software package, create documents using accounting software packages, and create documents using financial software packages. The item, take dictation in speedwriting/shorthand, was split into two items: take dictation in speedwriting and take dictation in shorthand. Under Information Distribution, one item was added: process documents received by facsimile machine. Two items were removed: retrieve messages and access/utilize information.

Under Producing Desktop-Publishing Documents, create charts and graphs was split. Two items were added: create charts using desktop-publishing software package and create graphs using desktop-publishing software package. The item, create documents was reworded. The item was create documents using desktop-publishing

software package. Under Supervising Personnel, develop and evaluate employee performance standards was split. The two items were: develop employee performance evaluation/standards and evaluate employee's performance. Under Part II, the item, Intranet was added.

Final Instrument. Following Dillman's Total Design Method (2000), the questionnaire was designed by using 11- by 17- inch paper folded in half to create an 8 1/2 - by 11 -inch eight page booklet. The front cover of the booklet had a picture of the three NSU columns with the questionnaire's title printed in purple and gray. The back cover had the same three NSU columns printed in gray. The questionnaire was subdivided into three sections labeled Part I, Part II, and Part III. (See Appendix J)

In Part I of the questionnaire, the participants reported their perceptions regarding the importance of each job skill item to the performance of their job. There were a total of 128 items grouped under nine categories. Each category heading was highlighted in purple shading. They rated the importance of each job skill item using the following anchored scale: 1=Not Important, 2=Somewhat Important (skill might be needed in the performance of the job), 3=Important (skill usually needed in performance of the job), 4=Very Important (skill needed in the performance of the job), and 5=Extremely Important (skill critical to the performance of the job). At the end of each category, additional space was available for participants to add and rate job skill items not listed.

In Part II of the questionnaire, participants were asked to identify software/programs, office technology, and other office items used by them to perform their jobs. These items were developed from a review of literature (Adams, 2001;

Anderson & Griffin, 1994; Arneson, 1989; Arzy, 1992; Butts, 1993; Chalupa, 1998; Gerber et al., 1999; Henry, 1994; Holmquist, 1992; Jurisic, 1999; Kerka, 1995; Kozlowski, 1998; Kruk, 1996; Martin, 2001; Noble, M. & Noble, P., 1987; O'Leary,T. J. & O'Leary, L. I., 2002; Oswalt & Arn, 1989; Roth & Duclos, 1995; Shelly, Cashaman, & Vermaat, 2002; Sullivan, 1995; Vincent & Ross, 1998; Vincent & Williams, 1993; V-TECS, 1996). The participants were asked to check all listed software/ programs used in the performance of their jobs and to provide the name of the software/program in the blank provided. The participants were asked to check all listed office technology and other office items used in the performance of their job. Additional spaces were provided so participants could add software/programs and office technology and other office items not listed.

In Part III of the questionnaire, participants were asked to provide the following demographic information: age, gender, job title, years of work experience in the field of administrative support occupations, highest level of education completed, size of the office (as measured by the total number of employees) at the location where participant is employed, type of community (as measured by population size) in which the office of employment is located, scope of organization (measured as international, national, regional, state, local locations only, or one location) in which the participant is employed, and type of organization (as measured by the DOL SIC designation) in which the participant is employed. These items were developed from a review of literature (Adams, 2001; Administrative Development Institute, 1994; Anderson & Griffin, 1994; Areneson, 1989; Bouchey, 2001; Butts, 1993; Chapula, 1988; Dirks, 1988; Forde, 1988; Gerber et al., 1999; Henry, 1994; Holmquist, 1992; International

Association of Administrative Professionals, n.d.a; Miller, 1999; Moses, 1988; Moore, 1993; Noble, M. & Noble, P., 1987; Oswalt & Arn, 1989; Redmann et al., 1989; Sullivan, 1995; V-TECS, 1996). Study participants were anticipated to be able to provide the requested demographic information because several were taken from the IAAP membership application (IAAP, n.d.a).

Following the personal and professional demographic information section, the researcher included a thank-you statement in purple font color. Below the thank you statement, the researcher provided space for those respondents who wished to receive a copy of the study results. In the event that the return envelope was lost, the researcher printed the return address at the bottom of the questionnaire. (See Appendix J) Embedded in each questionnaire and envelope was a numeric identification code that was used for follow-up procedures. To ensure confidentiality after receiving the completed questionnaire, each participant's name and address was deleted from the mailing list database so that individual names could never be connected to the results of the study in any way.

Instrument Validation. Researchers utilizing measurement instruments must consider two psychometric properties, validity and reliability (Wiersma, 2000). Is the instrument measuring what it proposes to measure? And, is the instrument measuring things consistently (Ary et al., 1990; Berdie et al., 1986; Fowler, 1993; Wiersma, 2000)?

Content validity refers to the sampling adequacy of the content of the questionnaire (Kerlinger, 1963). This type of validity can be determined by expert judgment (Ary et al., 1990; Berdie et. al., 1986; Dillman, 2000). Therefore, the

researcher used a panel of experts to establish the validity of the questionnaire. The panel of experts consisted of members of the doctoral committee, two administrative support occupation professors, and four Louisiana office workers who currently work for the members of the NSU COBA Board. The researcher considered suggestions for additions, deletions, and/or other refinement (Babbie, 1992; Berdie et al., 1986; Dillman, 2000).

Suggestions for rewording some of the job skill items were incorporated. Under the Document Production category, suggested items for inclusion were create/prepare documents using voice recognition software and project management software. In Part II, suggestions included digital camera, pagers, and voice recognition and project management software. Formatting suggestions included: add perceived importance scale at the top of each page, add page numbers at the bottom, increase the font size where appropriate, and list software/programs in one column under Part II. Part III was moved the sixth page above the closing "thank you" remarks. The final version of the instrument included nine categories with 128 items, 20 software/programs, 28 office items/tools, and 9 demographic-related items. (See Appendix J)

The researcher addressed the reliability of the questionnaire. Reliability was established by field test. According to Dillman (2000), the researcher should select between 100 and 200 participants to field test a questionnaire. The researcher randomly selected 100 administrative support occupation workers from the remaining accessible population of 1,000 IAAP chapter members to field test the questionnaire.

The participants of the field test received a copy of all the information that the study participants received (Dillman, 2000). (See Appendixes B, J, K, L, M, and N)

The reliability of the questionnaire was checked using the research data from the field test. Since a five-point anchored-scale questionnaire was used and field-tested prior to distribution, the researcher used the Cronbach's alpha formula to estimate the reliability of the instrument (Wiersma, 2000). As suggested by Hair, Anderson, Tatham, and Black (1998), the researcher used the generally agreed upon lower limit of Cronbach's alpha, .70. If the reliability is below .70, then the researcher should perform factor analysis to determine which items load highest on which dimensions, and then take the alpha of each subset of items separately. Those items or sections loading low and appearing to be unrelated to the constructs should be considered for elimination (Hair et al., 1998). The researcher should check the reliability of the revised instrument with another field test.

Fifty-eight questionnaires were used to test the reliability of the instrument. The reliability of the items, which were measured on a 1 to 5 Likert-type scale, was estimated using the Cronbach's alpha internal consistency coefficient of .70. The Cronbach's Coefficient alpha for each subscale of the questionnaire was calculated: Organizing and Planning Function ($\underline{n}$ = 54, $\underline{a}$ = .86), Maintaining Equipment and Supplies ($\underline{n}$ =55, $\underline{a}$ = .93), Performing Financial Functions ($\underline{n}$ = 55, $\underline{a}$ = .91), Managing Records and Files ($\underline{n}$ = 55, $\underline{a}$ = .84), Communications ($\underline{n}$ = 56, $\underline{a}$ = .83), Document Production ($\underline{n}$ = 52, $\underline{a}$ = .94), Information Distribution ($\underline{n}$ = 56, $\underline{a}$ = .88), Producing Desktop-Publishing Documents ($\underline{n}$ = 56, $\underline{a}$ = .97) and Supervising Personnel ($\underline{n}$ = 56, $\underline{a}$ = .95).

Data Collection Procedures

Babbie (1992), Berbie et al. (1986), and Dillman (2000) suggested that the timing and use of multiple follow-up procedures with survey research would enhance the return response rates. In order to achieve a high return rate, the researcher used the procedures and incorporated the elements suggested by Dillman (2000).

The researcher notified the participants a week prior to the mail out of the questionnaire packet (Dillman, 2000). The pre-notification letter stated a questionnaire packet would be sent to them requesting their participation and a statement of the researcher's appreciation of their contribution (Dillman, 2000). (See Appendix K) Also, the researcher included statements in the pre-notification letter that indicated participation in the study was strictly voluntary and that responses would be confidential and released only as summaries in which no individual's responses could be identified (Dillman, 2000).

The researcher sent the questionnaire packet to the participants seven days after the pre-notification letter (Dillman, 2000). The questionnaire packet included a cover letter, questionnaire booklet with an identification code number, a listing of the standard industrial classification division structure (SIC codes) (United States Department of Labor, 2002), and a stamped, addressed coded return envelope. The cover letter included statements that indicated participation was strictly voluntary and that all responses were confidential and would be reported in summary format only so that individuals could not be identified (Dillman, 2000). The identification code number was used for follow-up purposes. Also, the researcher included a two-dollar

bill as a small monetary token of appreciation (Dillman, 2000). (See Appendixes B, J, and L)

The administrative support occupation workers were sent post-card thank-you/reminders seven days (one week) after the initial mailing date of the questionnaire packet. The post-card thank-you/reminders thanked the participants for responding and, also, indicated that non-respondents could still respond. Colored fonts of purple and black were used in the printing of the postcards (Dillman, 2000). (See Appendix M)

Three weeks after the initial mailing date of the questionnaire packet, all non-respondents were sent a replacement questionnaire packet. Again, the researcher included statements that explained participation was voluntary and responses were confidential and would be reported in summary format only so that individuals could not be identified. The non-respondents were encouraged to submit a completed questionnaire (Dillman, 2000). (See Appendixes N and J)

Six weeks after the initial mailing date of the questionnaire packet, the researcher telephoned 10% or not less than 25 of the non-respondents (Ary et al., 1990). In advance, the researcher randomly selected 20 items from the questionnaire. Telephone numbers were not provided with the purchased database, therefore, the researcher used an internet resource to search for the non-respondents' telephone numbers (SwitchBoard.Com, 1996-2003). Only 54 of the 116 non-respondents' telephone numbers were located.

The researcher randomly selected 25 non-respondents from the 54 non-respondents to call. The researcher informed the participants that a questionnaire

packet was mailed a few weeks ago and a response had not been received. The researcher inquired about any questions that could be addressed. The randomly selected non-respondents were asked to complete the 20 pre-selected items over the telephone. One non-respondent refused to answer the survey over the telephone. Three non-respondents were no longer employed at the organization listed and no further contact information was available. One non-respondent had a voice message stating she was out on medical leave. Twenty non-respondents completed 20 randomly selected items by telephone. Therefore, the researcher randomly selected ten more non-respondents to contact by telephone. Seven non-respondents agreed to answer the pre-selected 20 items over the phone. One non-respondent refused, one non-respondent no longer lived at the published number, and one non-respondent had a telephone block. A total of 27 non-respondents answered the 20 pre-selected items from the questionnaire.

Finally, the researcher analyzed data collected from the telephoned participants to determine the representativeness of the non-respondents. The data was statistically compared at the .05 level to determine if any significant differences exist. Based on a comparison of a minimum of 10% or 25 of the telephoned non-respondents, if no significant differences are found, the researcher would consider the responses represent an unbiased sample of all non-respondents (Ary et al., 1990).

Data Analysis

The data obtained were analyzed as described in the following paragraphs.

Objective 1 was to determine the importance of administrative support job skills in the performance of their jobs as perceived by workers who are currently

employed in administrative support occupations positions. Means and standard deviations were calculated for each job skill listed in Section I of the instrument. Each job skill was classified according to the following interpretative scale: less than 1.50—not important; 1.50 to 2.49—somewhat important; 2.50 to 3.50—important; 3.51 to 4.50—very important; and greater than 4.50—extremely important.

Objective 2 was to determine the importance of administrative support job skill categories in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions. The job skills in each of the nine categories were factor analyzed to determine if the item (variable) can be confirmed to measure a single construct. As recommended by Hair et al. (1998), the researcher used the minimum acceptable factor loading of .30. The researcher created summated scales. Simply stated "a summated scale is a composite value for a set of variables calculated by such simple procedures as taking the average of the variables in the scale" (p. 129). Using the computed average score of the nine job skills categories, the researcher determined the importance of the nine job skills categories using the following interpretive scale: less than 1.50—not important; 1.50 to 2.49—somewhat important; 2.50 to 3.50—important; 3.51 to 4.50—very important; and greater than 4.50—extremely important.

Objective 3 was to describe workers who are currently employed in administrative support occupations positions on the selected personal, professional, and organizational demographic characteristics. Descriptive statistics of mean and standard deviation were used to describe the variable, years of work experience in the

field of administrative support occupations. Frequencies and percentages were used to describe the respondents based on the following list of the demographic variables:

(a) age;

(b) gender;

(c) job title;

(d) highest level of education completed;

(e) size of the office (as measured by the total number of employees) at the location where participant is employed;

(f) type of community (as measured by population size) in which the office of employment is located;

(g) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(j) type of organization (as measured by the DOL SIC designation) in which the participant is employed.

Objective 4 was to determine whether or not selected software/programs, office technology, and other office items are used in the performance of administrative support office jobs as perceived by workers currently employed in administrative support occupations positions. Frequencies and percentages of the total responses of each item were used to conduct the analyses for this objective. The researcher ranked order the total responses for each item used in the performance of the administrative support occupations workers' job to determine the most frequently used software/programs, office technology, and other items.

Objective 5 was to determine if a model exists explaining a significant portion of the variance in the perceived importance of administrative support job skill categories in the performance of administrative support jobs from selected personal and professional demographic characteristics:

(a) age;

(b) gender;

(c) job title;

(d) years of work experience in the field of administrative support occupations;

(e) highest level of education completed;

(f) size of the office (as measured by the total number of employees) at the location where participant is employed;

(g) type of community (as measured by population size) in which the office of employment is located;

(h) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(i) type of organization (as measured by the DOL SIC designation) in which the participant is employed.

Stepwise multiple regression analysis was used to conduct the analyses for this objective. The following variables were used as explanatory variables in these analyses:

(a) age;

(b) gender;

(c) job title;

(d) years of work experience in the field of administrative support occupations;

(e) highest level of education completed;

(f) size of the office (as measured by the total number of employees) at the location where participant is employed;

(g) type of community (as measured by population size) in which the office of employment is located; and,

(h) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed.

For analysis of the nonmetric independent variable, gender, the researcher used dummy variables. Respondents are either male or female. X_1 =1 represented those respondents who are females and X_1 = 0 represented those respondents who are males (Hair et al., 1998, p. 83). For analysis of the nonmetric independent variables with three or more categories, job title and type of organization (as measured by the DOL SIC designation) in which the participant is employed, the researcher used effects coding to enter these variables (Hair et al., 1998, p. 168). Effects coding is an alternative to dummy-variable coding. Hair et al. state, "it is the same as indicator coding except that the comparison group (the group that got all zeros in indicator coding) is now given the value of –1 instead of 0 for the dummy variables" (p. 84).

CHAPTER 4

RESULTS

In this chapter the results of the study are presented. A description of the population and sample of the study is provided. The participants and the results of the field-tested instrument are described. Finally, the findings of the study are provided based on the statistical analysis and result of each objective.

Population and Sample

The target population of the study included administrative support occupation workers in the United States. The accessible population of the study was operationally defined as the members of the International Association of Administrative Professionals (IAAP) in Louisiana, Mississippi, and East Texas (including Houston, Texas). There were 27 IAAP chapters in these states. The total number of members in these chapters was 1,302. Membership in IAAP included three levels: professional, student, and associate. The professional member was a person currently employed or within the last two years employed as an administrative professional or a holder of the Certified Professional Secretary rating, or an employed teacher of business education. A student member was a full-time student in business education with a maximum of 4-years in student classification. An associate member was an individual, firm, or educational institution that sustains the objectives of IAAP.

The researcher randomly selected 302 participants from the purchased IAAP membership list to serve as the sample for this study. Then the researcher removed the names and addresses of the sample participants from the original IAAP database of 1,302 members. Since the purpose of the study was to determine the perceived

importance of job skill items in the performance of administrative support occupations professionals' jobs, those participants, students, educators, no longer working or retired workers, were eliminated. Of the selected 302 participants, 3 participants were immediately removed from the mailing list because they did not meet the criteria of being employed as an administrative professional: two participants' addresses were listed with Enron (Enron went bankrupt) and one participant was listed as a university professor. The researcher decided not to replace these three participants. Two hundred ninety-nine participants were used in the data collection phase of this study.

Field-Test Participants and Procedures

As mentioned in the population and sample section, 302 members were randomly selected and removed from the IAAP database of 1,302 members. From the remaining 1,000 IAAP members, the researcher randomly selected 100 participants for the field test. Each field test participant was sent a pre-notification letter. Seven days later, a questionnaire packet was sent to each participant. Each questionnaire packet included a cover letter with a $2 bill, the questionnaire booklet, a sheet with listing the standard industrial classification division structure (SIC codes), and a stamped, addressed coded return envelope. Seven days (one week) after the initial mailing date of the questionnaire packet, each participant received a post-card thank you/reminder. Three weeks after the initial mailing date of the questionnaire packet, all non-respondents were sent a replacement questionnaire packet.

Of the 100 field test participants, 67 (67%) returned the questionnaires. The researcher was unable to use nine of these 67 questionnaires because two participants chose not to respond and sent back blank questionnaires; six of the participants were

either retired or no longer working in the field; and one participant was a business educator. Only 58 participants met the criteria of being currently employed as an administrative professional.

Reliability of Instrument

The reliability of the questionnaire was checked using the research data collected from the field test. Fifty-eight questionnaires were used to test the reliability of the instrument. The reliability of the items, which were measured on a 1 to 5 Likert-type scale, was estimated using the Cronbach's alpha internal consistency coefficient of .70. The Cronbach's Coefficient alpha for each subscale of the questionnaire was calculated: Organizing and Planning Function (n = 54, a = .86), Maintaining Equipment and Supplies (n =55, a = .93), Performing Financial Functions (n = 55, a = .91), Managing Records and Files (n = 55, a = .84), Communications (n = 56, a = .83), Document Production (n = 52, a = .94), Information Distribution (n = 56, a = .88), Producing Desktop-Publishing Documents (n = 56, a = .97) and Supervising Personnel (n = 56, a = .95).

Sample Data Collection Procedures

Two hundred and ninety-nine participants were sent the pre-notice letter. After receiving the pre-notice letter, one participant notified the researcher that she was retired. This participant did not meet the criteria of being an employed administrative professional so her name was removed from the mailing list.

Seven days after the participants were sent pre-notice letters; two hundred and ninety-eight participants were sent questionnaire packets. Each questionnaire packet included a cover letter with a $2 bill, the questionnaire booklet, a sheet listing the

standard industrial classification division structure (SIC codes), and a stamped, addressed coded return envelope. The United States Post Office returned five pre-notice letters and questionnaire packets marked as incorrect address or no forwarding address.

Seven days (one week) after the initial mailing date of the questionnaire packet, each participant was sent post-card thank you/reminder. Three weeks after the initial mailing date of the questionnaire packet, all non-respondents were sent a replacement questionnaire packet.

Of the 177 returned questionnaires, a total of 20 questionnaires were not included in the study. Thirteen participants did not meet the criteria of being employed as an administrative professional for the following reasons: (1) retired (n = 8); (2) no longer working in the field (n = 4); or (3) educator (n = 1). One participant was deceased. Four participants chose not to participate and sent back the uncompleted survey. Two participants only completed a portion of the survey.

Finally, six weeks after the initial mailing date of the questionnaire packet, 116 participants had not responded. The overall and useable response rate was 157 (53%). To determine the representativeness of the non-respondents, it was decided that 10% or not less than 25 of the non-respondents were to be contacted by telephone. The researcher used Internet resources to search for the non-respondents' published telephone numbers. Only 54 of the 116 non-respondents' telephone numbers were located. The researcher randomly selected 25 non-respondents from these 54 non-respondents to call. One non-respondent refused to answer the survey over the telephone. Three non-respondents were no longer employed at the organization listed and no further contact information was available. One non-respondent had a voice

message stating she was out on medical leave. Twenty non-respondents completed the 20 randomly pre-selected items by telephone. Therefore, the researcher randomly selected ten more non-respondents to contact by telephone. Seven non-respondents agreed to answer the pre-selected 20 items over the phone. One non-respondent refused, one non-respondent no longer lived at the published number, and one non-respondent had a telephone block. Therefore, 27 telephoned non-respondents were used to determine the representativeness of the non respondents.

The 20 randomly selected item responses from the sample (n = 157) and the telephoned non-respondents (n = 27) were compared using the t-test or chi square procedure (as appropriate) at the .05 level to determine if any significant differences existed. The researcher used t-tests to compare the 16 Likert-type scaled items and chi-square tests of homogeneity to compare the 4 dichotomous items.

Before performing the t-tests, Levene's Test for the Equality of Variances was used to determine which form of the t-test to use. There was no evidence to suggest any of the variances differed. Therefore, the researcher was able to use the t-tests calculated with equal variances assumed for the 16 pre-selected scaled items. Based on a comparison of the 157 sample respondents and 27 telephoned sample non-respondents there was a significant difference on 2 of the 16 pre-selected scaled items (see Table 1).

Table 1

T-tests for Comparison of Mailed Respondent and Telephoned Respondent Administrative Support Occupations Workers on 16 Pre-Selected Scaled Job Skill Items

Pre-selected Job Skill Item	n^a	M^b	N^c	M^d	t	df	p
Edit documents keyed by others	155	3.97	27	3.48	2.06	180	.04

(table continued)

Pre-selected Job Skill Item	n^a	M^b	n^c	M^d	t	df	p
Type documents composed by someone else	156	3.89	27	3.37	2.03	181	.04
Receive & store offices supplies	156	3.29	27	2.78	1.86	181	.06
Create/prepare documents using spreadsheet software	153	4.02	27	3.74	1.12	178	.27
Schedule office equipment maintenance	155	2.74	27	2.56	.66	180	.51
Custom design a desktop-published document	156	2.94	27	2.81	.40	181	.69
Prepare purchase requisitions	156	3.17	27	3.22	-.18	181	.85
Create a new document	155	4.33	27	4.37	-.20	180	.84
Maintain confidential material	157	4.61	27	4.67	-.31	182	.76
Create chart using desktop publishing	156	3.02	27	3.15	-.43	181	.67
Explain/describe office procedures to others	157	3.82	27	3.93	-.44	182	.66
Train others in operation of equipment	155	2.99	27	3.11	-.51	180	.61
Resolve personnel problems	156	2.37	27	2.56	-.59	181	.56
Access files	156	4.06	27	4.33	1.21	181	.23
Handle routine telephone communications	157	4.11	27	4.41	-1.37	182	.17
Maintain historical records	156	3.33	27	3.74	-1.50	181	.13

[a] *n*= Number of Sample Respondents
[b] *M* = Mean of Sample Respondents
[c] *n* = Number of Telephoned Sample Non-Respondents
[d] *M* = Mean of Telephoned Sample Non-Respondents

The other four pre-selected items, project management software, scanner, typewriter, and pager, were dichotomous items. Participants were asked to report the use of listed software/programs, office technology, and other office items by placing a check mark in the appropriate box next to each item. A check mark indicated that they used the software/programs, office technology, and other office items in the performance of their jobs and the absence of a check mark indicated that they did not use these items in the performance of their job.

Based on a comparison of the 27 telephoned sample non-respondents and the sample respondents there was no difference between non-respondents and respondents on the four pre-selected dichotomous items (see Table 2).

Table 2

Chi Square Tests of Comparison of Mailed Respondent and Telephoned Respondent Administrative Support Occupations Workers on 4 Pre-Selected Dichotomous Job Skill Items

	Use		Don't Use					
Job Skill Item	*n*	%	*n*	%	*n*	x^2	*df*	*p*
Project Management								
Group 1	21	13.40	136	86.60	157	2.81	1	.09
Group 2	7	25.90	20	74.10	27			
Scanner								
Group 1	105	66.90	52	33.10	157	.13	1	.72
Group 2	19	70.40	8	29.60	27			
Typewriter								
Group 1	116	73.90	41	26.10	157	1.59	1	.21
Group 2	23	85.20	4	14.80	27			
Pager								
Group 1	70	44.60	87	55.40	157	2.11	1	.15
Group 2	8	29.60	19	70.40	27			

Note. Group 1 = Number of Sample Respondents
Group 2 = Telephoned Sample Non-Respondents

Since only 2 of the 20 pre-selected items were significant, the researcher decided that there were no differences between the sample and telephoned sample non-respondents.

Data Analysis of Sample

The alpha level was set at .05 á priori. Procedures for statistical analysis and findings are reported by each objective.

The reliability of the questionnaire was checked using the research data collected from the sample. One hundred and fifty-seven questionnaires were used to test the reliability of the instrument. The reliability of the items which were measured on a 1 to 5 Likert-type scale was estimated using the Cronbach's alpha internal

consistency coefficient of .70. The Cronbach's alpha for each subscale of the questionnaire was calculated: Organizing and Planning Function (n = 142, a = .87), Maintaining Equipment and Supplies (n =152, a = .92), Performing Financial Functions (n = 145, a = .94), Managing Records and Files (n = 150, a = .89), Communications (n = 151, a = .87), Document Production (n = 139, a = .95), Information Distribution (n = 153, a = .91), Producing Desktop-Publishing Documents (n = 155, a = .98) and Supervising Personnel (n = 150, a = .95).

Objective 1-Perceived Importance of Job Skill Items. The first objective was to determine the importance of administrative support job skills in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions. Means and standard deviations were calculated for the 128 job skill items in Part I. Each job skill item's mean was classified according to the following interpretative scale: not important, < 1.50; somewhat important, 1.50 - 2.49; important, 2.50 - 3.50; very important, 3.51 - 4.50; and extremely important, > 4.50.

Job Skill Items' Ratings. The participants perceived only one job skill item, maintain confidential material, to be extremely important, > 4.50, in the performance of their jobs. The participants perceived 57 out of 128 job skill items to be very important, 4.50 - 3.51 to the performance of their job. In Table 3 the mean and standard deviation are listed for each job skill item rated in the extremely important and very important category.

Table 3

Mean and Standard Deviation of the Job Skill Items Rated in the Extremely Important and Very Important Categories by Administrative Support Occupations Workers

Job Skill Item	*n*	*M*[a]	*SD*
Maintain confidential material	157	4.61	.84
Type/compose a document	156	4.34	.87
Develop a plan for organizing one's own work	155	4.34	.92
Create/prepare document using word processing software	154	4.33	.99
Create a new document	155	4.33	1.02
Detect all content, format & typo errors	154	4.32	1.03
Process electronic mail	156	4.27	1.02
Prepare materials for copying	156	4.21	1.06
Prepare correspondence	157	4.20	1.05
Print information	156	4.15	1.07
Process document received by facsimile machine	157	4.15	1.04
Gather & compile data for supervisor and company records	153	4.15	1.04
Photocopy document using appropriate equipment	156	4.14	1.15
Locate data	155	4.14	.96
Direct inquiries to appropriate person or department	156	4.12	1.12
Handle routine telephone communications	157	4.11	1.06
Maintain secure filing system	156	4.10	1.10
Revise existing document	156	4.08	1.11
Maintain telephone numbers & addresses	157	4.08	1.11
Access files	156	4.06	1.12
Design a table	156	4.06	1.11
Arrange meetings	156	4.05	1.13
Create/prepare documents using spreadsheet software	153	4.02	1.18
Distribute materials	157	4.01	1.15
Process mail	156	4.00	1.21

(table continued)

Job Skill Item	*n*	*M*[a]	*SD*
Prepare agenda and compile materials for meetings	153	3.99	1.13
File materials manually	157	3.99	1.18
Greet/receive visitors and clients	156	3.98	1.12
Edit documents keyed by others	155	3.97	1.10
Process voice mail	156	3.95	1.22
Arrange travel and itinerary for supervisor	156	3.94	1.33
Type documents composed by someone else	156	3.89	1.27
Insert a graphic in document	155	3.89	1.14
Maintain modern telecommunication technical knowledge	154	3.88	1.15
Create/prepare documents using presentation software	154	3.84	1.26
Decide on the best process for reproducing printed material	155	3.84	1.10
File materials electronically	156	3.83	1.21
Explain/describe office procedures to others	157	3.82	1.14
Design forms	153	3.81	1.19
Merge text using software	156	3.78	1.21
Arrange other activities/functions	151	3.78	1.08
Maintain supervisor's appointment calendar electronically	155	3.77	1.45
Coordinate work schedule and distribution	153	3.76	1.12
Compose written directions	156	3.76	1.24
Maintain backup files electronically	157	3.71	1.33
Process packages according to postal or courier service	156	3.71	1.35
Develop liaisons with business related organizations	156	3.69	1.27
Arrange conferences	156	3.69	1.31
Utilize courier services	156	3.68	1.34
Create high-quality visual aids	154	3.64	1.26
Process document received through computer modem	155	3.61	1.29
Set up records management system	155	3.59	1.27
Match software to work on hand	152	3.57	1.25

(table continued)

Job Skill Item	*n*	*M*[a]	*SD*
Develop and revise database using software	155	3.57	1.26
Scan data into document electronically	154	3.56	1.27
Order supplies	156	3.55	1.30
Assist employees in performing job	155	3.55	1.22
Access the Help function of software	154	3.55	1.19

Note. Interpretative scale: Extremely Important, > 4.50 and Very Important, 3.51 - 4.50.
[a]Response scale: 1=Not Important, 2=Somewhat Important (skill might be needed in the performance of the job), 3=Important (skill usually needed in performance of the job), 4=Very Important (skill needed in the performance of the job), and 5=Extremely Important (skill critical to the performance of the job)

The participants rated 51 out of 128 job skill items as important, 2.50 - 3.50, to the performance of their job. In Table 4 the mean and standard deviation are listed for each job skill item rated in the important category.

Table 4

Mean and Standard Deviation of the Job Skill Items Rated in the Important Category by Administrative Support Occupations Workers

Job Skill Item	*n*	*M*[a]	*SD*
Purge records and/or files	155	3.47	1.27
Scan graphics into document electronically	154	3.45	1.30
Develop & maintain administrative services policies & procedures	155	3.41	1.39
Participate on task forces/committees	154	3.40	1.23
Transcribe notes	154	3.33	1.35
Maintain historical records	156	3.33	1.33
Receive and store office supplies	156	3.29	1.34
Maintain inventory of supplies	156	3.26	1.41
Process invoice for payment	157	3.26	1.53
Maintain employee records	156	3.26	1.56

(table continued)

Job Skill Item	*n*	*M*[a]	*SD*
Secure document notarization	153	3.25	1.53
Prepare an index of word processing directory/subdirectory	152	3.18	1.27
Manage office expenses	156	3.17	1.45
Prepare purchase requisitions	156	3.17	1.41
Complete travel vouchers/charge slips	152	3.16	1.41
Assist others in operating equipment	155	3.16	1.05
Maintain telephone log	156	3.13	1.48
Conduct orientation of new employees	157	3.10	1.42
Use a typewriter to complete preprinted forms, envelopes, & mailing labels	154	3.05	1.54
Use office reference library (books, journals, manuals)	156	3.05	1.30
Create documents using desktop-publishing software	156	3.05	1.47
Maintain software for current office use	154	3.03	1.40
Maintain supervisor's appointment calendar manually	155	3.03	1.60
Maintain inventory of forms	154	3.02	1.42
Create charts using desktop-publishing software	156	3.02	1.46
Layout a desktop-published document using available equipment	156	3.00	1.46
Plan for budgetary needs	156	3.00	1.41
Prepare and deliver oral presentations	156	2.99	1.32
Train others in operation of equipment	155	2.99	1.14
Train others in use of software	155	2.98	1.14
Create boilerplate/template/macro using software	152	2.95	1.46
Use on-line reference library	154	2.94	1.30
Custom design a desktop-published document	156	2.94	1.47
Create templates using desktop-publishing software	156	2.94	1.42
Maintain biographical data of employees	155	2.93	1.34
Create graphs using desktop-publishing software	156	2.90	1.44

(table continued)

Job Skill Item	*n*	*M*[a]	*SD*
Create/prepare documents using accounting software	152	2.83	1.50
Maintain office equipment inventory & leases for equipment	155	2.79	1.33
Purchase office equipment & furniture	156	2.78	1.26
Create/prepare documents using financial software	152	2.74	1.49
Schedule office equipment maintenance	155	2.74	1.34
Download images from digital camera into desktop document	155	2.72	1.45
Create/prepare document using project management software	153	2.72	1.47
Maintain information on production of administrative services	155	2.66	1.50
Maintain reference library	155	2.64	1.25
Take dictation at the keyboard	154	2.58	1.35
Calculate billing of services/products	153	2.58	1.43
Schedule & assign work to employees to meet priorities	154	2.56	1.59
Balance cash & receipts	155	2.55	1.49
Schedule staffing to meet work priorities	154	2.51	1.58
Conduct staff meetings	153	2.50	1.44

Note. Interpretative scale: Important, 2.50 - 3.50.
[a]Response scale: 1=Not Important, 2=Somewhat Important (skill might be needed in the performance of the job), 3=Important (skill usually needed in performance of the job), 4=Very Important (skill needed in the performance of the job), and 5=Extremely Important (skill critical to the performance of the job)

The participants perceived 19 out of 128 job skill items to be somewhat important, 1.51 - 2.49, to the performance of their job. No job skill item was rated as not important, < 1.50 by the participants. In Table 5 the mean and standard deviation are listed for each job skill item rated in the somewhat important category.

Table 5

Mean and Standard Deviation of the Job Skill Items Rated in the Somewhat Important Category by Administrative Support Occupations Workers

Job Skill Item	*n*	*M*[a]	*SD*
Perform regular equipment maintenance	155	2.43	1.29
Calculate payroll manually	154	2.42	1.64
Design an office layout	154	2.41	1.20
Provide continuing educations opportunities for others	155	2.41	1.52
Resolve personnel problems	156	2.37	1.50
Advertise for job opening(s)	156	2.37	1.39
Maintain accounting journals electronically	154	2.34	1.53
Receive, install, & store office equipment	155	2.34	1.24
Hire personnel	153	2.29	1.44
Evaluate employee's performance	155	2.25	1.47
Develop employee performance evaluation/standards	154	2.24	1.48
Take dictation in speedwriting	153	2.22	1.27
Receive/accept payments for services/products	151	2.19	1.42
Balance bank statements with checkbook	154	2.12	1.51
Prepare bank deposits	154	2.10	1.43
Take dictation in shorthand	153	2.01	1.29
Maintain accounting journal manually	155	1.99	1.35
Calculate payroll electronically	153	1.94	1.37
Create/prepare documents using voice recognition software	152	1.93	1.30

Note. Interpretative scale**:** Somewhat Important, 1.50 - 2.49.
[a]Response scale: 1=Not Important, 2=Somewhat Important (skill might be needed in the performance of the job), 3=Important (skill usually needed in performance of the job), 4=Very Important (skill needed in the performance of the job), and 5=Extremely Important (skill critical to the performance of the job)

Additional Job Skill Items Reported. At the end of each job skill category, the researcher provided space for participants to report and rate additional job skill items. The number of items that were added for each job skill category was: Organizing and

Planning Functions = 14; Maintaining Equipment and Supplies = 3; Performing Financial Functions = 11; Managing Records and Files = 4; Communications = 2; Document Production = 5; Information Distribution = 1; Producing Desktop-Publishing Documents = 2; and Supervising Personnel = 1 (see Appendix O).

Objective 2-Importance of Job Skill Categories. The second objective was to determine the importance of administrative support job skill categories in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions. The job skill items in each of the nine categories were factor analyzed to determine if the item (variable) could be confirmed to measure a single construct. The researcher used the minimum acceptable factor loading of .30 (Hair et al., 1998). In the category, Organizing and Planning Function, the 11 job skill items forced on one factor had factor loadings from .84 to .43. In the category, Maintaining Equipment and Supplies, the 13 job skill items forced on one factor had factor loadings from .81 to .62. In the category, Performing Financial Functions, the 14 job skill items forced on one factor had factor loadings from .85 to .54. In the category, Managing Records and Files, the 13 job skill items had factor loadings of .75 to .53. In the category, Communications, the 13 job skill items had factor loadings of .77 to .53. In the category, Document Production, the 36 job skill items had factor loadings of .78 to .37. The three job skill items that had the lowest factor loadings: create/prepare documents using voice recognition software (.37), take dictation in shorthand (.37), and use a typewriter to complete preprinted forms, envelopes, and mailing labels (.36). In the category, Information Distribution, the 8 job skill items had factor loadings of .86 to .67. In the category, Producing Desktop

Publishing Documents, the 7 job skill items had factor loadings of .98 to .82. In the category, Supervising Personnel, the 13 job skill items had factor loadings of .91 to .61. The percentage of variance and factor loading of each job skill item are provided in Appendix P.

The researcher created summated scales. "A summated scale is a composite value for a set of variables calculated by such simple procedures as taking the average of the variables in the scale" (Hair et al., 1998, p. 129). Using the computed average score of the nine job skills categories, the researcher determined the importance of the nine job skills categories using the following interpretive scale: not important, < 1.50; somewhat important, 1.50 - 2.49; important, 2.50 - 3.50; very important, 3.51 - 4.50; and extremely important, > 4.50. Four categories were rated in the Very Important category, 3.51 to 4.50, and five categories were rated in the Important category, 2.50 to 3.50. In Table 6 the means, standard deviations, Cronbach's Coefficient Alpha, minimum and maximum scores of the nine job skill categories are presented.

Table 6

Means, Standard Deviations, Cronbach's Coefficient Alpha, Minimum and Maximum Scores for the Nine Job Skill Categories Reported by Administrative Support Occupations Workers

Job Skill Category	*n*	*M*[a]	Min	Max	*SD*	*α*
Information Distribution	153	3.91	1	5	.94	.91
Communications	151	3.76	1.54	5	.75	.87
Organizing & Planning	142	3.72	1.64	5	.81	.87
Document Productions	139	3.56	1.64	5	.73	.95
Managing Records & Files	150	3.50	1.46	5	.83	.89
Maintaining Equipment & Supplies	152	2.96	1	5	.92	.92

(table continued)

Job Skill Category	*n*	*M*[a]	Min	Max	*SD*	*α*
Producing Desktop Publishing Documents	155	2.94	1	5	1.38	.98
Supervising Personnel	150	2.63	1	5	1.19	.95
Performing Financial Functions	145	2.57	1	5	1.08	.94

Note. *N* = 157 Interpretative scale: Not Important, < 1.50; Somewhat Important, 1.51 - 2.49; Important, 2.50 to 3.50; Very Important, 3.51 - 4.50; and Extremely Important, > 4.50

[a]Response scale: 1=Not Important, 2=Somewhat Important (skill might be needed in the performance of the job), 3=Important (skill usually needed in performance of the job), 4=Very Important (skill needed in the performance of the job), and 5=Extremely Important (skill critical to the performance of the job)

Objective 3-Personal and Professional Demographic Characteristics of Participants. The third objective was to describe workers who are currently employed in administrative support occupations positions on the following selected demographic characteristics:

(a) age;

(b) gender;

(c) job title;

(d) years of work experience in the field of administrative support occupations;

(e) highest level of education completed;

(f) size of the office (as measured by the total number of employees) at the location where participant is employed;

(g) type of community (as measured by population size) in which the office of employment is located;

(h) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(i) type of organization (as measured by the Department of Labor {DOL} Standard Industrial Classification [SIC] designation) in which the participant is employed.

Age, Gender, and Highest Education Level Completed. The majority of the participants were in two age categories: 40-49 (n = 54, 34.8%) and 50-59 (n = 53, 34.2%). Two participants did not report their age category. Almost all the participants were females (n = 155, 99.4%). One participant did not indicate gender. Forty-nine participants (31.4%) reported having a high school diploma and 96 (61.5%) participants reported having completed some education beyond high school. Eleven (7.0%) participants reported their highest degree earned as other. One participant did not indicate the highest degree earned. The other category included Certified Professional Secretary, Certified Administrative Professional, paralegal and college certifications, Master of Arts, and some college credit as highest level of education completed. In Table 7, the number and percentage of participants who reported age category, gender, and highest level of education completed are reported.

Table 7

Age, Gender, and Highest Level of Education Completed by Administrative Support Occupations Workers

Demographics	*n*	%
Age Category		
20-29 Years	7	4.5
30-39 Years	25	16.2
40-49 Years	54	34.8
50-59 Years	53	34.2

(table continued)

Demographics	*n*	%
Age Category (continued)		
60-69 Years	12	7.7
Over 69 Years	4	2.6
Gender		
Female	155	99.4
Male	1	.6
Highest Level of Education Completed		
High School Diploma	49	31.4
Associate Degree	35	22.4
Bachelor's Degree	27	17.3
Certificate Program(business school)	23	14.7
Certificate Program(vocational school)	11	7.1
Other[a]	11	7.1

Note. $N = 157$
[a]Community College Certificate ($n = 1$); Working on 3 College Certificates ($n = 1$); College Credit ($n = 7$); Masters of Art ($n = 2$).

Participants' Job Titles. The participants were asked to report their current job title. The participants reported 70 job titles. Twenty-eight participants (19.5%) reported administrative assistant as their job title and 20 (13.9%) listed executive assistant as their job title. Thirteen participants did not report a job title. In Table 8 the number and percentage of participants who reported their job titles are listed.

Table 8

Administrative Support Occupations Workers' Job Titles

Job Title	*n*	%
Administrative Assistant	28	19.5
Executive Assistant	20	13.9

(table continued)

Job Title	*n*	%
Executive Secretary	7	4.9
Senior Administrative Assistant	5	3.5
Secretary	4	2.9
Executive Administrative Assistant	3	2.1
Administrative Secretary	3	2.1
Administrative Coordinator	3	2.1
Senior Secretary	3	2.1
Training Coordinator	2	1.3
Administrative Technician I	2	1.3
Staff Assistant to Vice President	2	1.3
Project Manager	2	1.3
Assistant	2	1.3
Senior Support Staff Administrative Assistant	2	1.3
Senior Administrative Associate	2	1.3
Legal Secretary	1	.7
Senior Executive Administrator	1	.7
Assistant to Director	1	.7
Secretary II	1	.7
Administrative Associate	1	.7
Receptionist/Bookkeeper/Data Entry Clerk	1	.7
Clerk Typist II	1	.7
Claims Assistant	1	.7
Assistant to Vice President	1	.7
Real Estate Paralegal	1	.7
Legal Assistant	1	.7
Corporate Administrator	1	.7
Staff Administrative Assistant	1	.7
Personnel Clerk	1	.7

(table continued)

Job Title	*n*	%
Budget Analyst	1	.7
Paralegal	1	.7
Executive Office Assistant	1	.7
Administrative Research Support Assistant	1	.7
Technical Assistant	1	.7
EEO/Diversity Analyst	1	.7
General Office Secretary	1	.7
Administrative Specialist I	1	.7
Senior Administrative Assistant/Department Buyer	1	.7
Administrative Assistant V	1	.7
Administrative Leader	1	.7
Administrative Assistant Supervisor	1	.7
Purchasing/Inventory/Safety Coordinator	1	.7
Administrative Assistant/Secretary	1	.7
HR Legal Assistant	1	.7
Lead Help Desk Support Analyst	1	.7
Personnel Administrative Coordinator	1	.7
Office Manager/Project Coordinator	1	.7
Secretary/Office Automation	1	.7
Administrative Assistant to Vice President	1	.7
Medical Transcriptionist	1	.7
Health Information Management Systems Specialist/Supervisor	1	.7
Word Processor/Graphics	1	.7
Resource Assistant	1	.7
Marketing Communications Coordinator	1	.7
Department Secretary	1	.7
Executive Administrative Assistant to President	1	.7
Secretary III	1	.7

(table continued)

Job Title	*n*	%
Administrative Supervisor	1	.7
Executive Assistant I	1	.7
Franchise Coordinator	1	.7
Traffic Service Coordinator	1	.7
Senior Administrative	1	.7
Support Staff Administrative Assistant	1	.7
Office Assistant	1	.7
Senior Staff Assistant	1	.7
Staff Associate	1	.7
Administrative Technician	1	.7
Nursing Lab Manager	1	.7
Pastor's Assistant	1	.7

Note. $N = 157$

Number of Years of Work Experience. The participants reported the number of years of work experience in the field of administrative support occupations "as of last or nearest anniversary date." The minimum number of years worked was 1 year and the maximum was 48 years. The mean was 21.83 ($n = 151$, $SD = 10.20$). Six participants did not report the number of years of work experience in the field.

Size of the Office. The participants reported the size of the office as measured by the total number of employees at the location where they were employed. Fifty participants (33.4%) reported the office size measured by the total number of employees at their office location as large and 65 (43.3%) reported the office size measured by the total number of employees at their office location as small or very small. Seven participants did not report information about the office size. In Table 9 the number and percentage

of participants who reported the size of office as measured by the total number of employees at the location where they were employed are provided.

Table 9

Size of Office as Measured by the Total Number of Employees at the Location Where the Administrative Support Occupations Worker was Employed

Office Size	*n*	%
Very Small (1-10 employees)	26	17.3
Small (11-99 employees)	39	26.0
Medium (100-499 employees)	35	23.3
Large (500 or more employees)	50	33.4

Note. $N = 157$

Type of Community. The participants were asked to indicate the type of community, as measured by population size, in which the office of employment is located. Over half of the participants (n = 95, 63.4%) reported the type of community as measured by population size in which the office of employment was located as a large city. Seven participants did not report the type of community as measured by population size in which the office of employment was located. In Table 10 the number and percentage of participants who reported the type of community as measured by population size in which the office of employment was located are provided.

Table 10

Type of Community by Population Size in Which the Administrative Support Occupations Worker's Office of Employment was Located

Type of Community	*n*	%
Small city/town (less than 5,000)	8	5.3
Medium city (5,001-25,000)	24	16.0

(table continued)

Type of Community	*n*	%
Medium-large city (25,001-50,000)	23	15.3
Large city (greater than 50,001)	95	63.4

Note. $N = 157$

Scope of Organization. The participants were asked to report the scope of organization, measured as international, national, regional, state, local locations only, or one location, in which they are employed. Fifty-two participants (34.2%) reported the scope of organization as international. Five participants did not respond to this item. In Table 11 the number and percentage of the participants who reported the scope of organization, measured as international, national, regional, state, multiple-local locations, or one location, in which they are employed are provided.

Type of Organization. The participants were asked to report the type of organization, as measured by the Department of Labor (DOL) Standard Industrial Classification (SIC) designation in which they were employed. Fifty-four participants (36.5%) were employed in the service industries. Nine participants did not indicate the type organization as measured by the DOL SIC designation in which they are employed. In Table 12 the number and percentage of participants who reported their type of organization as measured by the DOL SIC designation are listed.

Table 11

Scope of Organization in Which the Administrative Support Occupations Worker was Employed

Scope of Organization	*n*	%
One location	30	19.7
Local locations only	17	11.2

(table continued)

Scope of Organization	*n*	%
State-wide locations	15	9.9
Regional locations	14	9.2
Nation-wide location	24	15.8
International locations	52	34.2

Note. $N = 157$

Table 12

Type of Organization as Measured by the DOL SIC Designation in Which the Administrative Support Occupations Worker was Employed

Standard Industrial Classification Code (SIC)	*n*	%
Services	54	36.5
Transportation, Communication, Electric, Gas, & Sanitary Services	26	17.6
Manufacturing	19	12.8
Public Administration	16	10.8
Finance, Insurance, & Real Estate	13	8.8
Construction	8	5.4
Mining	7	4.7
Wholesale & Retail Trade	3	2.0
Agriculture, Forestry, and Fishing	2	1.4

Note. $N = 157$

Objective 4-Tools Used. The fourth objective was to determine whether or not selected software/ programs, office technology, and other office items are used in the performance of administrative support office jobs as perceived by workers currently employed in administrative support occupations positions. Participants were asked to select all software/programs used to perform their jobs. Frequencies and percentages of the total responses of each item were used.

Software/Programs Used In Performance of Job. In the performance of their jobs, the software that was reported as used by the largest percentage of participants was word processing software (n = 153, 97.5%). The software that was reported as used least by the participants was voice recognition software (n = 2, 1.3%). In the Other category, 25 participants listed a variety of software/programs that they used in the performance of their jobs. (See Appendix Q) Some participants listed as many as four different software/programs used in the performance of their jobs in the other category. In Table 13 the number and percentage of each software/program reported as used by participants are provided.

Table 13

Software/Programs Reported as Used by Administrative Support Occupations Workers

	Use		Don't Use		Total	
Software/Programs	*N*	%	*n*	%	*n*	%
Word Processing	153	97.5	4	2.5	157	100.0
Spreadsheet	141	89.8	16	10.2	157	100.0
Electronic Mail	127	80.9	30	19.1	157	100.0
Calendaring/Scheduling	118	75.2	39	24.8	157	100.0
Internet	117	74.5	40	25.5	157	100.0
Presentation	116	73.9	41	26.1	157	100.0
Database	87	55.4	70	44.6	157	100.0
Intranet	63	40.1	94	59.9	157	100.0
Desktop Publishing	53	33.8	104	66.2	157	100.0
Accounting	50	31.8	107	68.2	157	100.0
Instant Messenger	46	29.3	111	70.7	157	100.0
Graphic	46	29.3	111	70.7	157	100.0
Operating System	40	25.5	117	74.5	157	100.0
Network	28	17.8	129	82.2	157	100.0

(table continued)

	Use		Don't Use		Total	
Software/Programs	*N*	%	*n*	%	*n*	%
Project Management	21	13.4	136	86.6	157	100.0
Financial	21	13.4	136	86.6	157	100.0
Conference	19	12.1	138	87.9	157	100.0
Statistical	8	5.1	149	94.9	157	100.0
Personal Information Manager	6	3.8	151	96.2	157	100.0
Voice Recognition	2	1.3	155	98.7	157	100.0

Reported Software/Program Names. In the space provided next to each software/program, the participants reported the brand name of the software/programs used in the performance of their jobs. Several versions of the software/programs were provided by the participants. Some participants indicated that they used multiple brands of software/programs in the performance of their jobs. For example, one participant reported using Microsoft Word 97 and WordPerfect. Participants were asked if they checked the box next to each software/program to write on the space provided the brand name of the software/ program they used in the performance of their job. The most frequently reported names of software/programs for each type of software/program are listed by number and percentage in Table 14. In Appendix R, the number and percentage of other software/program brand names listed participants are provided.

Table 14

Software/Program Brand Names Reported by Administrative Support Occupations Workers

Software/Program Name Reported by Participants	*n*	%[a]
Word Processing Software:		
MS Word	139	90.8
Spreadsheet Software:		
MS Excel	138	97.9

(table continued)

Software/Program Name Reported by Participants	*n*	%[a]
Presentation Software:		
MS PowerPoint	107	92.2
E-mail Software:		
MS Outlook	75	59.1
Calendaring/Scheduling Software:		
MS Outlook	66	55.9
Database Software:		
MS Access	66	75.9
Internet Software:		
Internet Explorer	57	48.7
Operating Systems Software:		
MS Windows	35	87.5
Desktop Publishing Software:		
MS Publisher	26	49.1
Intranet Software:		
MS Internet Explorer	12	19.0
Project Management Software:		
MS Project	12	57.1
Instant Messenger Software:		
AOL	10	21.7
Graphic Software:		
MS Power Point	10	21.7
Accounting Software:		
Quicken	8	16.0
Network Software:		
Novell	5	17.9
Conference Software:		
MS Outlook	4	21.1
MS Net Meeting	4	21.1
Financial Software:		
SAP	3	14.3
MS Excel	3	14.3
Statistical Software:		
MS Excel	2	25.0
Personal Information Management Software:		
Blackberry	2	33.3
Voice Recognition Software:		
Customized by Corporation	1	50.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.
[a]Percentage based on those participants who reported they used the software/program

Office Technology and Other Items. By checking the listed office technology and other items, the participants indicated their use of office technology and other items in

the performance of their job. Almost all the participants indicated that they used the copier (n = 153, 97.5%), the fax machine (n = 150, 95.5%), the calculator (n = 147, 93.6%), the computer printer (n = 145, 92.4%), the multi-line telephone system (n = 143, 91.1%), and the personal computer (n = 142, 90.4%). Space was provided for the participants to list other office technology and items used in the performance of their jobs. Seven participants specified eight other items. Their responses included: zip drive, CD/RW, Xerox 8855, LCD projectors, CD-Burner, company's intranet, World Wide Web, and email. In Table 15 the number and percentage of each office technology and other office items reported as used by participants are provided.

Table 15

Administrative Support Occupations Workers Reported Use of Office Technology and Other Items in Job Performance

	Use		Don't Use		Total	
Office Technology & Other Items	*N*	%	*n*	%	*n*	%
Copier	153	97.5	4	2.5	157	100.0
Fax Machine	150	95.5	7	4.5	157	100.0
Calculator	147	93.6	10	6.4	157	100.0
Computer Printer	145	92.4	12	7.6	157	100.0
Multi-Line Telephone System	143	91.1	14	8.9	157	100.0
Personal Computer	142	90.4	15	9.6	157	100.0
Typewriter	116	73.9	41	26.1	157	100.0
Local Area Network	113	72.0	44	28.0	157	100.0
Scanner	105	66.9	52	33.1	157	100.0
Voice Mail via Telephone	99	63.1	58	36.9	157	100.0
Cellular Phone	92	58.6	65	41.4	157	100.0
Voice Mail via Answering Machine	81	51.6	76	48.4	157	100.0
Audio Conferencing	78	49.7	79	50.3	157	100.0

(table continued)

Office Technology & Other Items	Use		Don't Use		Total	
	N	%	*n*	%	*n*	%
Pager	70	44.6	87	55.4	157	100.0
Digital Camera	59	37.6	98	62.4	157	100.0
Laptop/Notebook	57	36.3	100	63.7	157	100.0
Postage Meter	55	35.0	102	65.0	157	100.0
Dictaphone	54	34.4	103	65.6	157	100.0
Video Conferencing	51	32.5	106	67.5	157	100.0
Electronic Bulletin Board	43	27.4	114	72.6	157	100.0
Internet Fax	41	26.1	116	73.9	157	100.0
Wide Area Network	37	23.6	120	76.4	157	100.0
Personal Digital Assistant	32	20.4	125	79.6	157	100.0
Single-line Telephone System	29	18.5	128	81.5	157	100.0
Computer Conferencing	27	17.2	130	82.8	157	100.0
Camcorder	12	7.6	145	92.4	157	100.0
Virtual Conferencing	12	7.6	145	92.4	157	100.0
Other[a] (list items)	7	4.5	150	95.5	157	100.0

[a] zip drive and CD-RW (*n* = 1); Xerox 8855 (*n* = 1); LCD Projectors (i.e. NEC, Proxima) (*n* = 1); CD-Burner (*n* = 1); E-mail (*n* = 1); Internet 'World Wide Web' and Company's Intranet (*n* = 1); and Company Intranet (*n* = 1)

Objective 5-Model to Explain the Variance. The fifth objective was to determine if a model exists explaining a significant portion of the variance in the summated subscale scores of the nine perceived importance of administrative support job skill categories from the following personal and professional demographic characteristics:

(a) age;

(b) gender;

(c) years of work experience in the field of administrative support occupations;

(d) highest level of education completed;

(e) size of the office (as measured by the total number of employees) at the location where participant is employed;

(f) type of community (as measured by population size) in which the office of employment is located;

(g) scope of organization (measured as international, national, regional, state, multiple-local locations, or one location) in which the participant is employed; and,

(h) type of organization (as measured by the DOL SIC designation) in which the participant is employed.

The analysis of this objective was accomplished using multiple regression analysis. Because there are nine subscales on the Administrative Support Occupations' Skill Inventory, nine separate regression analyses were calculated. A stepwise entry of the variables was used due to the exploratory nature of the research.

The dependent variables in these analyses were the summated scores on each of the nine subscales of the Administrative Support Occupations' Skill Inventory: Organizing and Planning Functions, Maintaining Equipment and Supplies, Performing Financial Functions, Managing Records and Files, Communications, Document Production, Information Distribution, Producing Desktop-Publishing Documents, and Supervising Personnel. Three of the independent variables, Job Title, the Standard Industrial Classification (SIC) of Organization/ Company, and Highest Degree Earned, were transformed into new variables that were dichotomous in nature.

The variable, gender, was coded as a dichotomous variable. The participants who reported gender as female were coded as "1" and males were coded "0". Almost

all the participants were females (n = 155, 98.7%), one participant reported gender as male, and one participant did not report gender. Therefore, the independent variable, gender, was eliminated as an explanatory variable.

For the variable, job title, 144 participants reported 70 job titles and 13 participants did not report their job title. The researcher grouped the participants' reported job titles into four categories using the Occupational Outlook Handbook 2000-01 Edition (Bureau of Labor Statistics, 2000). (See Appendix A) Only one participant reported a job title of Medical Transcriptionist, therefore, the researcher included this participant with the Word Processors, Typists, and Data Entry Keyers. In Table 16 the number and percentage of each job title category are provided.

Table 16

Administrative Support Occupations Workers Reported Job Title Categories

Job Title Categories	*n*	%
Secretary	126	80.2
Information Clerks	10	6.4
Records Processing	3	1.9
Word Processors, Typists, & Data Entry	3	1.9
Adjusters, Investigators, and Collectors	2	1.3

Note. $N = 157$

Since three of the four classes for job title did not have a sufficient number of reported cases to be included as separate variables for analysis, the researcher created a dichotomous variable for job title. This variable indicated whether or not the participants reported their job title as secretary. The participants were coded as "1" for secretary or "0" for not a secretary. This dichotomous variable was then included as the independent variable in the regression model.

For the Standard Industrial Classification (SIC) of Organization/ Company variable, there were nine classes: Agriculture, Forestry, and Fishing; Mining; Construction; Transportation, Communication, Electric, Gas, and Sanitary Services; Wholesale and Retail Trade; Finance, Insurance, and Real Estate; Services; Public Administration; and Manufacturing. Analysis of the nine classes of this variable revealed that four of the nine classes did not have a sufficient number of reported cases to be included as separate variables in the analysis (see Table 12). These classes were mining ($\underline{n}$ = 7), construction ($\underline{n}$ = 8), wholesale and retail trade ($\underline{n}$ = 3), and agriculture, forestry, and fishing ($\underline{n}$ = 2). In SPSS® for the variable, Job Title, the researcher recoded the original variables into five categories. They were "Service," "Finance, Insurance, and Real Estate," "Public Administration," "Transportation, Communication, Electric, Gas, and Sanitary Services," and "Manufacturing." The process of coding the dichotomous variables consisted of recoding the original variable in SPSS® and assigning a "1" if the participant indicated a presence of the characteristic and a "0" if the participant indicated an absence of the characteristic. These five dichotomous variables were then included as independent variables in the regression analysis.

In SPSS® for the variable, Highest Degree Earned, the researcher recoded the original variables. Since the researcher could not distinguish which certificate program was higher in the education level, both certificate program levels were combined to form a certificate program category. Two participants indicated that they had earned master's degrees. The researcher combined the bachelor's and master's degrees to form a category, bachelor's degree and higher. The researcher created four categories for highest degree earned. They were "Bachelor's and Higher," "Associate Degree,"

"Certificate Program," and "High School Diploma." The process of coding the dichotomous variables consisted of recoding the original variable in SPSS® and assigning a "1" if the participant indicated a presence of the characteristic and a "0" if the participant indicated an absence of the characteristic. These four dichotomous variables were then included as independent variables in the regression analysis.

The other variables used as explanatory variables in these analyses were:

(a) age;

(b) years of work experience in the field of administrative support occupations;

(c) size of the office (as measured by the total number of employees) at the location where participant is employed;

(d) type of community (as measured by population size) in which the office of employment is located; and,

(e) scope of organization (measured as international, national, regional, state, multiple-local locations, or one local) in which the participant is employed.

The independent variables included in the analysis were examined for the presence of multicollinearity. The preferred method of assessing multicollinearity according to Lewis-Beck (1980) is to regress each independent variable on all the other independent variables so that the relationship of each of the independent variables with all the other independent variables is considered. When any of the R^2s from equations which result from this procedure is near 1.0, there is high multicollinearity. When the cumulative R was checked to determine whether or not it approached 1.0, multi-collinearity problems arose with these variables. For example, the variable whether or not a participant had a high school diploma was collinear with the combination of

variables whether or not the participant had earned a Bachelor's Degree and Higher,… Associate Degree, and… Certificate Program. The variable that was found to have the lowest relationship with the dependent variables was selected for elimination from the analysis. This variable was whether or not the participant had earned a bachelor's degree or higher. Therefore, this variable was eliminated from the analysis, and the multicollinearity check was re-done to verify that this procedure eliminated the collinearity problem in this data.

For descriptive purposes, the two-way correlations between factors used as independent variables and the summated scores of the Information Distribution sub-scale in the first regression analysis are presented in Table 17. Only one of these variables was found to have a significant bivariate correlation with the summated scores on the Information Distribution sub-scale.

Table 17

Relationship Between Selected Characteristics of Administrative Support Occupations Workers and the Information Distribution's Summated Scores

Characteristics	*r*	*p*
Job Title[a]	.29	< .01
Age	-.13	.06
Size of Office[b]	-.09	.14
Number of Years Worked[c]	-.08	.17
Transportation SIC[d]	.07	.19
Manufacturing SIC[e]	.06	.21
Associate Degree[f]	-.06	.21
High School Diploma[g]	-.06	.23
Services SIC[h]	-.05	.28
Pop of City[i]	.04	.30
Com/Org Scope[j]	.03	.34
Certificate Program[k]	-.03	.36
Finance SIC[l]	.03	.37
Pub Admin SIC[m]	< - .01	.47

Note. One-tailed *p* value

[a]Whether or not a participant's job title was secretary [b]Size of the office as measured by the total number of employees at the location where participant is employed [c]Years of work experience in the field of administrative support occupations [d]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [e]Whether or not participants reported their SIC designation as manufacturing [f]Whether or not a participant earned an associate degree [g]Whether or not a participant earned a high school diploma [h]Whether or not participants reported their SIC designation as services [i]Type of community as measured by population size in which the office of employment is located [j]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [k]Whether or not a participant had completed a certificate program [l]Whether or not participants reported their SIC designation as finance, insurance, and real estate [m]Whether or not participants reported their SIC designation as public administration

The first regression analysis, which resulted in a significant model ($F(2, 154) = 9.45$, $p = < .01$), involved regressing the dependent variable, Information Distribution, against the independent variables. The regression model summary shows that the independent variables whether or not a participant's job title was secretary and age entered into the model. These two variables explained a total of 11.0% of the variance in summated scores on the Information Distribution sub-scale. Table 18 presents the results of the multiple regression analysis. The variable that entered the regression model first was whether or not a participant's job title was secretary. This variable explained 8.0% of the variance in summated scores on the Information Distribution sub-scale. This variable tended to be associated with an increase in mean scores on the Information Distribution sub-scale (see Table 18). The participants who reported their job title as secretary tended to have higher scores on the Information Distribution sub-scale.

One more variable, age, explained an additional 3.0% of the variance in the summated scores of Information Distribution sub-scale. The older participants tended to report lower scores on the Information Distribution sub-scale (see Table 18).

Table 18

Multiple Regression Analysis of the Information Distribution Summated Scores on Selected Characteristics of Administrative Support Occupations Workers

Source	*df*	*SS*	*F*	*p*
Regression	2	14.75	9.45	< .01
Residual	154	120.22		
Total	156	134.97		

Variables in the Equation

Variables	R^2 *Cumulative*	R^2 *Change*	*F Change*	*p Change*	*Beta*
Job Title[a]	.08	.08	14.19	< .01	.31
Age	.11	.03	4.40	.04	-.16

[a]Whether or not a participant's job title was secretary

Variables not in the Equation

Variables	*t*	*p*
Associate Degree[a]	-1.77	.08
Manufacturing SIC[b]	1.46	.15
Size of Office[c]	-1.17	.24
Services SIC[d]	-1.15	.25
Finance SIC[e]	.81	.42
Transportation SIC[f]	.80	.43
High School Diploma[g]	-.58	.56
Com/Org Scope[h]	.50	.62
Pop of City[i]	.16	.88
Number of Years Worked[j]	-.12	.90
Pub Admin SIC[k]	-.09	.93
Certificate Program[l]	.03	.98

[a]Whether or not a participant earned an associate degree [b]Whether or not participants reported their SIC designation as manufacturing [c]Size of the office as measured by the total number of employees at the location where participant is employed [d]Whether or not participants reported their SIC designation as services [e]Whether or not participants reported their SIC designation as finance, insurance, and real estate [f]Whether or not participants reported their SIC designation as transportation, communication, electric,

gas, and sanitary services [g]Whether or not a participant earned a high school diploma [h]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [i]Type of community as measured by population size in which the office of employment is located [j]Years of work experience in the field of administrative support occupations [k]Whether or not participants reported their SIC designation as public administration [l]Whether or not a participant had completed a certificate program

For descriptive purposes, the two-way correlations between factors used as independent variables and Supervising Personnel's summated scores in the second regression analysis are presented in Table 19. One variable was found to have a significant bivariate correlation with the summated scores on the Supervising Personnel sub-scale. The second regression analysis did not result in a significant model when regressing the dependent variable, Supervising Personnel, against the independent variables.

Table 19

Relationship Between Selected Characteristics of Administrative Support Occupations Workers and the Supervising Personnel's Summated Scores

Characteristics	*r*	*p*
Com/Org Scope[a]	-.14	.04
Associate Degree[b]	-.14	.05
Pub Admin SIC[c]	.13	.05
Certificate Program[d]	.11	.09
Transportation SIC[e]	-.10	.12
Services SIC[f]	.08	.15
Size of Office[g]	-.07	.20
Finance SIC[h]	-.06	.21
Job Title[i]	-.06	.23
Age	-.03	.37
High School Diploma[j]	-.01	.45
Pop of City[k]	-.01	.45
Number of Years Worked[l]	-.01	.46
Manufacturing SIC[m]	-.01	.46

Note. One-tailed *p* value

[a]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [b]Whether or not a participant earned an associate degree [c]Whether or not participants reported their SIC

designation as public administration [d]Whether or not a participant had completed a certificate program [e]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [f]Whether or not participants reported their SIC designation as services [g]Size of the office as measured by the total number of employees at the location where participant is employed [h]Whether or not participants reported their SIC designation as finance, insurance, and real estate [i]Whether or not a participant's job title was secretary [j]Whether or not a participant earned a high school diploma [k]Type of community as measured by population size in which the office of employment is located [l]Years of work experience in the field of administrative support occupations [m]Whether or not participants reported their SIC designation as manufacturing

For descriptive purposes, the two-way correlations between factors used as independent variables and Producing Desktop-Publishing Documents' summated scores in the third regression analysis are presented in Table 20. One variables was found to have a significant bivariate correlation with the summated scores on the Producing Desktop-Publishing Documents sub-scale (see Table 20). The third regression analysis did not result in a significant model when regressing the dependent variable, Desktop-Publishing Document, against the independent variables.

Table 20

Relationship Between Selected Demographic Characteristics of Administrative Support Occupations Workers and the Producing Desktop-Publishing Documents' Summated Scores

Characteristics	*r*	*p*
Age	-.15	.03
Manufacturing SIC[a]	.10	.11
Number of Years Worked[b]	-.10	.12
Com/Org Scope[c]	.07	.20
Job Title[d]	-.06	.21
Associate Degree[e]	.06	.23
Pop of City[f]	.04	.30
Transportation SIC[g]	.04	.30
High School Diploma[h]	-.03	.36
Pub Admin SIC[i]	-.02	.40
Size of Office[j]	-.02	.41

(table continued)

Characteristics	*r*	*p*
Finance SIC[k]	.02	.42
Certificate Program[l]	-.01	.47
Services SIC[m]	<.01	.50

Note. One-tailed *p* value

[a]Whether or not participants reported their SIC designation as manufacturing [b]Years of work experience in the field of administrative support occupations [c]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [d]Whether or not a participant's job title was secretary [e]Whether or not a participant earned an associate degree [f]Type of community as measured by population size in which the office of employment is located [g]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [h]Whether or not a participant earned a high school diploma [i]Whether or not participants reported their SIC designation as public administration [j]Size of the office as measured by the total number of employees at the location where participant is employed [k]Whether or not participants reported their SIC designation as finance, insurance, and real estate [l]Whether or not a participant had completed a certificate program [m]Whether or not participants reported their SIC designation as services

For descriptive purposes, the two-way correlations between factors used as independent variables and Organizing and Planning Functions' summated scores in the fourth regression analysis are presented in Table 21. Two variables were found to have significant bivariate correlations with the summated scores on the Organizing and Planning Functions sub-scale.

Table 21

Relationship Between Selected Demographic Characteristics of Administrative Support Occupations Workers and the Organizing and Planning Functions' Summated Scores

Characteristics	*r*	*p*
Com/Org Scope[a]	.18	.01
Size of Office[b]	.15	.03
Job Title[c]	.12	.07
Pop of City[d]	.11	.09
High School Diploma[e]	.10	.10
Certificate Program[f]	-.11	.10
Transportation SIC[g]	.10	.11
Manufacturing SIC[h]	.07	.19
Age	-.06	.22

(table continued)

Characteristics	*r*	*p*
Finance SIC[i]	-.06	.22
Number of Years Worked[j]	.04	.30
Associate Degree[k]	.03	.36
Services SIC[l]	.02	.42
Pub Admin SIC[m]	.01	.44

Note. One-tailed *p* value

[a]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [b]Size of the office as measured by the total number of employees at the location where participant is employed [c]Whether or not a participant's job title was secretary [d]Type of community as measured by population size in which the office of employment is located [e]Whether or not a participant earned a high school diploma [f]Whether or not a participant had completed a certificate program [g]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [h]Whether or not participants reported their SIC designation as manufacturing [i]Whether or not participants reported their SIC designation as finance, insurance, and real estate [j]Years of work experience in the field of administrative support occupations [k]Whether or not a participant earned an associate degree [l]Whether or not participants reported their SIC designation as services [m]Whether or not participants reported their SIC designation as public administration

The fourth regression analysis, which resulted in a significant model ($F(1, 155) = 4.96$, $p = .03$), involved regressing the dependent variable, Organizing and Planning Functions, against the independent variables. The fourth regression model summary shows that the independent variable company/organizational scope entered into the model. Table 22 presents the results of the multiple regression analysis. This was the first and only variable that entered the model and it explained 3.0% of the variance in summated scores on the Organizing and Planning Functions sub-scale. The participants who worked for companies/organizations with larger scopes tended to report higher scores on the Organizing and Planning Functions sub-scale (see Table 22).

Table 22

Multiple Regression Analysis of the Organizing and Planning Functions' Summated Scores on Selected Characteristics of Administrative Support Occupations Workers

Source	*df*	*SS*	*F*	*p*
Regression	1	2.88	4.96	.03
Residual	155	89.86		
Total	156	92.74		

Variables in the Equation

Variables	R^2 *Cumulative*	R^2 *Change*	*F Change*	*p Change*	*Beta*
Comp/Org Scope[a]	.03	.03	4.96	.03	.18

[a]Scope of organization measured as international, national, regional, state, multiple-local locations, or one local in which the participant is employed

Variables not in the Equation

Variables	*t*	*p*
Job Title[a]	1.60	.11
Certificate Program[b]	-1.45	.15
High School Diploma[c]	1.30	.20
Size of Office[d]	1.14	.26
Transportation SIC[e]	.93	.35
Services SIC[f]	.93	.35
Pop of City[g]	.79	.43
Age	-.77	.44
Finance SIC[h]	-.76	.45
Pub Admin SIC[i]	.63	.53
Number of Years Worked[j]	.61	.54
Associate Degree[k]	.29	.77
Manufacturing SIC[l]	.19	.85

[a]Whether or not a participant's job title was secretary [b]Whether or not a participant had completed a certificate program [c]Whether or not a participant earned a high school diploma [d]Size of the office as measured by the total number of employees at the location where participant is employed [e]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services

[f]Whether or not participants reported their SIC designation as services [g]Type of community as measured by population size in which the office of employment is located [h]Whether or not participants reported their SIC designation as finance, insurance, and real estate [i]Whether or not participants reported their SIC designation as public administration [j]Years of work experience in the field of administrative support occupations [k]Whether or not a participant earned an associate degree [l]Whether or not participants reported their SIC designation as manufacturing

For descriptive purposes, the two-way correlations between factors used as independent variables and Maintaining Equipment and Supplies' summated scores in the fifth regression analysis are presented in Table 23. No variables were found to have significant bivariate correlations with the summated scores on the Maintaining Equipment and Supplies sub-scale. The fifth regression analysis did not result in a significant model when regressing the dependent variable, Maintaining Equipment and Supplies, against the independent variables.

Table 23

Relationship Between Selected Demographic Characteristics of Administrative Support Occupations Workers and the Maintaining Equipment and Supplies' Summated Scores

Characteristics	*r*	*p*
Pub Admin SIC[a]	.11	.08
Size of Office[b]	-.08	.17
Manufacturing SIC[c]	-.08	.17
Age	-.07	.19
Finance SIC[d]	-.06	.22
Services SIC[e]	.05	.26
Job Title[f]	.05	.28
Certificate Program[g]	-.04	.30
Number of Years Worked[h]	-.04	.32
High School Diploma[i]	.03	.34
Associate Degree[j]	.03	.38
Transportation SIC[k]	-.02	.38
Pop of City[l]	.02	.42
Com/Org Scope[m]	< .01	.50

Note. One-tailed *p* value

[a]Whether or not participants reported their SIC designation as public administration [b]Size of the office as measured by the total number of employees at the location where participant is employed [c]Whether or not participants reported their SIC designation as

manufacturing [d]Whether or not participants reported their SIC designation as finance, insurance, and real estate [e]Whether or not participants reported their SIC designation as services [f]Whether or not a participant's job title was secretary [g]Whether or not a participant had completed a certificate program [h]Years of work experience in the field of administrative support occupations [i]Whether or not a participant earned a high school diploma [j]Whether or not a participant earned an associate degree [k]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [l]Type of community as measured by population size in which the office of employment is located [m]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed

For descriptive purposes, the two-way correlations between factors used as independent variables in the sixth regression and Performing Financial Functions' summated scores are presented in Table 24. One variable was found to have a significant bivariate correlation with the summated scores on the Performing Financial Functions sub-scale. The sixth regression analysis did not result in a significant model when regressing the dependent variable, Performing Financial Functions, against the independent variables.

Table 24

Relationship Between Selected Demographic Characteristics of Administrative Support Occupations Workers and the Performing Financial Functions' Summated Scores

Characteristics	*r*	*p*
Com/Org Scope[a]	-.14	.04
Pub Admin SIC[b]	.10	.10
Age	-.10	.11
Job Title[c]	-.06	.25
Associate Degree[d]	.05	.27
Finance SIC[e]	.04	.31
Pop of City[f]	.04	.32
Size of Office[g]	-.03	.34
Transportation SIC[h]	.03	.34
Services SIC[i]	-.03	.36
Number of Years Worked[j]	.02	.43
Certificate Program[k]	< -.01	.48
High School Diploma[l]	< -.01	.49
Manufacturing SIC[m]	< .01	.49

Note. One-tailed *p* value
[a]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [b]Whether or not participants reported their SIC designation as public administration [c]Whether or not a participant's job title was secretary [d]Whether or not a participant earned an associate degree [e]Whether or not participants reported their SIC designation as finance, insurance, and real estate [f]Type of community as measured by population size in which the office of employment is located [g]Size of the office as measured by the total number of employees at the location where participant is employed [h]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [i]Whether or not participants reported their SIC designation as services [j]Years of work experience in the field of administrative support occupations [k]Whether or not a participant had completed a certificate program [l]Whether or not a participant earned a high school diploma [m]Whether or not participants reported their SIC designation as manufacturing

For descriptive purposes, the two-way correlations between factors used as independent variables and Managing Records and Files' summated scores in the seventh regression analysis are presented in Table 25. One variable was found to have a significant bivariate correlation with the summated scores on the Managing Records and Files subscale. The seventh regression analysis did not result in a significant model when regressing the dependent variable, Managing Records and Files, against the independent variables.

Table 25

Relationship Between Selected Demographic Characteristics of Administrative Support Occupations Workers and the Managing Records and Files' Summated Scores

Characteristics	*r*	*p*
Job Title[a]	.14	.04
Pub Admin SIC[b]	-.13	.06
Manufacturing SIC[c]	.12	.07
Transportation SIC[d]	.03	.10
Age	-.07	.20
Certificate Program[e]	-.06	.23
Com/Org Scope[f]	.06	.24
Associate Degree[g]	.06	.25
Size of Office[h]	.04	.31
High School Diploma[i]	-.03	.38

(table continued)

Characteristics	*r*	*p*
Services SIC[j]	-.02	.40
Pop of City[k]	.02	.41
Finance SIC[l]	-.02	.42
Number of Years Worked[m]	-.01	.45

Note. One-tailed *p* value

[a]Whether or not a participant's job title was secretary [b]Whether or not participants reported their SIC designation as public administration [c]Whether or not participants reported their SIC designation as manufacturing [d]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [e]Whether or not a participant had completed a certificate program [f]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [g]Whether or not a participant earned an associate degree [h]Size of the office as measured by the total number of employees at the location where participant is employed [i]Whether or not a participant earned a high school diploma [j]Whether or not participants reported their SIC designation as services [k]Type of community as measured by population size in which the office of employment is located [l]Whether or not participants reported their SIC designation as finance, insurance, and real estate [m]Years of work experience in the field of administrative support occupations

For descriptive purposes, the two-way correlations between factors used as independent variables and Communications' summated scores in the eighth regression analysis are presented in Table 26. One variable was found to have a significant bivariate correlation with the summated scores on the Communications sub-scale.

Table 26

Relationship Between Selected Demographic Characteristics of Administrative Support Occupations Workers and the Communications' Summated Scores

Characteristics	*r*	*p*
Job Title[a]	.18	.01
Pop of City[b]	.12	.07
Size of Office[c]	.09	.14
Finance SIC[d]	.07	.18
Transportation SIC[e]	.07	.19
Number of Years Worked[f]	.07	.20
Services SIC[g]	-.04	.33
Age	-.03	.35
Certificate Program[h]	-.03	.37

(table continued)

Characteristics	*r*	*p*
Com/Org Scope[i]	.03	.38
Pub Admin SIC[j]	-.02	.40
Associate Degree[k]	-.02	.43
Manufacturing SIC[l]	-.01	.46
High School Diploma[m]	< -.01	.49

Note. One-tailed *p* value

[a]Whether or not a participant's job title was secretary [b]Type of community as measured by population size in which the office of employment is located [c]Size of the office as measured by the total number of employees at the location where participant is employed [d]Whether or not participants reported their SIC designation as finance, insurance, and real estate [e]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [f]Years of work experience in the field of administrative support occupations [g]Whether or not participants reported their SIC designation as services [h]Whether or not a participant had completed a certificate program [i]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [j]Whether or not participants reported their SIC designation as public administration [k]Whether or not a participant earned an associate degree [l]Whether or not participants reported their SIC designation as manufacturing [m]Whether or not a participant earned a high school diploma

The eighth regression analysis, which resulted in a significant model ($F(1, 155) = 5.41$, $p = .02$), involved regressing the dependent variable, Communications, against the independent variables. The regression model summary shows that the independent variable whether or not a participant's job title was secretary entered into the model. This was the first and only variable that entered the model and it explained 3.0% of the variance in summated scores on the Communication sub-scale. The participants who reported their job title as secretary tended to report higher scores on the Communications sub-scale (see Table 27).

Table 27

Multiple Regression Analysis of the Communications' Summated Scores on Selected Characteristics of Administrative Support Occupations Workers

Source	*df*	*SS*	*F*	*p*
Regression	1	2.83	5.41	.02
Residual	155	81.07		
Total	156	83.90		

Variables in the Equation

Variables	R^2 *Cumulative*	R^2 *Change*	*F Change*	*p Change*	*Beta*
Job Title[a]	.03	.03	5.41	.02	.18

[a]Whether or not a participant's job title was secretary

Variables not in the Equation

Variables	*t*	*p*
Size of Office[a]	1.28	.20
Pop of City[b]	1.30	.20
Finance SIC[c]	1.16	.25
Transportation SIC[d]	.89	.38
Number of Years Worked[e]	.68	.50
Age	-.65	.52
Services SIC[f]	-.63	.53
Associate Degree[g]	-.51	.61
Com/Org Scope[h]	.37	.72
Pub Admin SIC[i]	-.27	.79
Certificate Program[j]	-.26	.80
Manufacturing SIC[k]	.16	.88
High School Diploma[l]	.13	.90

[a]Size of the office as measured by the total number of employees at the location where participant is employed [b]Type of community as measured by population size in which the office of employment is located [c]Whether or not participants reported their SIC designation as finance, insurance, and real estate [d]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [e]Years of work experience in the field of administrative support occupations [f]Whether or not participants reported their SIC designation as services [g]Whether or not

a participant earned an associate degree [h]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [i]Whether or not participants reported their SIC designation as public administration [j]Whether or not a participant had completed a certificate program [k]Whether or not participants reported their SIC designation as manufacturing [l]Whether or not a participant earned a high school diploma

For descriptive purposes, the two-way correlations between factors used as independent variables and Document Production's summated scores in the ninth regression are presented in Table 28. Four variables were found to have significant bivariate correlations with the summated scores on the Document Production sub-scale.

Table 28

Relationship Between Selected Demographic Characteristics of Administrative Support Occupations Workers and the Document Production's Summated Scores

Characteristics	*r*	*p*
Age	-.21	< .01
Job Title[a]	.19	.01
High School Diploma[b]	-.14	.04
Manufacturing SIC[c]	.14	.04
Associate Degree[d]	.11	.08
Com/Org Scope[e]	.01	.09
Finance SIC[f]	-.10	.10
Pop of City[g]	.08	.17
Transportation SIC[h]	.06	.24
Pub Admin SIC[i]	-.05	.28
Certificate Program[j]	-.05	.29
Size of Office[k]	-.04	.31
Number of Years Worked[l]	.01	.45
Services SIC[m]	< -.01	.48

Note. One-tailed *p* value

[a]Whether or not a participant's job title was secretary [b]Whether or not a participant earned a high school diploma [c]Whether or not participants reported their SIC designation as manufacturing [d]Whether or not a participant earned an associate degree program [e]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [f]Whether or not participants reported their SIC designation as finance, insurance, and real estate [g]Type of community as measured by population size in which the office of employment is located [h]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and sanitary services [i]Whether or not participants

reported their SIC designation as public administration [j]Whether or not a participant had completed a certificate [k]Size of the office as measured by the total number of employees at the location where participant is employed [l]Years of work experience in the field of administrative support occupations [m]Whether or not participants reported their SIC designation as services

The ninth regression analysis, which resulted in a significant model ($\underline{F}(3, 153) = 7.13$, $\underline{p} = < .01$), involved regressing the dependent variable, Document Production, against the independent variables. The regression model summary shows that the independent variables age, whether or not a participant's job title was secretary, and whether or not participants reported their SIC designation as manufacturing entered into the model. These variables explained a total of 12.0% of the variance in the summated scores on the Document Production sub-scale.

The first variable that entered the model was age and it explained 4.0% of the variance in summated scores on the Document Production sub-scale. This variable tended to be associated with a decrease in the Document Production's summated scores. The older participants tended to report lower scores on the Document Production sub-scale.

Two more variables, whether or not a participant's job title was secretary and whether or not participants reported their SIC designation as manufacturing, explained an additional 8.0% of the variance in the summated scores of Document Production sub-scale. Those participants who reported their job title as secretary tended to report higher scores on the Document Production sub-scale. Those participants who reported their company/organization's SIC designation as manufacturing tended to report higher scores on the Document Production sub-scale than those who reported their

company/organization's SIC designation as something other than manufacturing. (See Table 29)

Table 29

Multiple Regression Analysis of the Document Production's Summated Scores on Selected Characteristics of Administrative Support Occupations Workers

Source	*df*	*SS*	*F*	*p*
Regression	3	9.03	7.13	< .01
Residual	153	64.59		
Total	156	73.62		

Variables in the Equation

Variables	R^2 *Cumulative*	R^2 *Change*	*F Change*	*p Change*	*Beta*
Age	.04	.04	7.16	< .01	-.25
Job Title[a]	.09	.05	7.77	< .01	.24
Manufacturing SIC[b]	.12	.03	5.69	.02	.18

[a]Whether or not a participant's job title was secretary
[b]Whether or not participants reported their SIC designation as manufacturing

Variables not in the Equation

Variables	*t*	*p*
Number of Years Worked[a]	1.89	.06
High School Diploma[b]	-1.73	.09
Transportation SIC[c]	1.00	.32
Size of Office[d]	-.97	.33
Associate Degree[e]	.73	.47
Com/Org Scope[f]	.72	.48
Finance SIC[g]	-.68	.50
Pop of City[h]	.67	.51
Pub Admin SIC[i]	-.31	.76
Certificate Program[j]	-.26	.80
Services SIC[k]	.06	.95

[a]Years of work experience in the field of administrative support occupations [b]Whether or not a participant earned a high school diploma [c]Whether or not participants reported their SIC designation as transportation, communication, electric, gas, and

sanitary services [d]Size of the office as measured by the total number of employees at the location where participant is employed [e]Whether or not a participant earned an associate degree program [f]Scope of organization measured as international, national, regional, state, multiple local locations, or one local in which the participant is employed [g]Whether or not participants reported their SIC designation as finance, insurance, and real estate [h]Type of community as measured by population size in which the office of employment is located [i]Whether or not participants reported their SIC designation as public administration [j]Whether or not a participant had completed a certificate [k]Whether or not participants reported their SIC designation as services

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This research was designed to identify the job skills that need to be taught in an associate degree program for office information systems graduates. Specifically, the researcher sought to determine the importance of the job skills needed by office information systems/administration graduates with implications for curricular revision. The study addressed the following objectives: (1) to determine the importance of administrative support job skills in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions; (2) to determine the importance of administrative support job skill categories in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions; (3) to describe workers who are currently employed in administrative support occupations positions on selected personal and professional demographic characteristics; (4) to determine whether or not selected software/programs, office technology, and other office items are used in the performance of administrative support office jobs as perceived by workers currently employed in administrative support occupations positions; (5) to determine if a model exists explaining a significant portion of the variance in the perceived importance of administrative support job skill categories in the performance of administrative support jobs from personal and professional demographic characteristics.

The information collected from this study can be used to upgrade and improve curricula. Specifically, educators can use this information to review existing curriculum, and determine equipment and facility needs. Educators can use this

information to develop continuing education courses such as short courses and workshops. Higher education administrators can use the information to provide documentation to meet national, regional, and state accreditation standards.

Employers can use this information to verify job descriptions and develop training programs for employees. Students, potential employees, can use this information to identify job skill items needed in the workplace and type of office technology tools used to perform the jobs.

Population and Sample

The target population of the study included administrative support occupations workers in the United States. The accessible population of the study was operationally defined as the members of the International Association of Administrative Professionals (IAAP) in Louisiana, Mississippi, and East Texas (including Houston, Texas). There were 27 IAAP chapters in these states. The total number of IAAP members in these chapters was 1,302. From the 1,302 IAAP members, the researcher randomly selected 302 members to serve as the sample for this study. From the remaining 1,000 IAAP members, the researcher randomly selected 100 members to serve as the field-test participants for this study.

Instrument Development and Data Collection Procedures

Instrument Development. Using information collected from the review of literature, the Administrative Support Occupations Skill Standards (V-TECS, 1996), a focus group, and a panel of experts, the researcher developed the Administrative Support Occupations' Skill Inventory instrument. The instrument included nine job

skill categories with 128 items, 20 software/programs, 28 office items/tools, and 9 demographic-related items. (See Appendix J)

Field-Test Data Collection. One hundred participants selected from the IAAP membership list of 1,000 were sent a pre-notification letter. Seven days later, a questionnaire packet was sent to each participant. Each questionnaire packet included a cover letter with a $2 bill, the questionnaire booklet, a sheet listing the standard industrial classification division structure (SIC codes), and a stamped, addressed coded return envelope. Seven days (one week) after the initial mailing date of the questionnaire packet, each participant received a post-card thank you/reminder. Three weeks after the initial mailing date of the questionnaire packet, all non-respondents were sent a replacement questionnaire packet. Six weeks after the initial mailing date of the questionnaire packet, 33 of the 100 field-test participants had not responded. The researcher analyzed the data collected from the 58 participants.

The reliability of each subscale of the questionnaire was checked using Cronbach's alpha coefficient of .70. The Cronbach's coefficient alpha for the nine job skill categories' subscale was calculated: Organizing and Planning Function ($\underline{n}$ = 54, $\underline{a}$ = .86), Maintaining Equipment and Supplies ($\underline{n}$ = 55, $\underline{a}$ = .93), Performing Financial Functions ($\underline{n}$ = 55, $\underline{a}$ = .91), Managing Records and Files ($\underline{n}$ = 55, $\underline{a}$ = .84), Communications ($\underline{n}$ = 56, $\underline{a}$ = .83), Document Production ($\underline{n}$ = 52, $\underline{a}$ = .94), Information Distribution ($\underline{n}$ = 56, $\underline{a}$ = .88), Producing Desktop-Publishing Documents ($\underline{n}$ = 56, $\underline{a}$ = .97) and Supervising Personnel ($\underline{n}$ = 56, $\underline{a}$ = .95).

Sample Data Collection. Two hundred ninety-nine participants were sent a pre-notification letter. Seven days later, a questionnaire packet was sent to each

participant. Each questionnaire packet included a cover letter with a $2 bill, the questionnaire booklet, a sheet listing the standard industrial classification division structure (SIC code), and a stamped, addressed coded return envelope. Seven days after the initial mailing date of the questionnaire packet, each participant received a post-card thank you/reminder. Three weeks after the initial mailing date of the questionnaire packet, all non-respondents were sent a replacement questionnaire packet.

Six weeks after the initial mailing date of the questionnaire packet, the researcher contacted by telephone 10% or not less than 25 of the non-respondents. Twenty randomly selected item responses from the sample ($\underline{n}$ = 127) and the telephoned non-respondents ($\underline{n}$ = 27) were compared using the $\underline{t}$-test and chi square procedure (as appropriate) at the .05 to determine if any significant differences existed. Since only 2 of the 20 pre-selected items were significant, the researcher decided that there was no difference between telephoned non-respondents and sample respondents.

The reliability of each subscale for the nine job skill categories was checked using Cronbach's alpha coefficient of .70. The Cronbach's alpha for each subscale of the questionnaire was calculated: Organizing and Planning Function ($\underline{n}$ = 142, $\underline{a}$ = .87), Maintaining Equipment and Supplies ($\underline{n}$ =152, $\underline{a}$ = .92), Performing Financial Functions ($\underline{n}$ = 145, $\underline{a}$ = .94), Managing Records and Files ($\underline{n}$ = 150, $\underline{a}$ = .89), Communications ($\underline{n}$ = 151, $\underline{a}$ = .87), Document Production ($\underline{n}$ = 139, $\underline{a}$ = .95), Information Distribution ($\underline{n}$ = 153, $\underline{a}$ = .91), Producing Desktop-Publishing Documents ($\underline{n}$ = 155, $\underline{a}$ = .98) and Supervising Personnel ($\underline{n}$ = 150, $\underline{a}$ = .95).

Summary of Findings and Conclusions

For Objective 1, to determine the importance of administrative support job skills in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions, means and standard deviations were calculated for each job skill listed in Section I of the instrument. Each job skill was classified according to the following interpretative scale: less than 1.50—not important; 1.50 to 2.49—somewhat important; 2.50 to 3.50—important; 3.51 to 4.50—very important; and greater than 4.50—extremely important.

The participants perceived 1 (.8%) of 128 job skill items to be extremely important, 57 (44.5%) of 128 job skill items to be very important and 51 (39.8%) job skill items to be important in the performance of their jobs. Therefore, the researcher concluded from these findings that the participants perceived a large number (85.1%) of the job skill items to be important in the performance of their jobs.

The participants perceived nineteen (14.9%) of the 128 job skill items to be somewhat important in the performance of their jobs. No job skill item was perceived to be not important by the participants to the performance of their jobs. The lowest rated job skill item, using voice recognition software, was still perceived by participants to be somewhat important to the performance of the job. The researcher concluded that voice recognition software is a fairly new technology and has not had wide-spread application yet. Pezzoli, Lum, and Meyer (1999) reported similar findings about the use of voice recognition software on the job. Kruk (1996) stated that voice recognition technology was an emerging technology to be used by office workers in the performance their jobs.

Also, he stated that employers are searching for people with strong computer and telecommunication skills.

The two job skill items that were in the somewhat important category that followed voice recognition software as lower rated items were maintaining accounting journal manually and calculating payroll electronically. The researcher concluded that these job skill items may not be skills frequently performed by these administrative support occupations workers; they might be performed by someone else in the office. Vincent and Williams (1993) reported that secretaries' job activities included handling budgets and Henry (1994) reported that they were involved with bookkeeping activities. Also, within this somewhat important category of job skill items but also rated relative low to the other job skill items was taking shorthand. The researcher concluded that these participants still perceived shorthand skills to be somewhat important to carry out certain job tasks in the performance of their jobs. Henry's study (1994) found that executive, legal, word information processing, and school secretaries used stenographic skills on the job. Kozlowski (1998) reported that employment want ads were again seeking employees with shorthand and dictation skills. Arneson (1989), Butts (1993), Herbert and Hosler (1997), and Pezzoli, Lum, and Meyer (1999) reported that shorthand was no longer a prerequisite skill for office workers.

For Objective 2, to determine the importance of administrative support job skill categories in the performance of their jobs as perceived by workers who are currently employed in administrative support occupations positions, the job skill items in each of the nine categories were factor analyzed to determine if the item (variable) confirmed to measure a single construct. The researcher used the minimum acceptable factor loading

of .30 (Hair et al., 1998). Using the computed average score of the nine job skills categories, the researcher determined the importance of the nine job skills categories using the following interpretive scale: less than 1.50—not important; 1.50 to 2.49—somewhat important; 2.50 to 3.50—important; 3.51 to 4.50—very important; and greater than 4.50—extremely important.

Using the interpretive scale, participants perceived five of the nine job skill categories to be very important in the performance of their jobs: Information Distribution; Communications; Organizing and Planning Functions; Document Production; and Managing Records and Files. The other four categories were perceived by the participants to be important in the performance of their jobs: Maintaining Equipment and Supplies; Producing Desktop Publishing Documents; Supervising Personnel; and Performing Financial Functions. Therefore, it can be concluded that these job skill categories are important in the performance of these administrative support occupations' jobs.

For Objective 3, to describe workers who are currently employed in administrative support occupations positions on the selected personal and professional demographic characteristics, the researcher used descriptive statistics (mean and standard deviation) to describe the variable, years of work experience in the field of administrative support occupations. Numbers and percentages were used to describe the other personal, professional, and organizational demographic variables of the respondents.

The largest number of participants ($\underline{n}$ = 54, 34.8%) was in the 40-49 years old category, with the 50-59 years ($\underline{n}$ = 53, 34.2%) being the second-largest age group. The

participants reported their average number of years of work experience in the field of administrative support occupations as almost 22 years (n = 151). Based on their reported age and number of years in the administrative support occupation field, the researcher concluded that these workers have longevity in their occupational area. The findings of this study are similar to the findings of V-TECS (1996). Forty percent of their respondents were in the age category of 35 to 49 years with 50 to 64 years being the second-largest age group (34.7%). It was reported that a little less than fifty percent of the office workers had been working in the administrative support occupation for more than 15 years (V-TECS, 1996).

Almost all the participants were females (n = 155, 98.8%). Therefore, the researcher concluded that this occupational area is still predominately female. Kerka (1995) and Arneson (1989) reported similar findings; the administrative support occupations were still predominately female.

In the highest degree earned category, the participants reported having earned a high school diploma through bachelor's and higher degree. Over thirty percent of the participants (n = 49) reported having earned a high school diploma, over twenty-two percent (n = 35) reported having earned an associate degree and almost twenty-two percent (n = 34) reported completing a certificate program at a business or vocational technical school. Over seventeen percent (n = 27) of the participants reported having earned a bachelor's degree. Based on the findings of this study, the researcher concluded that the majority of the participants had some education beyond a high school diploma but below a baccalaureate degree. The findings of this study are similar to V-TECS' (1996) and Arneson's (1989) findings. V-TECS (1996) reported that eighty

percent of the administrative support occupation workers had received training beyond high school with almost nine percent having completed a college bachelors' degree. Arneson (1989) reported that the typical temporary office worker had some education above a high school diploma.

The participants reported 70 job titles. The most frequently reported job titles were administrative assistant (n = 28, 17.8%) and executive assistant (n = 20, 12.7%). The researcher concluded from the findings of this study that there is still diversity among job titles in this occupational area. V-TECS (1996) found the most frequently reported job titles were Secretary or Administrative Secretary. Administrative Development Institute (1994) found that the majority of their respondents used the job title secretary or administrative assistant. Herbert and Hosler (1997) found that office workers still listed their job title as secretary with only 15.0% using the administrative assistant job title. The Chronicle Guidance Publications (1999) reported job titles such as administrative assistant, executive secretary, and administrative secretary. IAAP (n.d.e) reported job titles such as administrative assistant, senior secretary, executive secretary, desktop publishing/graphics specialist, and office manager. Pezzoli et al. (1999) reported a diverse list of job titles with administrative assistant (14.0%) and secretary to manager (12.0%) appearing most frequently. However, Kerka (1994) reported a decline in the use of the secretary job title.

Sixty-five (43.3%) of the participants reported the size of office, as measured by the total number of employees, at the location where participant was employed as either small (11-99 employees) or very small (1-10 employees). Eighty-five (56.7%) of the participants worked for medium (100-499 employees) or large (500 or more

employees). The researcher concluded that the participants worked in a wide variety of office sizes. V-TECS (1996) reported that over 32 percent of the office workers reported the size of their company as having more than 2,000 employees. Herbert and Hosler (1997) reported that their graduates were working for large companies over 1,000 employees.

Over half of the participants (n = 95, 63.4%) reported the type of community as measured by population size in which the office of employment is located as a large city (greater than 50,001 people). The researcher concluded from the findings of this study that the majority of the participants worked in a large city.

The participants reported working for companies/organizations with a wide range of scope (one location to international locations). Over one-third of the participants (n = 52) reported the scope of organization as international. The researcher concluded that a large number of the participants worked for companies/organizations with an international scope. V-TECS (1996) reported similar findings; over one-third of the office workers reported the scope of operations as international. Findings from Akeyo and Pollard (1992) indicated that the respondents worked for companies involved in international business.

Over one-third of the participants (n = 54) reported the type of organization as measured by the Department of Labor (DOL) Standard Industrial Classification (SIC) designation in which the participant was employed as services. The researcher concluded that the largest number of the administrative support occupations workers reported working for services type business/industries followed by transportation and manufacturing. The findings of this study are similar to the findings of Herbert and

Hosler (1997) and V-TECS (1996). Herbert and Hosler (1997) found that office information (secretarial) graduates were employed first in the service sectors followed by the financial and manufacturing sectors. V-TECS (1996) reported that 27.0% of the office workers were in manufacturing, followed by the service industry (18.2%) which included utility, sales, and construction. These findings appear to support the fact that the economy has been moving towards a service economy.

For Objective 4, to determine whether or not selected software/programs, office technology, and other office items were used in the performance of administrative support office jobs as perceived by workers currently employed in administrative support occupations positions, the researcher used numbers and percentages. The researcher rank ordered the total responses for each item used in the performance of the administrative support occupations workers' job to determine the most frequently used software/programs, office technology, and other items.

The most frequently reported software/programs used by the participants in the performance of their jobs were word processing, spreadsheet, electronic mail (e-mail), Internet, calendaring/scheduling, presentation, and database software. From the findings of this study, the researcher concluded that software application packages continue to play a vital role in completing the tasks performed by office workers in the performance of their jobs. Numerous studies (Adams, 2001; Administrative Development Institute, 1994; Arneson, 1989; Bouchey, 2001; Chapula, 1988; Fitzgerald, 2001; Haff, 1993; Holmquist, 1992; Pezzoli, et al., 1999; Redmann, Seaward, & Griffin, 1989; Vincent & Williams, 1993; V-TECS, 1996) have reported office workers using word processing, spreadsheet, electronic mail, calendaring/

scheduling, Internet, presentation and database software in the performance of their jobs.

The names of the most frequently reported software packages used by the participants were: Microsoft Word (n = 139, 90.8%), Microsoft Excel (n = 138, 97.9%), Microsoft Outlook (n = 75, 59.1%), Microsoft Outlook (n = 66, 55.9%), Internet Explorer (n = 57, 48.7%), MS PowerPoint (n = 107, 92.2%), and MS Access (n = 66, 75.9%). These software packages are produced by Microsoft. The researcher concluded that the Microsoft software packages were the most frequently reported software names being used by these office workers to complete job tasks in the performance of their jobs. Also, it can be concluded that emerging new technology like voice recognition software has not yet received wide-spread use among administrative support occupations workers. The findings of this study related to software use support recent studies that Microsoft software products were used most frequently by workers to perform their jobs (Adams, 2001; Pezzoli et al., 1999; R. Stroud, e-mail communication, January 18, 2002, Vincent, & Ross, 1998). Adams (2001), R. Stroud (e-mail communication, January 18, 2002), Pezzoli et al. (1999), and Vincent and Ross (1998), reported the most frequently used software packages were Microsoft application software products. Also, the findings from the study by Vincent and Ross (1998) indicated that a few office workers (n = 50, 31.8%) were using a variety of accounting software in the performance of their jobs. Pezzoli et al. (1999) noted a low usage of desktop publishing and voice recognition software. Earlier studies (Anderson & Griffin, 1994; Butts, 1993; Henry, 1994; Holmquist, 1992) reported the most frequently used software packages were WordPerfect and Lotus 123.

Almost all the participants indicated that they used the copier (n = 153, 97.5%), the fax machine (n = 150, 95.5%), the calculator (n = 147, 93.6%), the computer printer (n = 145, 92.4%), the multi-line telephone system (n = 143, 91.1%), and the personal computer (n = 142, 90.4%). Over fifty percent of the participants indicated that they used typewriter (n = 116, 73.9%), local area network (n = 113, 72.0%), scanner (n = 105, 66.9%), voice mail via telephone (n = 99, 63.1%), cellular phone (n = 92, 58.6%), and voice mail via answering machine (n = 81, 51.6%). The researcher concluded from the findings of this study that these administrative support occupations workers are using new technology office tools along with a few of the older ones, typewriter and calculator. Pezzoli et al. (1999) noted that personal computers, fax machines, laser printers, photo-copiers, electric typewriter and 10-key calculators were used by office workers to perform their jobs. It was also noted that over 32% were using scanners. V-TECS reported that all participants indicated they used photo copiers in their jobs. Almost all (98%) used personal computers and calculators, and 96% used a multi-line telephone, and 82% indicated they used an electric typewriter. At least 90% used a fax machine and laser printer.

For Objective 5, to determine if a model exists explaining a significant portion of the variance in the perceived importance of administrative support job skill categories in the performance of administrative support jobs from selected personal and professional demographic characteristics, the researcher used stepwise regression. Nine separate regressions were calculated to correspond with the nine subscales on the Administrative Support Occupations' Skill Inventory. Gender was eliminated from the

regression model because only one participant indicated being male and 155 indicated being female.

Since 144 participants reported 70 job titles, the researcher grouped the participants' reported job titles into four categories using the Occupational Outlook Handbook 2000-01 Edition (Bureau of Labor Statistics, 2000). (See Appendix A) Only one participant reported a job title of Medical Transcriptionist, therefore, the researcher included this participant with the Word Processors, Typists, and Data Entry Keyers. Since three of the four classes for job title did not have a sufficient number of reported cases to be included as separate variables for analysis, the researcher created a dichotomous variable for job title. This variable indicated whether or not the participants reported their job title as secretary.

For the Standard Industrial Classification (SIC) of Organization/ Company variable, there were nine classes: Agriculture, Forestry, and Fishing; Mining; Transportation, Communication, Electric, Gas, and Sanitary Services; Construction; Wholesale and Retail Trade; Finance, Insurance, and Real Estate; Services; Public Administration; and Manufacturing. Analysis of the nine classes of this variable revealed that four of the nine classes did not have a sufficient number of reported cases to be included as separate variables in the analysis. The researcher recoded the original variables into five categories: Transportation, Communication, Electric, Gas, and Sanitary Services; Finance, Insurance, and Real Estate; Services; Public Administration; and Manufacturing. These five dichotomous variables were then included as independent variables in the regression analysis.

For the variable, Highest Degree Earned, the researcher recoded the original variables. The researcher created four categories for highest degree earned. They were "Bachelor's and Higher," "Associate Degree," "Certificate Program," and "High School Diploma." These four dichotomous variables were then included as independent variables in the regression analysis.

Of the nine regression equations, five equations resulted in no variables entering the model. These five were the summated scores for the following job skill categories: Supervising Personnel; Producing Desktop Publishing Documents; Maintaining Equipment and Supplies; Performing Financial Functions; and Managing Records and Files.

The first regression model that resulted in a significant model involved regressing the dependent variable, Information Distribution, against all the personal and professional demographic characteristics. A total of 11.0% of the variance was explained by two variables, whether or not a participant's reported job title was secretary and age. The participants who reported their job title as secretary tended to have higher scores on the Information Distribution sub-scale. The researcher concluded that this might be due to the fact that the nature of their work is to ensure that information is disseminated to other people. The older participants tended to report lower scores on the Information Distribution sub-scale. The researcher concluded that this might be explained by the fact that older workers seem to be more involved in managerial and supervisory tasks.

The second regression equation that resulted in a significant model involved regressing Organizing and Planning Functions' summated scores against all the

independent variables. Only 3.0% of the variance in Organizing and Planning Functions' summated scores was explained by the scope of the company/organization where the participants were employed. The participants who work for companies/organizations with larger scopes tended to report higher scores on the Organizing and Planning Functions sub-scale. The researcher concluded that participants who worked for companies/organizations with broader scopes needed more organizational and planning skills because their offices have more people and are more complex.

The third regression equation that resulted in a significant model involved regressing Communications summated scores against all the independent variables. Only 3.0% of the variance in Communications' summated scores was explained by whether or not a participant's job title was secretary. The participants who reported their job titles as secretary tended to report higher scores on the Communications sub-scale. The researcher concluded that this might be due to the fact that since these participants are involved in the processing and dissemination of information that communication is vital to their job performance.

The fourth regression equation that resulted in a significant model involved regressing Document Production's summated scores against all the independent variables. A total of 12.0% of the variance in Document Production's summated scores was explained by three variables, age, whether or not a participant's job title was secretary, and whether or not participants reported their SIC designation as manufacturing. The older worker tended to report lower scores on the Document Production sub-scale. The researcher concluded that this might be due to the fact that

these participants are involved in more supervisory activities that require less document production. The participants who reported their job title as secretary tended to report higher scores on the Document Production sub-scale. The researcher concluded that the primary focus of the administrative support occupations is the processing of information. Those participants who reported their company/organization's SIC designation as manufacturing tended to report higher scores on the Document Production sub-scale than those who reported their company/organization's SIC designation as something other than manufacturing. The researcher concluded that there is no apparent explanation for this finding; therefore, this area warrants further investigation.

These four analyses revealed statistically significant regression equations. However, the analyses of the personal and professional demographic characteristics collected did not explain a large portion of the variance in the four job skill categories' summated scores. In practical terms, it can be concluded that these findings can not explain which variables influence the participants' perceived importance of the job skill categories. Therefore, based on the findings of this study, the researcher concluded that a model does not exist in explaining a significant portion of the variance in the perceived importance of administrative support job skill categories in the performance of administrative support jobs from selected personal and professional demographic characteristics. For curricular purposes, these findings imply that a common body of knowledge and skills would serve the majority of the administrative support occupations workers surveyed.

Recommendations

This study sought to identify the job skills that need to be taught in an associate degree program for office information systems graduates. Specifically, the researcher sought to determine the importance of job skills needed by office information systems/administration graduates with implications for curricular revision. Based on the findings of this study, the following recommendations are:

1. It is recommended that office information systems' faculty and administrators evaluate the existing office information systems courses to determine if these 128 job skill items are currently being included in the curriculum.
2. It is recommended that curricular planners and faculty members consider including the 109 job skill items rated as extremely important, very important, and important in their curriculum. Due to time and degree program constraints, curricular planners may not be able to include the 19 job skill items rated as somewhat important, but these job skill items could be made available through short courses or electives if deemed applicable.
3. It is recommended that office information systems' educators develop short courses for those skills perceived to be somewhat important in the performance of the office workers' jobs if deemed applicable. Pezzoli et al. (1999) suggested that voice recognition software be offered as an elective or short course.
4. It is recommended that curricular planners and faculty members keep abreast of new and emerging technologies and their impact on job performance by surveying business and industry every three years. There are existing

technologies which have entered the workplace but have not yet had extensive wide spread use, for example, voice recognition software.

5. Since the findings of this study suggest that most office professionals were using Microsoft Office software in the performance of their jobs, it is recommended that the office information systems' courses use this brand of software for training.
6. It is recommended that curriculum planners and faculty members evaluate their microcomputer applications course or courses. The findings of this study indicated that office workers were using word processing, spreadsheet, presentation, database, operating systems, and e-mail application packages in the performance of their jobs. It is recommended that the microcomputer applications course or courses include these software application programs.
7. It is recommended that educators survey their local business community to determine which skills they are seeking in office professionals and compare these findings to the findings of this study.
8. It is recommended that post-secondary institutions offering office information systems training use this study as a guide to conduct a similar study to determine the skills needed for their training program.
9. It is recommended that the College of Business use this study as a guide to conduct a similar study to determine the skills needed by four-year business students for the various program areas.

Since this research study was limited to members of the International Association of Administrative Professionals (IAAP) in the states of Louisiana,

Mississippi, and East Texas including Houston, Texas, future research should include an expansion of this study. A study to survey administrative support occupations workers who are not members of the IAAP should be conducted. A comparison study of IAAP members and non-IAAP members should be conducted. Another area of research should include collecting information about job skills from supervisors of these workers. Since educators are the ones who make curricular decisions in their training courses/programs, a research study should be conducted to determine if educators have similar perceptions of the job skills needed by potential office workers.

Since two-thirds of the participants in this study were nearing retirement age, future research should be conducted to determine job availability in the administrative support occupations field. How are these positions filled when people retire?

As the demand for a skilled workforce continues, it appears that skill certificates will continue to gain value by meeting the urgent needs of all constituents-educators, business and industry, and students. Skill certificates can provide universal, portable credential for workers. Skill certificates state exactly what students can do; therefore, employers do not have to rely on what students say they can do (National Alliance of Business, 2000; IAAP, n.d.d.; Microsoft Training and Certification, 2002). Therefore, it is recommended that future research should address whether job skill certification should be part of the curriculum such as Microsoft Office User Specialist (MOUS) certificate.

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APPENDIX A

MAJOR JOBS UNDER ADMINISTRATIVE SUPPORT OCCUPATIONS, INCLUDING CLERICAL

Occupations:	Nature of Work:	Educational Level	Related Occupations:
1. Adjusters, Investigators, and Collectors (*Adjuster, welfare eligibility worker, or interviewer)	Investigate, analyze, and determine validity of their firm's liability. Acting as intermediaries with public	Prefer some college education (*)	Social and human services assistants & specialists, probation officers.
2. Bank Tellers	Processes money, checks, and other financial items for customers	Prefer some college education. Specialized training for advancement to managerial positions.	New accounts clerks, loan and credit counselors
3. Court Reporters, Medical Transcrip tionists, and Stenographers	Transcribe the spoken word; type, record information, and process paperwork.	2- or 4- year postsecondary school degree	Information clerks & secretaries
4. Information Clerks (*New account clerk, airline reservation and ticket agent, receptionists)	Gathering data and providing information to the public; deal with the public, receive and provide information, or direct people to others who can assist them.	Prefer some college education for some positions (*); college degree for advancement into managerial positions.	Customer service representatives, sales assistants & associates, library assistants & aides, receptionists & medical transcriptionists
5. Office Clerks (General)	Duties vary by type of office & level of experience. Combination bookkeeping, typing, office machine operation, and filing; other administrative support workers who perform similar duties.	High school diploma. Some jobs require training thru colleges, vocational schools & postsecondary vocational programs. Advancement to professional occupations requires a college degree.	Information clerks and record processing clerks & medical assistant

Occupations:	Nature of Work:	Educational Level	Related Occupations:
6. Records Processing Occupations	Enter data into a computer system and perform basic analysis of the data.	Prefer to hire workers with a higher level of education	Bank teller, statistical clerks, receiving clerks, medical record clerks, hotel and motel clerks, credit clerks, and reservation and transportation ticket agents
7. Secretaries (Assistants Administrative Assistants, Executive Secretary)	Type, record information, and process paperwork; performing and coordinating an office's administrative activities and ensuring that information is disseminated to staff and clients.	High school graduates with basic office skills may qualify for entry-level secretarial positions; advanced training from vocational schools, business schools, or community colleges.	Medical record technicians, office & administrative support supervisor & coordinator, systems manager, office manager, medical secretaries, legal secretaries, administrative and human resource specialist
8. Word processors, Typists, and Data entry Keyers	Set up and prepare reports, letters, mailing labels, and other text material; use and operate various types of office machines and perform clerical duties.	High school diploma & advanced training from vocational schools, business schools, or community colleges.	Stenographer, clerk typist, note readers

SOURCE: Bureau of Labor Statistics: United States Department of Labor. Occupational Outlook Handbook 2000-01 Edition; "Administrative Support Occupations, Including Clerical". Retrieved July 22, 2001 from http://stats.bls.gov/ocohome.htm

APPENDIX B

STANDARD INDUSTRIAL CLASSIFICATION DIVISION STRUCTURE

Division A: Agriculture, Forestry, And Fishing
1. Agricultural Production Crops
2. Agricultural Production Livestock And Animal Specialties
3. Agricultural Services
4. Forestry
5. Fishing, Hunting, And Trapping

Division B: Mining
1. Metal Mining
2. Coal Mining
3. Oil And Gas Extraction
4. Mining And Quarrying Of Nonmetallic Minerals, Except Fuels

Division C: Construction
1. Building Construction General Contractors And Operative Builders
2. Heavy Construction Other Than Building Construction Contractors
3. Construction Special Trade Contractors

Division D: Manufacturing
1. Food And Kindred Products
2. Tobacco Products
3. Textile Mill Products
4. Apparel And Other Finished Products Made From Fabrics And Similar Materials
5. Lumber And Wood Products, Except Furniture
6. Furniture And Fixtures
7. Paper And Allied Products
8. Printing, Publishing, And Allied Industries
9. Chemicals And Allied Products
10. Petroleum Refining And Related Industries
11. Rubber And Miscellaneous Plastics Products
12. Leather And Leather Products
13. Stone, Clay, Glass, And Concrete Products
14. Primary Metal Industries
15. Fabricated Metal Products, Except Machinery And Transportation Equipment
16. Industrial And Commercial Machinery And Computer Equipment
17. Electronic And Other Electrical Equipment And Components, Except Computer Equipment
18. Transportation Equipment
19. Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks
20. Miscellaneous Manufacturing Industries

Division E: Transportation, Communications, Electric, Gas, And Sanitary Services
1. Railroad Transportation
2. Local And Suburban Transit And Interurban Highway Passenger Transportation
3. Motor Freight Transportation And Warehousing
4. United States Postal Service
5. Water Transportation
6. Transportation By Air
7. Pipelines, Except Natural Gas
8. Transportation Services
9. Communications
10. Electric, Gas, And Sanitary Services

Division F: Wholesale Trade
1. Wholesale Trade-durable Goods
2. Wholesale Trade-non-durable Goods

Division G: Retail Trade
1. Building Materials, Hardware, Garden Supply, And Mobile Home Dealers
2. General Merchandise Stores
3. Food Stores
4. Automotive Dealers And Gasoline Service Stations
5. Apparel And Accessory Stores
6. Home Furniture, Furnishings, And Equipment Stores
7. Eating And Drinking Places
8. Miscellaneous Retail

Division H: Finance, Insurance, And Real Estate
1. Depository Institutions
2. Non-depository Credit Institutions
3. Security And Commodity Brokers, Dealers, Exchanges, And Services
4. Insurance Carriers
5. Insurance Agents, Brokers, And Service
6. Real Estate
7. Holding And Other Investment Offices

Division I: Services
1. Hotels, Rooming Houses, Camps, And Other Lodging Places
2. Personal Services
3. Business Services
4. Automotive Repair, Services, And Parking
5. Miscellaneous Repair Services
6. Motion Pictures
7. Amusement And Recreation Services
8. Health Services
9. Legal Services
10. Educational Services
11. Social Services
12. Museums, Art Galleries, And Botanical And Zoological Gardens
13. Membership Organizations
14. Engineering, Accounting, Research, Management, And Related Services
15. Private Households

Division J: Public Administration

1. Executive, Legislative, And General Government, Except Finance
2. Justice, Public Order, And Safety
3. Public Finance, Taxation, And Monetary Policy
4. Administration Of Human Resource Programs
5. Administration Of Environmental Quality And Housing Programs
6. Administration Of Economic Programs
7. National Security And International Affairs
8. Non-classifiable Establishments

Source: United States Department of Labor, Occupational Safety & Health Administration. (2002, August 22). Statistics & data: Standard industrial classification division structure. Retrieved August 22, 2002, from http://www.osha.gov/cgi-bin/sic/sicser5

APPENDIX C

MOST WIDELY USED SOFTWARE/PROGRAM PACKAGES

Application	Software/Program
Word Processing	Microsoft Word Corel WordPerfect Lotus Word Pro Microsoft Pocket Word
Spreadsheet	Microsoft Excel Corel Quattro Pro Lotus 1-2-3 Microsoft Pocket Excel
Database	Microsoft Access Corel Paradox Lotus Approach Microsoft Visual FoxPro Oracle
Presentation Graphics	Microsoft PowerPoint Corel Presentation Lotus Freelance Graphics
Personal Information Manager (PIM)	Microsoft Outlook CorelCENTRAL Lotus Organizer Gold Mine HotOffice Microsoft Pocket Outlook Palm Desktop Palm MultiMail
Project Management	Microsoft Project Primaver SureTrak Project Manager
Accounting	Intuit QuickBooks Peachtree Complete Accounting Microsoft Great Plains J.D. Edwards PeopleSoft SAP Oracle Solomon Quicken MAS90

Application	Software/Program
Desktop Publishing	Microsoft Publisher Broderbund Print Shop Pro Publisher Adobe FrameMaker Adobe PageMaker Corel VENTURA QuarkXPress
Financial Software	Intuit Quicken Microsoft Money Quicken Microsoft Great Plains SAP
E-mail Software	Microsoft Outlook Express Netscape Navigator
Graphic Suites	CorelDraw Corel's Graphic Package Micrografy's ABC
Internet Browsers	Microsoft Internet Explorer Netscape Navigator
Operating Systems Software *Network Operating Systems **Desktop Operating Systems	DOS **Windows *Windows NT *Windows XP *NetWare *UNIX **MAC OS **MAC OS X Windows CE Palm OS
Calendaring/Scheduling Software	Microsoft Outlook Calendar Creator Plus

Sources: Shelly, G. B., Cashman, T. J., & Vermaat, M. E. (2002). Discovering computers 2003: Concepts for a digital world web and XP enhanced [Brief]. Boston, MA: Thomson Course Technology, 3.07; *O'Leary, T. J., & O'Leary, L. I. (2002). Computing essentials 2002-2003: Complete edition. New York, NY: McGraw-Hill Irwin; Tax and accounting sites directory: Accounting software. (n.d.). Retrieved November 30, 2002, from http://www.taxsites.com/software2.html; Burton, S., Shelton, N., & Jennings, L. M. (2001). Procedures for the automated office (5 th ed.). Upper Saddle River, New Jersey: Prentice Hall.

APPENDIX D

LSU INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH SUBJECT PROTECTION

IRB #: 2063 LSU Proposal #: _____

LSU INSTITUTIONAL REVIEW BOARD (IRB) for HUMAN RESEARCH SUBJECT PROTECTION
578-8692
FAX 6792
Office:203 B-1 David Boyd Hall

APPLICATION FOR EXEMPTION FROM INSTITUTIONAL OVERSIGHT

Unless they are qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.

Instructions: Complete this form. If exemption seems likely, submit it. If not, submit regular IRB application. Help is available from Dr. Robert Mathews, 578-8692, irb@lsu.edu or any screening committee member.

Principal Investigator Margaret Kilcoyne **Student?** (Y) N

Ph: 318.357.5715 **E-mail:** kilcoyne@nsula.edu **Dept/Unit:** School of Human Resource Education

If Student, name supervising professor: Dr. Donna Redmann
Ph:225.578.2465

Mailing Address: School of Human Resource Education
Ph: 225.578.2465 142 Old Forestry Bldg LSU

Project Title: Identifying Skills Needed by Office Information Systems Graduates in the Changing Work Environment: Perceptions of Incumbent Administrative Support Occupations Workers

Agency expected to fund project: Doctoral Student/NSU College of Business

Subject pool (e.g. Psychology Students): Members of the International Association of Administrative Professional organization [IAAP](Business/Industry Office Workers)

Circle any **"vulnerable populations" to be used:** (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted.

PI Signature [signature] Date 8/27/02 (no per signatures)

Screening Committee Action: Exempted ✓ Not Exempted ___

Reviewer Michael Keener Signature [signature] Date 8-28-02

APPENDIX E

NSU HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD

Human Subjects Institutional Review Board

A Member of the University of Louisiana System

September 18, 2002

Margaret S. Kilcoyne
College of Business
Russell Hall
Northwestern State University

Dear Ms. Kilcoyne:

The Human Subjects Institutional Review Board has approved your research proposal entitled "Identifying Skills Needed by Office Information Systems Graduates in the Changing Work Environment: Perceptions of Incumbent Administrative Support Occupations Workers."

Please remember, a copy of the final report is due in the IRB office within six weeks of your project's completion. If your project's completion will extend beyond the date that you reported, you must submit a continuance of research project form to the IRB for approval. If you have any questions about this procedure, contact the IRB office in the Office of Research and Sponsored Programs for further information.

Good luck with your project.

Sincerely,

Dr. Janette Ralston, Chair, HS-IRB

Cc: Worley

APPENDIX F

PERMISSION TO USE VTECS SKILL STANDARDS

Margaret S. Kilcoyne

From: Brenda Hattaway [hattaway@v-tecs.org]
Sent: Wednesday, August 28, 2002 10:27 PM
To: kilcoyne@nsula.edu
Subject: Re: Giving Credit to V-TECS

Margaret,

Yes, your reference is fine....and thank you! It's always good to hear about research that involves our material.

If anyone is interested in knowing more about us, refer them to our web site: www.v-tecs.org

Best of luck with your survey.

Brenda

At 03:55 PM 8/28/02 -0500, you wrote:
>Brenda:
>
>I have contacted Ron but I see he is out of town. I used the
>Administrative Support Occupations: Skill Standards as the preliminary
>basis for my dissertation survey instrument. Also, I conducted a focus
>group meeting. I made modifications to the Administrative Support
>Occupations: Skill Standards and I added a rating of importance scale
>to each item. On the instrument after the first major section: Part 1:
>Skills (V-TECS, 1996, March Administrative Support Occupations: Skill
>Standards [Modified]) I added the documentation listed above. Is this
>statement appropriate for giving V-TECS credit or do I need to add
>something different. In Chapter 3 I mentioned and referenced using
>these standards. Please respond as soon as possible. I would like to
>send out the surveys next Tuesday, September 4, 2002.
>
>Any assistance would be greatly appreciated.
>
>Margaret S. Kilcoyne
>Assistant Professor
>College of Business
>Northwestern State University
>Natchitoches, LA 71497
>318.357.5715
>318.357.5990 (Fax Number)
>kilcoyne@nsula.edu

Brenda C. Hattaway
Assistant Executive Director
V-TECS
1866 Southern Lane
Decatur, GA 30033

1

Margaret S. Kilcoyne

From: Sandi Davison [sdavison@v-tecs.org]
Sent: Monday, September 09, 2002 10:34 AM
To: kilcoyne@nsula.edu
Subject: Permission to Use

We're not too particular how you reference the materials. I know you are having to use somebody's style manual, so I would just say something to the effect that your list was adopted from a list of technical skills contained in the Administrative Support Occupations Skill Standards as developed by V-TECS, a program of the Southern Association of Colleges and Schools, March 1996. If you have any questions, please call or message.

Sandi Davison
V-TECS
1866 Southern Lane
Decatur, GA 30033-4097
404.679.4501 ext. 543

APPENDIX G

NSU COLLEGE OF BUSINESS ADVISORY BOARD LETTER

March 5, 2002

First Name Last Name, Title
Organization
Address
City, State Zip Code

Dear First Name:

I NEED YOUR HELP!

In an effort as an educator to prepare graduates for employment, I am seeking skills information from office employees who are currently performing work in the occupations grouped within the administrative support occupations.

From your organization, I need you to identify and recommend an employee or employees who could participate in a focus group meeting to be held on Northwestern State University's campus in Natchitoches, Louisiana. For example, if you have a secretary and receptionist, please list both occupations and a contact person for each occupation on the enclosed form.

The selected focus group participants will assist with the identification of important knowledge, skills, and abilities needed in the performance of their jobs. I will also need another group of employees to serve on a panel of experts, therefore, if you have more than one employee working in an occupation, please give both names.

You will find enclosed a one-page form to be completed and returned in the postage-paid envelope. I need your completed form on or before March 20, 2002. If you have any questions concerning the meeting, you may contact me at 318.357.5715 or e-mail Kilcoyne@nsula.edu.

I would like to thank you for providing this valuable information.

Sincerely,

Margaret Kilcoyne, Assistant Professor
Office Information Systems

Enclosure-Form

APPENDIX H

NSU COLLEGE OF BUSINESS ADVISORY BOARD FORM

Your Name (person completing form):_____

Organization's/
Company's Name: _____ Address: _____

City: _____ State: _____ ZipCode: _____

Phone Number:_____ E-mail: _____

Do you have employees who work in any of the following occupations? (Check all that apply)

- ❒ Claims Representatives
- ❒ Adjustment Clerks
- ❒ Bill and Account Collectors
- ❒ Insurance Processing Clerks
- ❒ Welfare Eligibility Workers
- ❒ Welfare Eligibility Interviewers
- ❒ Clerical Supervisors
- ❒ Clerical Managers
- ❒ General Office Clerks
- ❒ Interviewing & New Account Clerks
- ❒ Hotel & Motel Desk Clerks
- ❒ Transportation Ticket Agent
- ❒ Bookkeeping, Accounting, & Auditing Clerks
- ❒ Advertising Clerks
- ❒ Travel Clerk
- ❒ Order Clerks
- ❒ File Clerks
- ❒ Typists
- ❒ Reservation Agents
- ❒ Personnel Clerks
- ❒ Billing Clerks
- ❒ Receptionists
- ❒ Secretaries
- ❒ Legal Secretaries
- ❒ Medical Secretaries
- ❒ Stenographers
- ❒ Court Reporters
- ❒ Data Entry Keyers

❒ Correspondence Clerks

❒ Medical Transcriptionists

❒ Medical Record Clerk

❒ Word Processors

❒ Administrative Assistant

❒ Statistical Clerks

For each of the above checked occupation(s), please give me the name, occupation, and phone number of potential focus group participants from your organization?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

APPENDIX I

FOCUS GROUP PARTICIPANT LETTER

June 21, 2002

First Name Last Name, Title
Organization
Address
City, State Zip Code

Dear First Name:

HELP! I NEED YOUR HELP!

Changing technology and flattening hierarchy in the office environment have caused changes in the job duties, responsibilities, skills, and titles of the administrative support occupations' workers. As a person currently working in the administrative support occupations field, you are the most knowledgeable person in this field.

You have been selected to participate in a focus group meeting to be held in Natchitoches, Louisiana on July 2, 2002. The meeting will be held at Russell Hall (College of Business) in the Natchitoches Room at 5:15 p.m. The meeting should last approximately one to one and half hours. The purpose of this meeting is to identify skills needed by administrative support occupations workers to perform their job. As an administrative support occupation worker, you are the expert and I need your help.

Educators must make appropriate changes within the curriculum to reflect relevant job skill needs of workers and employers. Your input is very valuable to office information systems programs. All information provided by you will be kept confidential.

If you have any questions concerning the meeting, you may contact me at 318.357.5715 or e-mail Kilcoyne@nsula.edu.

Sincerely,

Margaret Kilcoyne, Assistant Professor
Office Information Systems

Enclosure-Map

APPENDIX J

ADMINISTRATIVE SUPPORT OCCUPATIONS' SKILL INVENTORY

ADMINISTRATIVE SUPPORT OCCUPATIONS' SKILL INVENTORY

PART I. SKILLS (VTECS, 1996, March *Administrative Support Occupations: Skill Standards* [Modified])

For each skill listed below please circle the appropriate number that indicates your perceived importance of the skill to your job.

Importance of Skill

1-Not important (skill not needed in the performance of the job)
2-Somewhat Important (skill might be needed in the performance of the job)
3-Important (skill usually needed in performance of the job)
4-Very Important (skill needed in the performance of the job)
5-Extremely Important (skill critical to the performance of the job)

Skills List					
Organizing & Planning Functions	**Importance of Skills**				
Prepare agenda and compile materials for meetings	1	2	3	4	5
Arrange meetings	1	2	3	4	5
Arrange conferences	1	2	3	4	5
Design an office layout	1	2	3	4	5
Develop a plan for organizing one's own work	1	2	3	4	5
Coordinate work schedule and distribution	1	2	3	4	5
Gather and compile data for supervisor and company reports	1	2	3	4	5
Maintain supervisor's appointment calendar manually	1	2	3	4	5
Maintain supervisor's appointment calendar electronically	1	2	3	4	5
Arrange travel and itinerary for supervisor	1	2	3	4	5
Arrange other activities/functions	1	2	3	4	5
(Please list & rate below any other skills):					
	1	2	3	4	5
	1	2	3	4	5
Maintaining Equipment & Supplies					
Train others in use of software	1	2	3	4	5
Maintain software for current office use	1	2	3	4	5
Train others in operation of equipment	1	2	3	4	5
Assist others in operating equipment	1	2	3	4	5
Maintain office equipment inventory & leases for equipment	1	2	3	4	5
Schedule office equipment maintenance	1	2	3	4	5
Perform regular equipment maintenance	1	2	3	4	5
Purchase office equipment & furniture	1	2	3	4	5
Receive, install, and store office equipment	1	2	3	4	5
Receive and store office supplies	1	2	3	4	5
Order supplies	1	2	3	4	5
Maintain inventory of supplies	1	2	3	4	5
Maintain inventory of forms	1	2	3	4	5
(Please list & rate below any other skills):					
	1	2	3	4	5
	1	2	3	4	5
Performing Financial Functions					
Calculate payroll electronically	1	2	3	4	5
Calculate payroll manually	1	2	3	4	5
Plan for budgetary needs	1	2	3	4	5

Importance of Skill:

1-Not important (skill not needed in the performance of the job)
2-Somewhat important (skill might be needed in the performance of the job)
3-Important (skill usually needed in performance of the job)
4-Very important (skill needed in the performance of the job)
5-Extremely important (skill critical to the performance of the job)

Performing Financial Functions (Continued)	Importance of Skill				
Manage office expenses	1	2	3	4	5
Balance cash and receipts	1	2	3	4	5
Prepare bank deposits	1	2	3	4	5
Process invoices for payment	1	2	3	4	5
Balance bank statements with checkbook	1	2	3	4	5
Maintain accounting journals electronically	1	2	3	4	5
Maintain accounting journals manually	1	2	3	4	5
Prepare purchase requisitions	1	2	3	4	5
Complete travel vouchers/charge slips	1	2	3	4	5
Calculate billing of services/products	1	2	3	4	5
Receive/accept payments for services/products	1	2	3	4	5
(Please list & rate below any other skills):					
	1	2	3	4	5
	1	2	3	4	5
Managing Records & Files					
File materials manually	1	2	3	4	5
File materials electronically	1	2	3	4	5
Maintain a secure filing system	1	2	3	4	5
Maintain telephone numbers & addresses	1	2	3	4	5
Maintain backup files electronically	1	2	3	4	5
Set up records management system	1	2	3	4	5
Maintain biographical data of employees	1	2	3	4	5
Purge records and/or files	1	2	3	4	5
Access files	1	2	3	4	5
Maintain historical records	1	2	3	4	5
Maintain reference library	1	2	3	4	5
Use on-line reference library	1	2	3	4	5
Use office reference library (books, journals, manuals)	1	2	3	4	5
(Please list & rate below any other skills):					
	1	2	3	4	5
	1	2	3	4	5
Communications					
Explain/describe office procedures to others	1	2	3	4	5
Conduct orientation of new employees	1	2	3	4	5
Prepare and deliver oral presentations	1	2	3	4	5
Prepare correspondence	1	2	3	4	5
Compose written directions	1	2	3	4	5
Maintain telephone log	1	2	3	4	5
Handle routine telephone communications	1	2	3	4	5
Greet/receive visitors and clients	1	2	3	4	5
Develop liaisons with business related organizations	1	2	3	4	5
Direct inquiries to appropriate person or department	1	2	3	4	5
Maintain confidential material	1	2	3	4	5

Importance of Skill:

1-Not important (skill not needed in the performance of the job)
2-Somewhat important (skill might be needed in the performance of the job)
3-Important (skill usually needed in performance of the job)
4-Very important (skill needed in the performance of the job)
5-Extremely important (skill critical to the performance of the job)

Communications (Continued)	Importance of Skill				
Participate on task forces/committees	1	2	3	4	5
Maintain modern telecommunication technical knowledge	1	2	3	4	5
(Please list & rate below any other skills):					
	1	2	3	4	5
	1	2	3	4	5
Document Production					
Type documents composed by someone else	1	2	3	4	5
Type/compose a document	1	2	3	4	5
Edit documents keyed by others	1	2	3	4	5
Insert a graphic in document	1	2	3	4	5
Design a table	1	2	3	4	5
Design forms	1	2	3	4	5
Use a typewriter to complete preprinted forms, envelopes, & mailing labels	1	2	3	4	5
Print information	1	2	3	4	5
Prepare materials for copying	1	2	3	4	5
Photocopy a document using appropriate equipment	1	2	3	4	5
Scan data into a document electronically	1	2	3	4	5
Scan graphics into a document electronically	1	2	3	4	5
Secure document notarization	1	2	3	4	5
Revise existing document	1	2	3	4	5
Access the Help function of software	1	2	3	4	5
Locate data	1	2	3	4	5
Detect all content, format, and typo errors	1	2	3	4	5
Develop and revise a database using software	1	2	3	4	5
Decide on the best process for reproducing printed materials	1	2	3	4	5
Merge text using software	1	2	3	4	5
Prepare an index of the word processing directory/subdirectory	1	2	3	4	5
Create high-quality visual aids	1	2	3	4	5
Match software to work on hand	1	2	3	4	5
Create a new document	1	2	3	4	5
Transcribe notes	1	2	3	4	5
Take dictation in speedwriting	1	2	3	4	5
Take dictation in shorthand	1	2	3	4	5
Take dictation at the keyboard	1	2	3	4	5
Create a boilerplate/template/macro using software	1	2	3	4	5
Create/prepare documents using spreadsheet software	1	2	3	4	5
Create/prepare documents using presentation software	1	2	3	4	5
Create/prepare documents using accounting software	1	2	3	4	5
Create/prepare documents using financial software	1	2	3	4	5
Create/prepare documents using word processing software	1	2	3	4	5
Create/prepare documents using project management software	1	2	3	4	5
Create/prepare documents using voice recognition software	1	2	3	4	5
(Please list & rate below any other skills):					
	1	2	3	4	5
	1	2	3	4	5

Importance of Skill:

1-Not important (skill not needed in the performance of the job)
2-Somewhat important (skill might be needed in the performance of the job)
3-Important (skill usually needed in performance of the job)
4-Very important (skill needed in the performance of the job)
5-Extremely important (skill critical to the performance of the job)

Information Distribution	Importance of Skill				
Process voice mail	1	2	3	4	5
Process electronic mail	1	2	3	4	5
Process documents received by facsimile machine	1	2	3	4	5
Process mail	1	2	3	4	5
Distribute materials	1	2	3	4	5
Process document received through computer modem	1	2	3	4	5
Utilize courier services	1	2	3	4	5
Process packages according to postal or courier service	1	2	3	4	5
(Please list & rate below any other skills):					
	1	2	3	4	5
	1	2	3	4	5
Producing Desktop-Publishing Documents					
Lay out a desktop-published document using available equipment	1	2	3	4	5
Create documents using desktop-publishing software	1	2	3	4	5
Create charts using desktop-publishing software	1	2	3	4	5
Create templates using desktop-publishing software	1	2	3	4	5
Create graphs using desktop-publishing software	1	2	3	4	5
Custom design a desktop-published document	1	2	3	4	5
Download images from digital camera into desktop document	1	2	3	4	5
(Please list & rate below any other skills)					
	1	2	3	4	5
	1	2	3	4	5
Supervising Personnel					
Develop and maintain administrative services policies and procedures	1	2	3	4	5
Assist employees in performing job	1	2	3	4	5
Hire personnel	1	2	3	4	5
Advertise for job opening(s)	1	2	3	4	5
Conduct staff meetings	1	2	3	4	5
Maintain employee records	1	2	3	4	5
Provide continuing education opportunities for other people	1	2	3	4	5
Resolve personnel problems	1	2	3	4	5
Develop employee performance evaluation/standards	1	2	3	4	5
Evaluate employee's performance	1	2	3	4	5
Schedule and assign work to employees to meet priorities	1	2	3	4	5
Schedule staffing to meet work priorities	1	2	3	4	5
Maintain information on production of administrative services	1	2	3	4	5
(Please list & rate below any other skills)					
	1	2	3	4	5
	1	2	3	4	5

PART II. You and Your Use of Office Technology

Please indicate your use of software/programs to perform your job. Check all that apply and write the name of the software /program in the space provided. For example: **[\] Word processing software** MS Word 2000

[ ] Word processing software _____
[ ] Spreadsheet software _____
[ ] Accounting software _____
[ ] Desktop publishing software _____
[ ] Internet software _____
[ ] Intranet software _____
[ ] Instant messanger software _____
[ ] Conference software _____
[ ] Electronic mail software _____
[ ] Calendaring/scheduling software _____
[ ] Project management software _____
[ ] Database software _____
[ ] Presentation software _____
[ ] Graphic software _____
[ ] Operating system software _____
[ ] Voice recognition software _____
[ ] Financial software _____
[ ] Statistical software _____
[ ] Personal information manager (PIM) _____
[ ] Network software _____
[ ] Other (list)_____
_____

Please check the items that you use in the performance of your job (check all that apply)

[ ] Scanner
[ ] Camcorder
[ ] Typewriter
[ ] Calculator
[ ] Voice mail via answering machine
[ ] Voice mail via telephone service
[ ] Local Area Network (LAN)
[ ] Wide Area Network (WAN)
[ ] Laptop/notebook computer
[ ] Personal computer (desktop)
[ ] Dictaphone
[ ] Copier
[ ] Digital Camera
[ ] Television/video cassette recorder
[ ] Computer printer
[ ] Single-line telephone system
[ ] Multi-line telephone system
[ ] Cellular phone
[ ] Pager
[ ] Facsimile machine
[ ] Electronic bulletin board
[ ] Postage meter
[ ] Personal Digital Assistant (PDA)
[ ] Internet Fax
[ ] Video Conferencing
[ ] Audio Conferencing
[ ] Virtual Conferencing
[ ] Computer Conferencing
[ ] Other (list) _____
_____

PART III. You & Your Organization/Company (Related Information)

Age (Check Only One):
- ☐ Under 20 years
- ☐ 20-29 years
- ☐ 30-39 years
- ☐ 40-49 years
- ☐ 50-59 years
- ☐ 60-69 years
- ☐ Over 69 years

Size of the Office Where You Work (Check Only One)
- ☐ Very small (1-10 employees)
- ☐ Small (11-99 employees)
- ☐ Medium (100-499 employees)
- ☐ Large (500 or more employees)

Company/Organizational Scope (Check Only One)
- ☐ One location
- ☐ Local locations only
- ☐ State-wide locations
- ☐ Regional locations
- ☐ Nation-wide locations
- ☐ International Locations

Location of Office Where You Work by City Population Size (Check Only One)
- ☐ Small city/town (less than 5,000)
- ☐ Medium city (5,001-25,000)
- ☐ Medium-large city (25,001-50,000)
- ☐ Large city (greater than 50,001)

Number of Years of Work Experience in the Field of Administrative Support Occupations: (as of last or nearest anniversary date): _____

Gender: ☐ Male ☐ Female

Current Job Title: _____

Highest Degree Earned: (Check Only One)
- ☐ High School Diploma
- ☐ Certificate Program (vocational tech school)
- ☐ Certificate Program (business school)
- ☐ Associate Degree
- ☐ Bachelors Degree
- ☐ Other (Identify) _____

Standard Industrial Classification of Organization/Company (Check Only One):
- ☐ Agriculture, forestry, & fishing
- ☐ Mining
- ☐ Construction
- ☐ Transportation, communication, electric, gas, & sanitary services
- ☐ Wholesale & retail trade
- ☐ Finance, insurance, & real estate
- ☐ Services
- ☐ Public administration
- ☐ Manufacturing

THANK YOU FOR PARTICIPATING IN THIS STUDY.

If you would like to receive a copy of the results of this study, please fill in the following information.

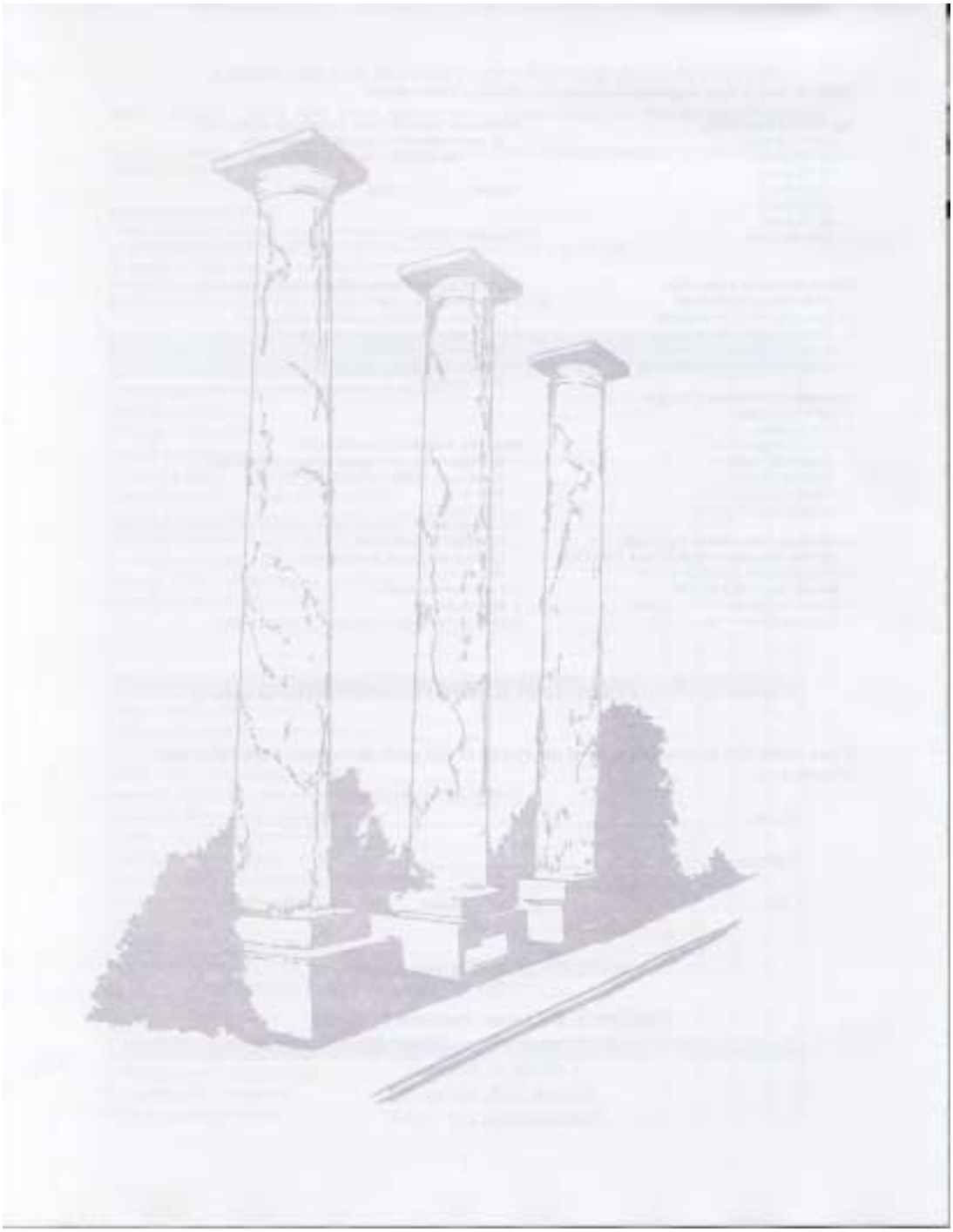
Name: _____

Address: _____

City: _____ **State:** _____ **Zip Code:** _____

RETURN QUESTIONNAIRE:

Margaret S. Kilcoyne, Assistant Professor
Northwestern State University
College of Business
Russell Hall, Room 201
Natchitoches, LA 71497



APPENDIX K

PRENOTIFICATION LETTER

August 29, 2002

Name
Address
City, State zip Code

In a few days you will receive in the mail a request to complete a skills inventory questionnaire for an important research project being conducted by the Northwestern State University College of Business.

It concerns job skills of people working in the administrative support occupations. As a person currently working in the administrative support occupations' area, I believe that you are the most knowledgeable person to describe the skills and knowledge needs of this field.

I am writing in advance because many people like to know ahead of time that they will be contacted. This study will allow educators to identify the job skills used by administrative support occupations workers to perform their jobs. This information will provide a guide for revising the existing office information system curriculum and developing new courses or programs.

Your participation in this study is strictly voluntary. By completing and returning the skills inventory questionnaire, you are agreeing to participate in this study. Your responses are completely confidential and will be released only as summaries in which no individual's responses can be identified.

Thank you for your time and consideration. It's only with the generous help of people like you that our research can be successful. Your input is very valuable to our office information systems program at Northwestern State University.

Sincerely,

Margaret Kilcoyne, Assistant Professor
Office Information Systems

I will be enclosing a small token of appreciation with the skills inventory questionnaire as a way of saying thanks.

APPENDIX L

SURVEY COVER LETTER

September 10, 2002

Name
Address
City, State Zip Code

S.O.S. HELP! I NEED YOUR HELP!

Advancing technology and restructuring of organizations in the office environment have caused changes in the office. The job duties, responsibilities, skills, and titles of the administrative support occupations' workers performing jobs in the office environment have changed also. As a person currently working in the administrative support occupations' area, I believe that you are the most knowledgeable person to describe the changes occurring in this field.

Results from the study will be used to help educators prepare office information system's graduates to meet the employment needs of business and industry. By identifying the job skills used by administrative support occupations workers, educators will be able to use the information as a guide to revise the existing office information system curriculum and to develop new courses or programs.

Participating in this study is strictly voluntary. By completing and returning the skills inventory questionnaire, you are agreeing to participate in this study. Your responses are completely confidential and will be released only as summaries in which no individual's responses can be identified. A coded number has been placed at the bottom of the questionnaire for follow-up purposes only. It takes on average about **15 minutes** to complete the **Administrative Support Occupations' Skill Inventory** questionnaire. Please return the completed questionnaire using the enclosed stamped return envelope on or before **Friday, September 20, 2002**.

Your input is very valuable to our office information systems program at Northwestern State University. I have enclosed a small token of appreciation as a way of saying thanks for your help. Complete the address form at the end of the questionnaire if you would like to receive a summary of the findings.

Should you have any questions or concerns, feel free to contact me at 318.357.5715 or e-mail Kilcoyne@nsula.edu.

Sincerely,

Margaret Kilcoyne, Assistant Professor
Office Information Systems

Enclosures

APPENDIX M

POSTCARD THANKYOU/REMINDER

APPENDIX N

FOLLOW-UP LETTER

November 21, 2002

Name
Address
City, State Zip Code

About three weeks ago your received a skills inventory questionnaire for administrative support occupations workers. To the best of my knowledge, it has not been returned.

I am writing again because of the importance that your skills inventory questionnaire has for helping to get accurate results. Who knows their job better than the person who performs it every day? You are the expert. I need your input to prepare our graduates.

Your participation in this study is strictly voluntary. By completing and returning the skills inventory questionnaire, you are agreeing to participate in this study. An identification code is printed on each so that I can delete your name from the mailing list when it is returned. The list of names is then destroyed so that individual names can never be connected to the results in any way. Protecting the confidentiality of people's answers is very important to us, as well as the University.

Please complete and return the skills inventory questionnaire by **Wednesday, December 4, 2002**. If for any reason you prefer not to answer it, please let us know by returning a note or blank questionnaire in the enclosed stamped envelope.

Call me if you have any questions. I can be reached at 318.357.5715 or e-mail Kilcoyne@nsula.edu.

Sincerely,

Margaret Kilcoyne, Assistant Professor
Office Information Systems

Enclosures

APPENDIX O

ADDITIONAL CATEGORICAL SKILL ITEMS REPORTED BY PARTICIPANTS

Additional Category Job Skill Items Reported by Participants	*n*	Rating
Organizing & Planning Function		
Language skills	1	5
Event planning local and out of town	1	5
Incentive items purchase/inventory	1	5
Attend continuing education	1	5
Proofreading prepared work	1	5
Prioritize	1	No Rating
Meeting minutes	1	5
My job involves a great deal of scheduling	1	No Rating
Team/departmental accomplishment celebrations	1	5
Provide meals/snacks/drinks for meeting attendees	1	5
Arrange conferences	1	5
Plan programs	1	5
Follow through & follow-up	1	5
Understand corporate mission & vision	1	4
Maintaining Equipment & Supplies		
Assist when equipment breaks down	1	5
Follow policy & procedures regarding computer operation	1	5
Maintain maintenance services contracts	1	5
Performing Financial Functions		
Process W2's & 1099's	1	5
Process quarterly payroll taxes	1	5
Using company credit card for purchases correctly	1	5
Prepare budget	1	5
Reconcile accounts	1	5
Conduct departmental purchases	1	5
Obtain equipment price quotes & negotiate	1	5
Maintain spreadsheets for statistics	1	4
Prepare & monitor budgets	1	3
Prepare explanation of variances from budget	1	4
Petty cash	1	3

Additional Job Skill Items Reported by Category	*n*	Rating
Managing Records & Files		
Confidentiality of customer's information	1	5
Research & compile data for reports	1	4
Index for historical records/archived electronic files	1	5
Data input for work performed	1	5
Communications		
Attend communication updated classes	1	4
Navigate the Internet	1	4
Document Production		
Access a& prepare reports from company mainframe computer	1	5
Keep abreast of new software & updates	1	5
Make electronic forms out of scanned documents-edit on computer	1	5
Design book & journal library	1	5
Research data	1	5
Information Distribution		
Track FedEX/UPS/USPS packages	1	4
Producing Desktop-Publishing Documents		
Download images from digital camera into wp document	1	5
Although I don't use this is a valuable skill for one to have	1	No Rating
Supervising Personnel		
I administer help in these areas, I'm not a supervisor	1	5

Note. Some participants reported more than one additional job skill item for each category. Importance of Skill scale: 1=Not Important, 2=Somewhat Important (skill might be needed in the performance of the job), 3=Important (skill usually needed in performance of the job), 4=Very Important (skill needed in the performance of the job), and 5=Extremely Important (skill critical to the performance of the job)

APPENDIX P

PERCENT OF VARIANCE AND FACTOR LOADING OF JOB SKILL ITEMS

Items	Percent of Variance	Item Factor Loading
Organizing & Planning Function	**45.07**	
Arrange meetings		.84
Arrange conferences		.83
Prepare agenda and compile materials for meetings		.80
Arrange travel and itinerary for supervisor		.76
Maintain supervisor's appointment calendar electronically		.73
Arrange other activities/functions		.71
Design an office layout		.60
Maintain supervisor's appointment calendar manually		.59
Gather and compile data for supervisor and company reports		.48
Coordinate work schedule and distribution		.45
Develop a plan for organizing one' own work		.43
Maintaining Equipment & Supplies	**51.76**	
Schedule office equipment maintenance		.81
Perform regular equipment maintenance		.79
Receive, install, and store office equipment		.79
Train others in operation of equipment		.75
Maintain inventory of supplies		.74
Receive and store office supplies		.73
Maintain office equipment inventory & leases for equipment		.72
Maintain inventory of forms		.71
Assist others in operating equipment		.69
Purchase office equipment & furniture		.68
Order supplies		.67
Train others in use of software		.62
Maintain software for current office use		.62
Performing Financial Functions	**55.64**	
Balance cash and receipts		.85
Balance bank statements with checkbook		.84

Items	Percent of Variance	Item Factor Loading
Maintain accounting journals manually		.84
Maintain accounting journals electronically		.83
Receive/accept payments for services/products		.82
Prepare bank deposits		.79
Calculate billing services/products		.78
Calculate payroll electronically		.74
Manage office expenses		.74
Calculate payroll manually		.68
Plan for budgetary needs		.67
Process invoices for payment		.65
Prepare purchase requisitions		.60
Complete travel vouchers/charge slips		.54
Managing Records & Files	**44.86**	
Maintain a secure filing system		.75
Set up records management system		.74
Purge records and/or files		.73
Maintain historical records		.73
Access files		.72
Maintain telephone numbers & addresses		.68
File materials manually		.67
File materials electronically		.67
Maintain reference library		.62
Maintain backup files electronically		.61
Use office reference library (books, journals, manuals)		.61
Maintain biographical data of employees		.59
Use on-line reference library		.53
Communications	**40.54**	
Compose written directions		.77
Develop liaisons with business related organizations		.72
Direct inquiries to appropriate person or department		.69
Prepare correspondence		.68
Maintain confidential material		.65
Explain/describe office procedures to others		.64
Participate on task forces/committees		.63
Greet/receive visitors and clients		.60
Conduct orientation of new employees		.59
Prepare and deliver oral presentations		.58
Maintain telephone log		.54
Handle routine telephone communications		.53

Items	Percent of Variance	Item Factor Loading
Maintain modern telecommunication technical knowledge		.63
Document Production	**36.92**	
Type documents composed by someone else		.52
Type/compose a document		.67
Edit documents keyed by others		.62
Insert a graphic in document		.78
Design a table		.78
Design forms		.75
Use a typewriter to complete preprinted forms, envelopes, & mailing labels		.36
Print Information		.50
Prepare materials for copying		.54
Photocopy a document using appropriate equipment		.49
Scan data into a document electronically		.66
Scan graphics into a document electronically		.68
Secure document notarization		.60
Revise existing document		.75
Access the Help function of software		.77
Locate data		.72
Detect all content, format, and typo errors		.66
Develop and revise a database using software		.60
Decide on the best process for reproducing printed materials		.67
Merge text using software		.70
Prepare an index of the word processing directory/ subdirectory		.66
Create high-quality visual aids		.73
Match software to work on hand		.63
Create a new document		.65
Transcribe notes		.49
Take dictation in speedwriting		.44
Take dictation in shorthand		.37
Take dictation at the keyboard		.52
Create a boilerplate/template/macro using software		.59
Create/prepare documents using spreadsheet software		.58
Create/prepare documents using presentation software		.70
Create/prepare documents using accounting software		.41

Items	Percent of Variance	Item Factor Loading
Create/prepare documents using financial software		.41
Create/prepare documents using word processing software		.60
Create/prepare documents using project management software		.45
Create/prepare documents using voice recognition software		.37
Information Distribution	**61.78**	
Process voice mail		.73
Process electronic mail		.75
Process documents received by facsimile machine		.85
Process mail		.86
Distribute materials		.85
Process document received through computer modem		.67
Utilize courier services		.78
Process packages according to postal or courier service		.77
Producing Desktop-Publishing Documents	**90.60**	
Lay out a desktop-published document using available equipment		.95
Create documents using desktop-publishing software		.97
Create charts using desktop-publishing software		.98
Create templates using desktop-publishing software		.98
Create graphs using desktop-publishing software		.98
Custom design a desktop-published document		.98
Download images from digital camera into desktop document		.82
Supervising Personnel	**65.41**	
Develop and maintain administrative services policies and procedures		.63
Assist employees in performing job		.62
Hire personnel		.87
Advertise for job opening(s)		.80
Conduct staff meetings		.78
Maintain employee records		.61
Provide continuing education opportunities for other people		.84
Resolve personnel problems		.87

Items	Percent of Variance	Item Factor Loading
Develop employee performance evaluation/standards		.91
Evaluate employee's performance		.88
Schedule and assign work to employee to meet priorities		.89
Schedule staffing to meet work priorities		.90
Maintain information on production of administrative services		.82

APPENDIX Q

OTHER SOFTWARE/PROGRAM NAMES REPORTED BY PARTICIPANTS

Other Software/Program Name Reported by Participants	*n*	*%*
MS VISIO	3	12.0
Adobe Acrobat	3	12.0
Peoplesoft	3	12.0
Acrobat Reader	2	8.0
Ellipsis	2	8.0
CD Burner	2	8.0
SAP	2	8.0
Address Book Windows 7.0	1	4.0
Kodak Easy Share	1	4.0
Language (Foreign)	1	4.0
Micro Sped	1	4.0
Windows 2000	1	4.0
Case Management. for Windows	1	4.0
Global Livelink	1	4.0
Test Scoring Software	1	4.0
WordPerfect	1	4.0
Org Plus	1	4.0
Printshop Deluxe	1	4.0
Quicken	1	4.0
Publisher	1	4.0
Unity Voice Mail System	1	4.0
Lawson	1	4.0
Smart Draw Photo	1	4.0
Acco-series	1	4.0
CPRS	1	4.0
KRONOS System Database	1	4.0
CISCO IPTV	1	4.0
Job Choices	1	4.0
Meeting Room Manager	1	4.0
Quick Books	1	4.0
Micrographics	1	4.0
Octel Voice Mail System	1	4.0
Digital Photo Imaging Software	1	4.0
Citrix	1	4.0
Workforce Software	1	4.0
Design Pro 2000	1	4.0
File Maker Pro	1	4.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

APPENDIX R

SOFTWARE/PROGRAM NAMES REPORTED BY PARTICIPANTS

Word Processing Software Name Reported by Participants	*n*	*%*
MS Word	139	90.8
WordPerfect	24	15.7
Lotus Word	3	2.0
ACT	1	.6
Acrobat Reader	1	.6
MS	1	.6
HP	1	.6
Participant Did Not Report Software Name	3	1.9

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Spreadsheet Software Name Reported by Participants	*n*	*%*
MS Excel	138	97.9
Lotus 123	5	5.0
MS Access	5	4.5
MS Works	1	.7
Quattro Pro	1	.7
Approach	1	.7
HP	1	.7
MS	1	.7
Participant Did Not Report Software Name	2	1.3

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Accounting Software Name Reported by Participants	*n*	*%*
Quicken	8	16.0
Quick Books	5	10.0
MS Excel	5	10.0
SAP	4	8.0
MAS90	3	6.0
Peachtree	3	6.0
Peoplesoft	3	6.0
Vista	1	2.0
JDEdwards	1	2.0
CEFMS	1	2.0
Oracle	1	2.0
ARK	1	2.0
SI	1	2.0
Allegro	1	2.0
ERP/Enterprise	1	2.0

Solomon	1	2.0
OCIE	1	2.0
Micro Money	1	2.0
MS Money	1	2.0
Shelby	1	2.0
Pillar	1	2.0
Otis Craig	1	2.0
KRONOS[a]	1	2.0
Merak	1	2.0
Proprietary	1	2.0
MS Access	1	2.0
Participant Did Not Report Software Name	3	6.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Desktop Publishing Software Name Reported by Participants	*n*	*%*
MS Publisher	26	49.1
MS PowerPoint	9	16.9
Adobe PageMaker	5	9.4
Print Shop	5	9.4
Front Page	4	7.5
PhotoShop	2	3.8
PrintMaster Gold	1	1.9
Corel Ventura	1	1.9
Corel Draw	1	1.9
Macromedia Freehand	1	1.9
Dreamweaver	1	1.9
Brothers Desktop	1	1.9
MS	1	1.9
Participant Did Not Report Software Name	5	9.4

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Internet Software Name Reported by Participants	*n*	*%*
Internet Explorer	57	48.7
Netscape	15	12.8
MSN Explorer	8	6.8
Customize by Corporation	3	2.6
AOL	2	1.7
Lotus Notes	2	1.7
MS Outlook	2	1.7
SIS	1	.8
FrontPage	1	.8
MS Office 2000	1	.8
MS Word	1	.8

MS Windows.Net	1	.8
Novell	1	.8
Dreamweaver	1	.8
Hotmail	1	.8
Yahoo	1	.8
Adobe	1	.8
MS PowerPoint	1	.8
MS	4	3.2
Digital	1	.8
MS Network	1	.8
Participant Did Not Report Software Name	26	22.2

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Intranet Software Name Reported by Participants	*n*	*%*
MS Internet Explorer	12	19.0
Customize by Corporation	5	7.9
Lotus Notes	5	7.9
Netscape	3	4.8
MS Outlook	1	1.6
MSN Explorer	1	1.6
Vignette	1	1.6
Groupwise	1	1.6
ExxonMobil	1	1.6
Phone Slips	1	1.6
FrontPage	1	1.6
MS Office 2000	1	1.6
MS	3	4.8
Microsoft 2000	1	1.6
Participant Did Not Report Software Name	29	46.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Instant Messenger Software Name Reported by Participants	*n*	*%*
AOL	10	21.7
MS Outlook	9	19.6
Yahoo Messenger	5	10.9
Lotus Notes	4	8.7
Sametime	4	8.7
MSN Messenger	3	6.5
Groupwise	2	4.3
Windows Messenger	2	4.3
MS AIM	1	2.1
Metro Call	1	2.1
MS	1	2.1
Participant Did Not Report Software Name	10	21.7

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Conference Software Name Reported by Participants	*n*	*%*
MS Outlook	4	21.1
MS Net Meeting	4	21.1
A T & T Conference	3	15.8
Lotus Notes	2	10.5
REALM	1	5.3
Customized by Corporation	1	5.3
Participant Did Not Report Software Name	4	21.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

E-mail Software Name Reported by Participants	*n*	*%*
MS Outlook	75	59.1
Lotus Notes	29	22.8
Groupwise	4	3.1
Eudora	3	2.4
Netscape	3	2.4
MSN	3	2.4
CC Mail	2	1.6
Meditech	1	.8
Yahoo	1	.8
MS	1	.8
Participant Did Not Report Software Name	16	12.6

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Calendaring/Scheduling Software Name Reported by Participants	*n*	*%*
MS Outlook	66	55.9
Lotus Notes	24	20.3
Groupwise	7	5.9
Lotus Organizer	5	4.2
Calendar Creator	2	1.7
Abacus	2	1.7
MS Scheduler	2	1.7
MS Project	2	1.7
MSN	1	.8
Webevent	1	.8
JADE	1	.8
Novis	1	.8
Now-Up-to-Date	1	.8
Franklin Covey Planner	1	.8
PalmPilot	1	.8

NetMeeting	1	.8
MS	3	2.5
Microsoft	1	.8
Participant Did Not Report Software Name	9	7.6

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Database Software Name Reported by Participants	*n*	*%*
MS Access	66	75.9
Lotus Notes	4	4.6
Oracle	3	4.6
ACT	2	2.3
PeopleSoft	2	2.3
Customized by Corporation	1	1.1
MS Outlook	1	1.1
Paradox	1	1.1
FileMaker Pro	1	1.1
Folio	1	1.1
Form Flow	1	1.1
MS Excel	1	1.1
Vista	1	1.1
HPA Assist	1	1.1
Nut Plus	1	1.1
Varies	1	1.1
MS	1	1.1
Participant Did Not Report Software Name	8	14.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Project Management Software Name Reported by Participants	*n*	*%*
MS Project	12	57.1
SAP	1	4.8
MS Outlook	1	4.8
MS Excel	1	4.8
POM	1	4.8
MS	2	9.5
Participant Did Not Report Software Name	4	19.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Presentation Software Name Reported by Participants	*n*	*%*
MS PowerPoint	107	92.2
VISIO	2	1.7
PhotoEditor	1	.9
Harvard Graphic	1	.9
MS	1	.9

Participant Did Not Report Software Name	10	8.6

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Graphic Software Name Reported by Participants	*n*	%
MS PowerPoint	10	21.7
VISIO	5	11.0
Adobe Acrobat	4	8.7
MS Excel	2	4.3
Broderbund Click Art	2	4.3
ASI	2	4.3
Corel Draw	2	4.3
PhotoShop	2	4.3
PrintShop	2	4.3
MS Publisher	2	4.3
MS PhotoEditor	1	2.2
WP 2000	1	2.2
MS Picture It	1	2.2
MS Clip Art Gallery	1	2.2
Flash	1	2.2
PaintBrush	1	2.2
Harvard Graphic	1	2.2
PressWrter	1	2.2
ACDSEE	1	2.2
FrontPage	1	2.2
MS Word	1	2.2
Customized by Corporation	1	2.2
Many	2	4.3
MS	3	6.5
Desktop	1	2.2
Participant Did Not Report Software Name	6	13.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Operating Systems Software Name Reported by Participants	*n*	%
MS Windows	35	87.5
MS Office Suite	1	2.5
Mac OS 9	1	2.5
Vista	1	2.5
Shelby	1	2.5
Customized by Corporation	2	5.0
MS	4	10.0
Participant Did Not Report Software Name	1	2.5

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Financial Software Name Reported by Participants	*n*	*%*
SAP	3	14.3
MS Excel	3	14.3
Quicken	2	9.5
PeopleSoft	2	9.5
Vista	1	4.8
Shelby	1	4.8
DowFas	1	4.8
SmartStream	1	4.8
ERP/Enterprise	1	4.8
Customized by Corporation	3	14.3
MoBius	1	4.8
Participant Did Not Report Software Name	2	9.5

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Voice Recognition Software Name Reported by Participants	*n*	*%*
Customized by Corporation	1	50.0
Participant Did Not Report Software Name	1	50.0

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Statistical Software Name Reported by Participants	*n*	*%*
MS Excel	2	25.0
SPSS	1	12.5
Survey Pro	1	12.5
Vista	1	12.5
ERP/Enterprise	1	12.5
MS Access	1	12.5
Customized by Corporation	1	12.5
Participant Did Not Report Software Name	1	12.5

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Personal Information Management Software Name Reported by Participants	*n*	*%*
Blackberry	2	33.3
Lotus Notes	1	16.7
HR Program	1	16.7
KRONOS	1	16.7
Palm	1	16.7
Customized by Corporation	1	16.7

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

Network Software Name Reported by Participants	*n*	*%*
Novell	5	17.9
MS Windows	4	14.3
WES 30	2	7.1
LAN	2	7.1
FrontPage	2	7.1
3 Com Office Connect	1	3.6
AOL	1	3.6
MS Internet Explorer	1	3.6
Adobe Acrobat/Acrobat Distiller	1	3.6
BellSouth	1	3.6
City of Houston Systems	1	3.6
Customized by Corporation	1	3.6
DSL	1	3.6
MS	2	7.1
Participant Did Not Report Software Name	6	21.4

Note. Number does not equal 157 and percentage does not equal 100 because participants reported more than one software/program name.

VITA

Margaret Sepulvado Kilcoyne was born on June 12, 1956, in Alexandria, Louisiana. She is the daughter of the late Walter C. (Doug) Sepulvado and Margaret F. (Polly Lou) Sepulvado, a retired business educator of 33 years in the Louisiana school system. She graduated from Boyce High School in 1974, received a bachelor's degree in distributive and business education from Northwestern State University in 1979, and a master's degree in business education with vocational and computer literacy certification from Northwestern State University in 1985.

Her first teaching position was in Marthaville, Louisiana, as a business teacher at a rural high school. In the fall of 1986, she joined the College of Business faculty at Northwestern State University as an adjunct instructor. In 1989, she successfully secured a five-year federal grant from the United States Department of Education in Washington D.C. to implement and coordinate a university-wide cooperative education program at Northwestern State University. Since that time she has been promoted to director of the cooperative education program, has been reassigned to the College of Business as an assistant professor and has become active in many professional and civic organizations. Her current teaching assignments include business communication, cooperative education and microcomputer applications courses.

She is married to James Patrick Kilcoyne, a junior high/high school science teacher in the Red River Parish school system. She is the mother of four children, Jocelyn Brooke Hennigan (deceased), John Roy Hennigan III (Trey), age 24, Clavord Sepulvado Hennigan (Clay), age 22, and Sarah Martha Kilcoyne (my Russian princess), age 11.