

**IDENTIFICATION OF COURSE COMPETENCIES RECOMMENDED  
FOR ENTRY-LEVEL OFFICE SYSTEMS MANAGEMENT  
PERSONNEL BASED ON OFFICE SYSTEMS  
PRACTITIONERS' PERCEPTIONS**

**By**

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## CHAPTER I

### THE RESEARCH PROBLEM

#### Introduction

The development and implementation of an office systems curriculum that is relevant for the 1990's for the university level presents a major challenge to business educators. Stallard and Hunt (1987) say that "collegiate programs in Office Systems education are designed to train graduates to pursue employment that will make them marketable and promotable in the corporate world" (p. 23).

A definition of the field of office systems management means being able to plan, organize, control, direct, and communicate effectively in an office systems environment. Technological changes in the office have increased rapidly in the past decade. Changes in the office require that business educators look at how they might best provide relevant programs for training office systems graduates.

As the office is constantly changing, educators experience difficulty in determining what should be taught to students as they prepare to meet requirements in the workplace. Hunt (1989) states that "a growing number of prominent educators are suggesting movement from a traditional 'skills-oriented' curricula to curricula that embrace a systems approach to learning" (p. 1). As the

office technology changes, so should the office curriculum change. Ownby (1989) states that "curriculum development is a prerequisite to excellence in education, for the use of superior teaching/learning strategies is meaningless if course/program content is deficient" (p. 1).

### Need for the Study

Oswalt and Arn (1989) state that articulation between business and education needs to be strengthened in order to ensure that competencies necessary for entry-level employment in lower- to middle-management in office administration/business education departments are met (p. 42). According to Margotta (1988), the interdependence of academic and corporate sectors is rapidly becoming a reality, and educators must respond by offering the necessary curriculum.

The Office Systems Research Association (OSRA) researched the basis for its undergraduate office systems curriculum in 1985 and revealed its model curriculum in 1986. The model curriculum was developed to emphasize the training of personnel for technologically oriented office settings. However, to date, little research has been conducted to assess the practical application of the competencies within the postsecondary, office systems curriculum and how it satisfies the needs of various sizes of businesses and offices.

This study identifies office systems course competencies essential for entry-level office systems management positions in various sizes of businesses and offices in Eastern Kansas.

## Statement of the Problem

This study was to determine the nature of the relationships among office systems management course competencies needed for entry-level employment in lower- to middle-management positions in office systems as perceived by office systems practitioners in small-, medium-, and large-size businesses and offices in Eastern Kansas.

## Variables

Business size and office size were the independent variables of this research study. The two size variables were reported in three levels: (1) the total number of employees in the business (small = 1-50; medium = 51-250; large = over 250) and (2) the number of office employees in the business (small = 1-7; medium = 8-35; large = over 35).

The dependent variable in this research study was the level of importance perceived by office systems practitioners concerning 45 office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems.

## Purpose of the Study

The purpose of this study was to provide office systems curriculum information for business education, analysis and design.

## Hypotheses Tested

In order to achieve the purpose of this study, the following null hypotheses were tested at the .05 level of significance:

- H<sub>1</sub>** There is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size **businesses** in Eastern Kansas.
- H<sub>2</sub>** There is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size **offices** in Eastern Kansas.

## Delimitations

The following delimitations were imposed for this study:

1. The sample was selected from those ~~Topeka, Wichita, and Kansas City~~ businesses listed in the ~~Kansas Directory of Commerce~~.
2. The data were gathered using a researcher-designed questionnaire.

## Limitations of the Study

The following factors, which limit the validity, reliability, sensitivity and specificity of this study, were those common to results from survey studies:

1. The information was accurate only to the extent that the questions were answered truthfully by the respondents.
2. The survey questions were valid.

### Assumptions

The following assumptions were made:

1. Office systems practitioners are qualified to make an assessment of essential office systems course competencies.
2. A Likert-type scale is a valid and reliable means for assessing the level of importance of office systems course competencies.

### Definitions

The following terms are defined for clarification of their intent and use in this study:

Computer System (CS): All computer hardware, software, and personnel needed to perform the desired computing activities and functions. The cycle of a computer system includes input, processing, output, distribution/ transmission, and storage/retrieval.

Competency: A task (specific activity performed by a worker) that is performed to a certain standard.

Curriculum: A school's set of interrelated courses or experiences that lead to some predetermined educational objective.

Information Processing (IP): The process of transforming information from source data, or input, into forms of information that are usable for an intended purpose (Regan & O'Connor, 1989, p. 830).

Information System (IS): Systematic procedures to create capture, transform, interpret, reproduce, distribute, store, and make available data and information for knowledge workers and decision makers (Regan & O'Connor, p. 830).

Model Curriculum: A suggested curriculum that can be used as is or be modified by a school to suit its needs.

Office Systems: Business systems that provide service and information to managers and professionals for decision-making purposes. This area is composed of administrative personnel, procedures, and technology endeavoring to achieve the total business objective (Miller, 1986, p. 8).

Office Systems Research Association Model Office Systems Curriculum: Developed for use as a recommended framework and guide in implementing four-year office systems programs at the collegiate level. The curriculum is designed to include four components: general education courses, standard business courses, office systems core courses, and office systems optional courses (Hunt, 1988, p. 12).

Office Systems Education: An emerging discipline and planned educational approach for preparing graduates to pursue employment in many facets of the business sector. Graduates from this area will be able not only to



analyze office activities, but also to plan, implement, and manage the new office systems (Hunt, 1988, p. 14).

Office Systems Research Association (OSRA): A professional organization that promotes office systems as a discipline with a common body of knowledge in the analysis, design, and administration of interrelated administrative support systems. Other purposes of the association include the encouragement of basic and applied research on office systems problems as well as the distribution of findings from research and experiences relating to practices and instruction in the discipline (Hunt, 1988, p. 14).

### Organization of the Study

The organization of this study is described and summarized in five chapters.

1. Chapter I relates the purpose and the need for the study, statement of the problem, hypotheses tested, purpose of the study, delimitations, limitations, assumptions, and definitions of terms.
2. Chapter II identifies pertinent literature relative to research in the field of competencies and curriculum in office systems.
3. Chapter III outlines the research procedures used in this study.
4. Chapter IV includes the data analysis and interpretations of the findings.
5. Chapter V provides summary, conclusions, and recommendations.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

A review of related research was conducted in order to (1) determine the degree of existing research in this topic area, (2) set a foundation for this research effort, and (3) place this research in perspective--in light of existing research.

Database searches were completed utilizing Educational Resources Informational Clearinghouse; Index to Doctoral Dissertations in Business Education; Business Periodical Index; unpublished dissertations; model curriculums by the Office Systems Research Association (OSRA), and the Data Processing Management Association (DPMA); college catalogs; and numerous professional journals and magazines which determined that no other identical study exists.

The literature review contains these categories: need for postsecondary curriculum development in office systems; history of the OSRA model office systems curriculum; and research studies related to present study.

## Need for Postsecondary Curriculum Development in Office Systems

Office systems relate to the coordination and management of an organization's information. According to Thomas and O'Connor (1986):

. . . office systems education prepares graduates of four-year college programs for entry-level positions involving the analysis, design and implementation of office systems. Generally the office systems function includes responsibility for planning, selecting, designing, implementing, training for and evaluating automated and non-automated office systems. (p. 20)

Bronner (1989) states that "office systems is one of the most rapidly expanding fields in business education today" (p. 16).

Nanassy, Malsbary, and Tonne (1981) describe business education as "education about business and education for business" (p. 9). This definition supports the idea that business educators need to research businesses' needs.

Many authors have written about the need for "education for business." Timm (1988) believes that "the gap must be narrowed between what is taught in office education programs and what is actually needed on the job" (p. 69). Dickman (1989) states that "businesses should be surveyed regularly to assure that their requirements for entry-level skills are being met by secondary and postsecondary educational institutions" (p. 35).

Several authors agree that the employment needs of specific geographic locations should be met. Wentling (1987) suggests that "business educators work closely with employers to identify competencies that they feel are important in specific geographical areas" (p. 316). Chaney and Leggett (1987) agree with this statement by saying that "in order to prepare students adequately for office jobs in

the business community, business teachers should study the extent to which area companies are utilizing office technology" (p. 12).

Whyte (1988) believes that "a new approach to business education is mandatory . . . this approach should stress information-age skills---thinking, learning, and creating" (p. 18). A "new approach" evolved in 1984 with the development of the Office Systems Research Association.

### History of the OSRA Model Office Systems Curriculum

The development of the Office Systems Research Association (OSRA) model curriculum began in the late spring of 1984 when a committee of office systems practitioners and educators was formed (O'Connor & Thomas, 1986). The 16-person committee began by reviewing the literature in the field in an attempt to identify research on curriculum content and the curriculum development process. Over 500 dissertations, articles, conference papers, and research reports were screened in the process.

Based on their knowledge of the office systems area and the review of the literature, the committee members developed an initial list of specific skills and knowledges that would be required of someone beginning a career in office systems analysis.

The committee then developed courses around the competencies, with the knowledge that any school adopting the model curriculum could make modifications to fit its own situation.

During the course development phase, which lasted from the summer of 1984 through the summer of 1985, teams composed of an educator and a business person worked on the individual courses. For each course, the teams produced a course description, a statement of student outcomes, a general statement about how the course could be taught, a point-by-point outline of course content, a statement about resources needed to teach the course, and a recommended reading list.

The teams were aided in the process by colleagues at their respective schools and business places, and ultimately, by the entire Model Curriculum Development Group (MCDG). Each team shared its drafts of the courses with other members of the MCDG.

The next phase began in the fall of 1985. To verify the model's usefulness, a series of seven focus group meetings were held in the U.S. and Canada. Members of the MCDG coordinated the meetings with the help of OSRA members in each location. Focus group meetings were held in St. Louis, Indianapolis, Los Angeles, Houston, Atlanta, New York City, and Toronto. The focus group leaders invited representatives from business and academia to review and critique the latest draft of the model curriculum, including course outlines. By the end of the focus group phase, the overall design and the individual courses of the proposed model curriculum had been examined by over 300 people representing business and academia. The results of the focus group meetings were incorporated into the model, and a final version was developed.

An independent research firm was then hired to determine whether graduates with the background provided by the model curriculum would be employable. Approximately 100 interviews with office systems Practitioners across the United States and Canada were conducted by telephone early in 1986. The results indicated that the office systems Practitioners would consider the graduates of such a program to be well qualified for positions in the office systems area. The respondents also predicted a substantial increase in the number of available office systems positions in the next five years. Two to 30 new positions were anticipated by the respondents.

The OSRA model curriculum is presented within a framework of ten, three-semester-credit-hour courses. The framework is flexible; course content may be included in programs in other forms--content may be split between courses or within courses with other titles--and remain consistent with the intent of this curriculum model. In addition, schools adopting the curriculum have the flexibility to develop their own sequencing and prerequisites according to individual needs. In other words, the model may be adapted to fit the needs and requirements of any specific institution.

The following are the courses and a detailed course description (O'Connor & Thomas, 1986):

**Core Courses:**

- OS-1 Office Systems and Technologies
- OS-2 Office Systems Planning
- OS-3 Office Systems Implementation
- OS-4 Office Systems Applications
- OS-5 Integrated Office Systems

**Elective Courses:**

- OS-6 Telecommunications
- OS-7 Administrative Communication
- OS-8 Training and Development in Office Systems
- OS-9 Special Topics in Office Systems
- OS-10 Professional Practice in Office Systems

**Core Course Descriptions:**

**OS-1 Office Systems and Technologies** is an overview of office systems - technology, people, and procedures - within organizational and environmental contexts. Improvement of productivity through appropriate application of office tools and techniques (manual or electronic) is stressed. Major hardware and software that support information creation, storage, retrieval, manipulation, and distribution are covered.

**OS-2 Office Systems Planning** emphasizes planning for office systems development, with particular emphasis upon employee and work group interactions. Application of proven methodologies through case or field-based projects. Office systems productivity assessment. Special attention to intergroup needs as related to end-user, departmental, divisional, organizational goals. Prerequisite: Office Systems and Technologies (OS-1).

**OS-3 Office Systems Implementation** is the study of development and implementation processes, tactics, and strategies based upon office systems planning results. Application of tested methodologies through case or field-based projects. Particular attention is devoted to development of end-user office support systems. Prerequisite: Office Systems and Technologies (OS-1).

**OS-4 Office Systems Applications** stresses the applications of office automation technologies from the user perspective to enhance productivity of office employees - executive/managerial, professional, and support personnel. Relationship of automated technologies and corporate goals. Comparison and evaluation techniques for appropriate selection of hardware and software. An introduction to telecommunications. Prerequisite: Office Systems and Technologies (OS-1).

**OS-5 Integrated Office Systems** is the capstone course of the Office Systems curriculum. Synthesis and application of concepts related to current office systems topics. Prerequisites: Office

Systems Planning (OS-2), Office Systems Implementation (OS-3), and Office Systems Applications (OS-4).

**Elective Course Descriptions:**

**OS-6 Telecommunications** is an introduction to telecommunications in office systems. Topics include telephony, data codes, protocols, network architectures, local area networks, communications media, hardware, and software. Management issues and practical applications are an integral part of this course. Emphasis will be on the application of telecommunications to facilitate information interchange in whatever form the information takes: voice, data, text, or image. Prerequisite: Office Systems Applications (OS-4)

**OS-7 Administrative Communication** includes the applications of communication theory, human relations concepts, research methods, and information technology to the internal communication of practitioners who work in environments with automated information and communication systems. Survey of organizational communication climate; analysis of communication tasks and audiences; problem/decision definition and analysis; primary and secondary research methodology; oral and written reporting; applications; oral and written reports, system-related documents (reports, proposals, procedures), systems documentation for users; human factors of communication in a technological environment.

**OS-8 Training and Development in Office Systems** emphasizes the application of theories of learning and instructional development to the education and training of employees in office systems. Topics include instructional design; strategy; technology; and the implementation, evaluation, and management of training in an organizational environment.

**OS-9 Special Topics in Office Systems** is the study of advanced concepts and issues relative to office systems. Content will vary according to the needs and interests of the students, keeping in mind current technological advancements and office systems management concerns.

**OS-10 Professional Practice in Office Systems** is an internship or cooperative work experience supervised by a faculty member. Provides an opportunity for students to gain practical work experience while working in a private business or government agency.



Furthermore, the model curriculum should provide the essential foundation for a career in information management.

### Research Studies Related to Present Study

The purpose of this portion of the review of literature is two-fold: (1) to provide an update of curriculum development research relevant to office systems education; and (2) to present other research that is related by similar statistical techniques, content, methodology, or population.

The following studies reveal how researchers have approached the curriculum development process.

#### The Graves Study, 1983

The problem of the Graves study was to determine what changes are needed in collegiate business curricula as a result of office automation. Major purposes were the following: (1) to identify concepts needed by managerial personnel in automated offices; (2) to determine and compare the importance of concepts as perceived by office systems consultants, office administration faculty and other collegiate business faculty; and (3) to identify concepts taught in collegiate business schools and required of collegiate business students.

Forty-two concepts related to the effect of office automation on managerial personnel were identified. The questionnaire was pilot tested twice.

Usable responses were received from 33 office systems consultants, 47 office administration faculty, and 173 other collegiate business faculty. Using a 5-

point scale, participants indicated the importance of those concepts. Faculty respondents also indicated whether concepts were taught in their departments or required of their students. The concepts were divided into six major categories; the highest mean rating given by consultants in each category is reported here:

- I. Origination - the use of dictating machines for composing business documents ( $X = 3.1818$ ).
- II. Production - the use of visual display text editors for transcribing business documents ( $X = 4.0968$ ).
- III. Reproduction - the use of computer graphics for geographically representing business activity and trends ( $X = 3.9697$ ).
- IV. Filing and Records Management - the use of magnetic media storage for storing and retrieving business documents ( $X = 4.0909$ ).
- V. Communications and Distribution - the use of local area networks for sending and receiving business documents ( $X = 4.1333$ ).
- VI. Integrated Office Systems - the use of integrated office systems for text editing, filing, photocomposition, telecommunications, information gathering, decision making, and professional writing ( $X = 4.0645$ ).

Chi square was used to compare early and late responses. Bartlett-Box F was used to test for homogeneity of variances. One-way analysis of variance was used to test for significant differences in mean importance ratings; Scheffe was used for post-hoc comparisons. Independent t tests were computed to test differences in importance ratings between faculty who reported inclusion and non-inclusion of concepts in their courses or programs. Pearson r was computed to determine degree of consistency among the respondent groups.

### The Golen and Titkemeyer Study, 1984

The study examined the types of office activities performed by graduates of the office systems and administration program from the College of Business Administration at Arizona State University during the years from 1970 to 1982. To gather data for the study, researchers sent questionnaires to 216 graduates. Based on data from the 118 questionnaires that were returned, the results appeared that the six most relevant courses to the graduates' jobs were in English, typewriting, secretarial procedures, records management, office management, and business communications. Data collected on the relative percentages of time spent on planning, organizing, directing and supervising, and controlling activities indicate that most of the respondents--whether they were office managers or secretaries--seemed to assume more and more management responsibility as they progressed in their jobs. The results revealed that the training received by the respondents while in school provided them with the necessary background to function effectively in the managerial role. Based on the large amount of time that respondents spent in planning, organizing, directing, and controlling activities, the researchers recommended that curriculum developers place more emphasis on course work geared toward the development and refinement of managerial talents.

### The O'Connor and Penwell Study, 1986

The purpose of the study was to (1) obtain business and industry reactions to and evaluations of the OSRA Model Curriculum, (2) establish current office

systems positions, and (3) attempt to project future hiring patterns for office systems positions.

Ninety-eight telephone interviews were completed with persons who were responsible for the office automation effort in their organizations. The interview sample, national in scope, came from a random sample of a mailing list provided by Administrative Management magazine and a list of office automation professionals available from the Office Systems Research Association's Executive Director.

Findings from the survey are divided into four sections: (1) Description of Office Technology Used; (2) Evaluation of the OSRA Curriculum; (3) Current Office Systems Positions; and (4) Office Systems Projected Hiring.

1. Description of Office Technology Used: The most commonly encountered elements of office automation technology were personal computers and shared logic word processors. Standalone word processors followed. The next tier comprised integrated decision support systems, local area networks, and electronic mail. Voice messaging had the least use.

2. Evaluation of the OSRA Curriculum: Large corporations were emphatic in noting the curriculum's human factor component as its major strength.

The OSRA curriculum was thought to best qualify graduates for the position of office systems manager, analyst, and training manager. The curriculum fared the worst in preparing electronic mail and local area network managers.

A graduate of the curriculum applying for the position of Office Systems Analyst would have a substantial advantage over anyone with a traditional background.

3. Current Office Systems Positions: The researchers assessed existing office systems positions and their findings included:

(a) The office systems manager was the position most commonly found within the reporting organization.

(b) Over one-third of the respondents reported the following existing office systems positions: Word Processing Manager, Word Processing Systems Administrator, and Office Systems Analyst. The next tier consisted of Office Systems Training Manager and Word Processing Systems Analyst, with over 20 percent of the respondents reporting these positions. The lowest occurrences of existing office systems positions were in the area of local area network managers and electronic mail managers (only 10 percent said that these positions were active).

(c) The dominant recruiting source for all of the positions was internal.

(d) The need for a college degree was least in the three word-processing-related positions, higher in the office systems positions, and the highest for electronic mail and local area network managers.

(e) The supply of personnel qualified for any one of the eight positions was generally perceived to be well below the current demand. Electronic mail and local area network managers were considered in shortest supply.

(f) The special skills and competencies needed for the eight positions varied somewhat, but one was common to all: knowledge of computer hardware and software.

4. Office Systems Projected Hiring: To learn what the job market for graduates of the curriculum would be, respondents were asked to give their best approximations of how many entry-level positions would be filled by their organizations in the next year and within the next five years. Over half reported that at least one office systems analyst position would be filled within their immediate organization during the next year. Larger organizations were more likely than smaller ones to encounter a need for office systems analysts.

Implications: The office systems professionals whose ratings/reactions are presented here have given the curriculum high marks. These professionals are predicting a strong need for individuals with skills/knowledges inherent in the curriculum. The curriculum appears to be "on target."

At the present time, business and industry are not looking to the college campus to fill office systems positions; however, this situation could change if business and industry knew that office systems degree programs existed. This situation highlights the need for faculty in office systems programs to inform employers of the skills of their graduates. Findings from this survey suggest that (1) a program of study based on the model curriculum would be an appropriate first step for the potential office systems professional; and (2) an increasing job market for such professionals appears to exist.

The Millman and Hartwick Study, 1987

A survey of seventy-five Montreal middle managers was conducted, investigating their perceptions of the impact of automated office systems on their jobs and work. Two key findings emerged in the results. First, middle managers perceived that office automation had led to a variety of changes that, almost without exception, made their jobs and work more enriching and satisfying. Second, middle managers with first-hand experience with various automated systems, either through the presence of such systems in their organization or through their own personal use of such systems, were even more positive toward the changes in office automation than managers without this exposure. The importance of these findings is discussed in the context of related work drawn from the fields of psychology and organizational behavior.

The Grever and Zimmerman Study, 1988

The study used survey research procedures to determine how departments of education, NABTE institutions, and secondary schools were preparing business teachers and students to use electronic office equipment and technology. Study data included (1) the number of schools using electronic equipment and technology, (2) the types being used, (3) the range of courses in which they are being used, and (4) the extent to which secondary schools, colleges/universities, and state departments of education help teachers acquire literacy/skills in office technology.

Findings of the survey revealed that (1) electronic office equipment and technology are not yet extensively used in business courses, in secondary schools, and in colleges/universities; (2) microcomputers and electronic typewriters are the most often used equipment and are most often used in word/information processing courses; and (3) state departments of education, NABTE institutions, and secondary schools use a variety of ways to aid teachers in upgrading skills and integrating new electronic office technology into the curriculum.

### The Stitt Study, 1988

Stitt gathered data on equipment, information system/office automation configurations, and educational requirements of leading California companies. Of the 166 questionnaires sent, 52 usable questionnaires were returned, achieving a response rate of 31 percent.

When asked to indicate by category--electronic typewriter, standalone word processor, and microcomputer--what kind of equipment was used and by brand name, no clear consensus appeared with regard to either category of equipment or brand name. Electric typewriters are still being used as are electronic typewriters. The standalone equipment showing the heaviest use was the Wang OIS and VS 100 and 300. A range of microcomputers is being used from all models of IBMs and Apples to the Compaq and IBM clones.

Respondents were also asked to indicate the configuration of their information systems area. More participants indicated a decentralized approach than centralized, clustered, or a combination.



Sixty percent of the respondents stated that their equipment was networked in some way. The majority of uses were for local area networking, world-wide dial up, and for connecting word processors or personal computers to a laser printer and/or phototypesetter.

The vast majority of respondents, 71 percent, also indicated a use of telecommunications as a component in information processing. The primary use was for electronic mail and data retrieval.

When asked "Who is responsible for automated office equipment recommendations?", 80 percent indicated that the Management Information Systems (MIS) Department controlled that area. Seventy-eight percent of the respondents also indicated that MIS people are responsible for the budgeting process with regard to information systems.

The preferred degree for the manager of an information processing area was a BS degree in Management Information Systems, coupled with work experience.

Thirty-five percent stated that the main source of operator training was conducted at an in-house training center.

#### The Rickman and Behymer Study, 1988

The purpose of the study was to identify emerging competencies needed by information processing employees for the automated office environment in the year 2000. Mastering these competencies will enable business employees to succeed in current and future office environments as technological advancements

occur. The study was conducted to obtain the opinions of specialists in information processing in order to suggest needed curriculum changes for preparing future information processing office workers.

The Delphi method was used and the panel consisted of 28 members who represented education, business practitioners, automation specialists in research and development, and automation futurists. The results of the round-three questionnaire attempted to designate the specific competencies that would be emerging by the year 2000.

The following conclusions are based on the analysis of the data collected in this study:

1. The panel of specialists found it difficult to perceive the competencies that will emerge as needed by the information processing employee in the automated office in the year 2000.

2. Although identifying competencies that will emerge in the year 2000 is difficult, the panelists agreed that some competencies had higher importance. The four high priority/high consensus competencies with inconclusive-emerging status were (1) be aware of the interrelatedness of all areas using advanced technologies (e.g., electronic mail systems, teleconferencing, interactive videos); (2) input data, execute programs, and maintain decision support system; (3) use various input devices (e.g., keyboard, mouse, digitizer, voice) fluently; and (4) use advanced keyboard formatting and creative art design with a sense of the graphic elements to prepare reports, messages, and publications.

3. The panel of specialists concluded that competencies involving technological concepts have different levels of importance. Though the inconclusive-emerging competencies with high importance were technological concepts, numerous technology-related competencies were identified as having low importance.

The Hunt Study, 1988

The major purpose of this research study was to assess the level of importance of the OSRA Model Office Systems Curriculum content, based upon the NABTE faculty perceptions. Secondary purposes were to (1) determine the potential for implementation of an office systems curriculum at respective institutions, (2) ascertain teacher receptiveness toward retooling in office systems education, and (3) determine current OSRA course offerings at NABTE schools.

For content validation, a questionnaire--developed by the researcher--was submitted to a panel of prominent office systems professionals. Upon refinement, the questionnaire was administered to a stratified sample of the NABTE population for collection of data. A usable response rate of 79 percent was received.

Data analysis revealed that no differences exist among NABTE faculty--based upon location of business education program--regarding the level of importance of the OSRA Model Curriculum content. The faculty perceived the courses of 'considerable importance'. However, significant differences do exist among NABTE faculty--based upon location of business education program--

regarding the potential for implementation of the OSRA Model Office Systems Curriculum. The potential for implementation of an office systems curriculum is substantially greater in programs which are affiliated with schools/colleges of businesses than in schools/colleges of education.

Business educators are receptive toward retooling to teach courses which comprise the OSRA Model Office Systems Curriculum. The faculty prefer some form of Office Systems Institute training over other alternatives.

Of the 10 courses in the OSRA curriculum, the most prevalent in NABTE colleges and universities are OS1-Office Systems and Technologies, OS4-Office Systems Applications, and OS-7 Administrative Communication.

#### The Oswalt and Arn Study, 1988

The purpose of this study was to identify microcomputer and office automation competencies necessary for entry-level employment in lower- to middle-management positions in business and industry.

The population of the study was U.S. companies listed in the 1987 Fortune 500 list of the largest industrial companies and the 1987 Fortune 500 service list of the top non-industrial companies. A random sample of 100 companies was selected.

The research instrument used in this study was a questionnaire, which was divided into two parts: Competency Ranking and General Information. The Competency Ranking section contained 59 microcomputer and office automation competencies that were derived from a review of 15 office automation,

microcomputer applications, and computer literacy textbooks. This section used a Likert-type scale to allow participants to rank each competency from 1 to 4 with one being "Not Important" and four being "Essential."

The participants were asked to rank each competency by the competency requirements for individuals applying for entry-level employment in lower- to middle-management positions based on the participant's requirements currently used in their company. The interval criteria that the participants used to evaluate each competency were: Essential, Important, and Useful.

Fifty-one questionnaires (51%) were returned. Forty-seven questionnaires (47%) were usable.

The findings revealed that, although the 59 competencies evaluated were obtained from a review of office automation, microcomputer application, and computer literacy textbooks, no competencies ranked in the "important" to "essential" range by the largest industrial and top non-industrial companies.

### Summary

The review of related literature presented in this chapter reveals a continually changing workplace and the need for business education to research these changes in order to provide an up-to-date office systems curriculum. The research found that office systems educators have researched and must continue to research "education for business" as education relates to the field of office systems.

Chapter III presents the research design and procedures under which the study was conducted.

## CHAPTER III

### RESEARCH DESIGN AND PROCEDURES

#### Description of Research Procedures

The following steps were used to research the problem, plan the study, conduct the study, and present the results:

1. Review of related research and literature  
(Chapter II)
2. Description of sample/population
3. Development of survey instrument
4. Collection of data
5. Statistical analysis of variables
6. Analysis and interpretation of data  
(Chapter IV)
7. Hypotheses tested
8. Presentation of conclusions and recommendations (Chapter V)

#### Description of Sample/Population

The population included office systems practitioners from Topeka, Wichita, and Kansas City businesses listed in the Kansas Directory of Commerce. The

sample number to be selected from the population was determined by consulting a table on selecting sample sizes (Wunsch, 1986, p. 32). A random sample of businesses was selected from the 1065 Topeka, Wichita, and Kansas City businesses listed in the Kansas Directory of Commerce. A computer-generated table of random numbers was utilized in the selection of 286 businesses which constitute the random sample for this study.

### Development of Survey Instrument

The test instrument employed in this study was a mail-questionnaire. The questionnaire was designed by the researcher to gather data for this study after thoroughly reviewing literature relating to questionnaire design and consulting with various faculty members from Oklahoma State University.

Decisions made concerning the questionnaire's content were based on a review of literature, a survey of college textbooks, the model curriculum of the Office Systems Research Association, and suggestions from information processing faculty from Oklahoma State University and Emporia State University.

Before designing the questionnaire, a thorough review of research studies specifically dealing with the OSRA Model Curriculum was conducted for determining the competencies needed for office systems graduates. The literature search revealed a 1988 study conducted by Clifford Steven Hunt. Hunt validated the office systems competencies of the OSRA Model Curriculum by submitting the competencies for content validation to a panel of prominent office systems professionals. Upon refinement, forty-eight competencies were assessed through



a questionnaire to a stratified sample of the National Association for Business Teacher Education (NABTE) population to receive its perceptions.

Using the results of Hunt's 1988 study, the researcher constructed a forty-five item questionnaire articulating office systems course competencies. (Appendix A).

Section I contained the demographic information about the company and background information about the respondent. Section II contained the office systems management competencies revised from the pilot test results. The respondents were instructed to circle on a 5-point Likert scale the office systems management competencies needed by office systems graduates for entry-level office systems employment in lower- to middle-management positions. A section was provided for the respondents to add competencies not listed on the questionnaire. In order to further control confidentiality and anonymity of research data and to give the respondents a chance to request a summary of the research, participants were given a pre-addressed, stamped postcard.

### Pilot Test

Before the initial mailing, the questionnaire was pilot tested with selected information processing educators and students at Emporia State University before the initial mailing. The reliability of the questionnaire was determined by checking the internal consistency of the items. By using SPSS and calculating the Cronbach Alpha reliability coefficient, the Spearman-Brown, and the split plot test on each of the pilot study respondent's responses, the researcher established

content validity. The results of these two tests reveal that the higher the reliability coefficient the stronger the reliability of the questions on the questionnaire. The Cronbach Alpha reliability coefficient was .9284, the Spearman-Brown result was .8822, and the split plot result was .8755 for part 1 and .8731 for part 2. Since the testing of the questionnaire's content validity was very positive, only item number four of the office systems management competencies portion of the survey was reworded for clarity as a result of the pilot study.

Respondents were asked to comment on the following questions concerning the questionnaire: (1) How easy was the form to follow and fill out? (2) Were there any ambiguous terms, concepts, and/or questions? (3) What length of time is needed to complete the form? (4) What other areas would you like to see covered? and (5) What areas of the questionnaire are irrelevant and/or redundant?

### Collection of Data

#### Initial Mailing

In order to increase the number of returns, a cover letter and a follow-up letter were prepared to be sent with the questionnaires. Each letter stressed the following: (1) the benefits the participant could expect as a result of this study, (2) an explanation of the study and what the researcher hoped to accomplish, (3) the support of Oklahoma State University for this research study, (4) an assurance to the respondent of confidentiality and anonymity, (5) an offer to send the

respondent an abstract of the report's findings, and (6) a stated return date for the completed questionnaire.

Each of the businesses in the sample received a cover letter addressed to the personnel manager with instructions to give the questionnaire to the person with the most expertise in office systems. The questionnaire, a postage-paid return envelope and a postage-paid postcard to request results of the study were included in the initial mailing. The cover letters were reproduced on Oklahoma State University stationery and co-signed by Dr. Richard Aukerman, thesis advisor. (Appendix B)

#### Follow-up Mailing

To take steps to insure a higher return rate, four weeks after the initial mailing follow-up letters were sent to participants who had not replied to the original mailing (Appendix C). With each follow-up letter, a questionnaire and an addressed, stamped return envelope were enclosed, along with a reminder of the deadline for the return of the questionnaire.

From the 286 questionnaires mailed, 76 questionnaires were returned after the initial mailing and 14 questionnaires were returned after the follow-up mailing. Since the response rate to the first follow-up mailing was low, a second follow-up mailing was not pursued. Ninety questionnaires were ultimately answered, and 5 questionnaires were returned by the post office because the business had moved and left no forwarding address. Of the 90 returns, 74, or 26 percent, were usable because both parts of the questionnaire were completed.

Sixteen were not usable, because the respondent didn't feel qualified or because the company or office was too small to answer all or some of Part II of the questionnaire.

### Statistical Analysis of Variables

The data collected from the survey instrument were comprised of two types: categorical variables and approximate continuous variables. Before attempting to use parametric procedures, the researcher designed the study to collect and analyze data which met the requirements of interval level measurements as well as the stated assumptions.

Upon collection of the data, responses were coded and keyboarded for analysis using SPSS statistical software. The program was used to reveal frequencies and percentages of responses for each item on the questionnaire, as well as the inferential data.

Specifically, the One-Way Analysis of Variance (ANOVA) technique was used (alpha level at .05) to test for significant differences in the aggregate perception scores of businesses with regard to the overall level of importance of office systems management competencies. This analysis was selected "since the One-Way ANOVA does not require equal numbers in each treatment" (Linton & Gallo, 1975, p. 139).

F-ratios were determined for each factor separately and for the interaction term by ANOVA. An F-ratio is the ratio of treatment effect to error and is used to indicate if a significant difference exists in the database. Because F-ratios will

only indicate whether or not a significant difference exists in the database, the Scheffe post hoc procedure was used to determine which pair(s) of means differed significantly. This multiple comparison procedure was chosen because of the procedure's ability to control the Type I error rate when performing all possible comparisons.

### Hypotheses Tested

As previously stated in Chapter I, the hypotheses, which were tested in the null form, were:

- H<sub>1</sub> There is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size **businesses** in Eastern Kansas.
- H<sub>2</sub> There is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size **offices** in Eastern Kansas.

## Summary

Chapter III included the steps utilized in researching the problems, planning the study, conducting the study, and presenting the results of this study.

Statistical analysis and interpretation of the data are reported in Chapter IV of this dissertation.

On the basis of the findings reported in Chapter IV, conclusions and recommendations are given in Chapter V.

## CHAPTER IV

### ANALYSIS OF DATA

#### Introduction

Office systems practitioners representing 74 businesses provided their perceptions regarding course competencies needed for entry-level employment in lower- to middle-management positions in office systems. Data about the following were gathered: (1) size of business and office, type of business, and background of the office systems practitioners, and (2) office systems management course competencies.

#### Plan for Analysis of the Data

Part I of the study instrument was designed to obtain responses from office systems practitioners regarding the size and type of their employer's business and to obtain background information concerning the office systems practitioner. The demographic section included (1) type of company, (2) total number of employees (3) total number of office employees, (4) number of years of service with their current employer, and (5) highest educational degree. The items in this section were developed through a review of research questionnaires concerned with office systems, a review of textbooks concerning mail questionnaires, a pilot study

administered to students and faculty in office systems management at Emporia State University, and consultations with Oklahoma State University faculty.

Part II of the study instrument was planned to obtain responses concerning the importance perceived by office systems practitioners regarding office systems management course competencies needed for entry-level employment in lower- to middle-management positions in office systems. Items for this section were modified from the Office Systems Research Association's Model Curriculum and research studies dealing with the model curriculum. The competencies were revised and validated after the pilot study.

A Statistical Package for the Social Sciences (SPSS) program was utilized to tabulate the study instrument responses. The results from each demographic item were tabulated using frequency of occurrence, percentage, and cumulative percentage.

One-Way Analysis of Variance and Scheffe test for significance were used to differentiate among course competencies as perceived by office systems practitioners from small-, medium-, and large-size businesses. (See Part II of the questionnaire, Appendix A.)

### Analysis of Gathered Data

The population researched included office systems practitioners from Topeka, Wichita, and Kansas City businesses listed in the Kansas Directory of Commerce. A random sample of 286 businesses was selected from the list of 1065 businesses. From the 286 questionnaires mailed, a total of 90 were returned.



Of those 90, five were returned by the post office, because the businesses had moved and left no forwarding address. Sixteen questionnaires were unusable because the respondents reported that either he/she was not knowledgeable about Section II or that the business or office was too small. Of the 90 returns, 74 questionnaires were usable for a response rate of 26 percent.

Table 1 is an analysis of the percentages of respondents who work for a given type of company. Fifty-one of the 74 respondents (69 percent) are employed by manufacturing firms. Other places of employment were service (18 percent), wholesale (4 percent), education (4 percent), and medicine (1 percent).

TABLE 1  
PERCENTAGE OF RESPONDENTS EMPLOYED  
BY COMPANY TYPE  
(n = 74)

Company Type	Frequency	Percent	Cumulative Percent
Manufacturing <i>Process</i>	51	69	69
Service	13	18	87
Wholesale	3	4	91
Education	3	4	95
Medicine	1	1	96
Other	<u>3</u>	<u>4</u>	100
TOTAL	74	100	

Respondents were asked to identify the total number of employees in their business (Table 2). The majority of the respondents (52.7 percent) work for a

company with 1-50 employees. About 38 percent indicated their companies employed 51-250 employees, and 9.5 percent of the respondents worked for a company which employs more than 250 employees.

TABLE 2  
 PERCENTAGE OF TOTAL EMPLOYEES  
 BY BUSINESS SIZE  
 (n = 74)

Number of Employees	Frequency	Percent	Cumulative Percent
1-50	39	52.7	52.7
51-250	28	37.8	90.5
Over 250	<u>7</u>	<u>9.5</u>	<u>100.0</u>
TOTAL	74	100.0	

The total number of office employees within the company for which they work is listed in Table 3. The majority of respondents (52.7 percent) worked for a company with an office consisting of one to seven office employees.

The respondents were asked to identify the number of years of service with their current employer as shown in Table 4. Approximately 69 percent indicated they had between 1 and 10 years experience with their employer, 24.3 percent cited from 11-20 years of experience, and 6.8 percent of the respondents indicated 20 or more years experience with their current employer.

TABLE 3  
 PERCENTAGE OF OFFICE EMPLOYEES  
 BY OFFICE SIZE  
 (n = 74)

Number of Employees	Frequency	Percent	Cumulative Percent
1-7	39	52.7	52.7
8-35	26	35.1	87.8
Over 35	7	9.5	97.3
No response	<u>2</u>	<u>2.7</u>	100.0
TOTAL	74	100.0	

TABLE 4  
 RESPONDENTS NUMBER OF YEARS SERVICE  
 WITH CURRENT EMPLOYER  
 (N = 74)

Work Experience (in years)	Frequency	Percent	Cumulative Percent
1-10	51	68.9	68.9
11-20	18	24.3	93.2
Over 20	<u>5</u>	<u>6.8</u>	100.0
TOTAL	74	100.0	

A summary of the highest educational degree held by the respondents is presented in Table 5. Nearly 46 percent of the office systems practitioners who

responded to this question possess a bachelor's degree, 23 percent attended a vocational or business school or a junior college, and 18.9 percent of the respondents indicated a high school diploma as their highest educational degree held. The majority hold a four-year college/university degree, but nine (12 percent) hold post college/university degrees.

TABLE 5  
HIGHEST DEGREE HELD  
BY RESPONDENTS  
(n = 74)

Degree	Frequency	Cumulative	
		Percent	Percent
High school graduate	14	18.9	18.9
Vocational technical school	6	8.1	27.0
Business college	4	5.4	32.4
Junior college	7	9.5	41.9
4-year college/ university graduate	34	45.9	87.8
Post college/university	<u>9</u>	<u>12.2</u>	100.0
TOTAL	74	100.0	

#### Statistical Analysis of Null Hypotheses

The results of the statistical analyses used to test this study's hypotheses are presented in this section. This study posed two null hypotheses for analysis to determine if significant relationships exist among office systems course

competencies essential for entry-level lower- to middle-management positions in office systems as perceived by office systems practitioners by (1) business size and (2) office size. One-Way Analysis of Variance (ANOVA) was used to evaluate hypotheses pertaining to the assessment of the office systems course competencies as grouped into the nine OSRA Model Office Systems Courses.

The OSRA Model Curriculum is composed of nine courses that were used in this study, with their respective competencies as follows (O'Connor & Thomas, 1986):

#### OS1-Office Systems Technologies

- \* Recognize the importance of the human factor in the office and information systems environment.
- \* Develop a conceptual view of how office systems relates to an organization-wide information support system.
- \* Show the interrelatedness in an office system of people, technology, and procedures.
- \* Recognize the movement toward information centers and departmental systems as approaches to office and information systems management.
- \* Understand the evolving role of the office as a support system for the total organization.
- \* Gain a historical perspective of office systems development.
- \* Understand the reasons for ongoing changes in the office.
- \* Identify systems and approaches for text/document creation (i.e., dictation equipment, word processing, voice recognition).
- \* Identify the components of information storage/retrieval systems (i.e., database, optical disks, manual systems).

### OS1-Office Systems Technologies (continued)

- \* Identify the relative merits of information distribution systems (i.e., printing, voice mail, electronic mail, teleconferencing).
- \* Understand legal/ethical issues related to managing office systems.

### OS2-Office Systems Planning

- \* Determine office systems requirements based upon individual, department, division, and organization needs.
- \* Understand the complexities (both technical and human factors) involved in planning end-user support systems.
- \* Recognize ways to minimize resistance to planning for automation.
- \* Recognize the importance of identifying information-system and business-function interrelationships within the departments, divisions, and other units of the organization.
- \* Assess the effectiveness of alternative office system organizational structures.
- \* Conduct feasibility studies.
- \* Use tools for planning office systems (i.e., Gantt Charts, PERT, data flow diagrams).

### OS3-Office Systems Implementation Strategies

- \* Assess potential problems and issues associated with implementation of office systems.
- \* Develop appreciation for satisfying end-user needs in office support systems.
- \* Apply the results from office systems planning to implementation strategies.

### OS3-Office Systems Implementation Strategies (continued)

- \* Develop skills needed to analyze, design, and implement an integrated office system.
- \* Assist with the development of end-user office support systems.
- \* Develop instruments/guidelines for evaluating office support systems.
- \* Develop data collection procedures for use in office systems analysis.
- \* Understand uses of project management software packages for development of office systems.
- \* Understand how to prepare requests for proposals (RFP's) related to office systems.

### OS4-Office Systems Applications

- \* Develop skills for using office systems software programs (i.e., word processing, database, spreadsheets, graphics).
- \* Receive practical experience in using office systems technologies.
- \* Evaluate both hardware and software applicable to the office domain.
- \* Recognize the importance of defining productivity measures that can be achieved with properly selected systems.
- \* Define the role played by microcomputers in the office information systems environment.
- \* Identify the features of alternative processing systems (i.e., micro-, mini-, mainframes).

### OS5-Integrated Office Systems

- \* Emphasize office systems management as it relates to the functional areas of business (i.e., finance, marketing, production).
- \* Problem solve in all areas of office systems planning and development.
- \* Evaluate office systems concepts through the use of case studies involving real business situations.

### OS6-Telecommunications

- \* Acquire an understanding of how data and telecommunications can be integrators of office systems technologies.
- \* Evaluate telecommunications services (i.e., dedicated leased lines, data sources, teleconferencing).

### OS7-Administrative Communication

- \* Develop and communicate oral presentations needed to defend decisions and recommendations.
- \* Gather, interpret, and organize information (i.e., informational or analytical reports).
- \* Write user documentation and administrative procedures (manuals).

### OS8-Training and Development in Office Systems

- \* Understand training approached to use in office systems implementation.
- \* Select training strategies and media.
- \* Write training objectives for office systems personnel.



### OS10-Professional Practice in Office Systems

- \* Experience in an office systems internship/cooperative study for the purpose of applying classroom concepts to a real-life setting.

The respondents were asked to describe their perceptions about relevant course competencies that are necessary for successful entry-level employment by office systems graduates in lower- to middle-management positions in office systems. The office systems practitioners surveyed responded by answering a 5-point Likert-type scale (5 = of extreme importance; 4 = of considerable importance; 3 = of some importance; 2 = of little importance; and 1 = of no importance). See Appendix A for the questionnaire.

The OSRA Model courses were analyzed four ways: (1) comparison of respondents ratings by business size, (2) comparison of respondents ratings by office size, (3) One-Way Analysis of Variance of differences among business size, and (4) One-Way Analysis of Variance of differences among office size.

### Testing of Hypotheses

#### Testing of Hypothesis Number 1

Hypothesis Number 1 stated that there is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size **businesses** in Eastern Kansas.

Regarding Hypothesis Number 1, the null hypothesis as stated was rejected at the .05 level of significance. Summarized by business size, Table 6 shows three of the nine OSRA Model Office Systems Courses, and the corresponding office systems course competencies were statistically significant at the .05 level of significance ( $p < .05$ ). The results of the One-Way Analysis of Variance and the Scheffe test indicated that office systems practitioners of large-size businesses were not in agreement with small- and medium-size businesses regarding office systems course competencies as grouped in the OSRA Model Office Systems

TABLE 6  
PERCEIVED IMPORTANCE OF OSRA MODEL CURRICULUM  
COURSES, BY BUSINESS SIZE  
(n = 74)

Course	F-ratio	Probability (p)
OS1-Office Systems Technologies	2.0991	.1303
OS2-Office Systems Planning	5.5928	.0057*
OS3-Office Systems Implementation Strategies	5.1457	.0083*
OS4-Office Systems Applications	1.9898	.1447
OS5-Integrated Office Systems	1.4596	.2395
OS6-Telecommunications	5.8326	.0046*
OS7-Administrative Communication	2.1977	.1188
OS8-Training/Development in Office Systems	1.9213	.1544
OS10-Professional Practice in Office Systems	.1673	.8463

\* Significant at the .05 level of significance.

Courses: OS2-Office Systems Planning ( $p = .0057$ ); OS3-Office Systems Implementation Strategies ( $p = .0083$ ); and OS6-Telecommunications ( $p = .0046$ ). Respondents from large-size businesses placed more importance on the three significant OSRA courses than small- and medium-size businesses. See Appendix D, Table 25 for more details on results of the ANOVA. Table 7 compares the mean frequencies for all respondents by business size for OS-2 Office Systems planning, which was significant at the  $p < .05$  level ( $p = .0057$ ). All respondents from large-size businesses (100 percent) rated the course

TABLE 7  
COMPARISON OF RATINGS OF OS-2 OFFICE SYSTEMS  
PLANNING\*, BY BUSINESS SIZE  
( $n = 74$ )

	No Importance			Extreme Importance	
	1	2	3	4	5
Small Business ( $n = 36$ ); no response ( $n = 3$ )					
Mean Frequency	0	4	19	13	0
Row Percentage	0.0	11.1	52.8	36.1	0.0
Medium Business ( $n = 27$ ); no response ( $n = 1$ )					
Mean Frequency	1	1	11	12	2
Row Percentage	3.7	3.7	40.7	44.4	7.4
Large Business ( $n = 7$ )					
Mean Frequency	0	0	0	6	1
Row Percentage	0.0	0.0	0.0	85.7	14.3

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0057$ ).

competencies of OS-2 Office Systems Planning between 'considerable importance' to 'extreme importance', whereas, over 85 percent of the respondents from small-size businesses and nearly 89 percent of the respondents from medium-size businesses gave ratings between 'some importance' to 'considerable importance.'

The degree of importance placed on OS-3 Office Systems Implementation Strategies, which was significant at the .05 level ( $p < .05$ ,  $p = .0083$ ) is indicated in Table 8. The majority of respondents (85.7 percent) from large-size businesses rated the course competencies of OS-3 Office Systems Implementation Strategies 'of considerable importance' to 'of extreme importance.' Eighty-eight percent

TABLE 8  
COMPARISON OF RATINGS OF OS-3 OFFICE SYSTEMS  
IMPLEMENTATION STRATEGIES\*,  
BY BUSINESS SIZE  
(n = 74)

	No Importance		Extreme Importance		
	1	2	3	4	5
Small Business (n = 38); no response (n = 1)					
Mean Frequency	1	1	17	19	0
Row Percentage	2.6	2.6	44.7	50.0	0.0
Medium Business (n = 25); no response (n = 3)					
Mean Frequency	0	2	10	12	1
Row Percentage	0.0	8.0	40.0	48.0	4.0
Large Business (n = 7)					
Mean Frequency	0	0	1	3	3
Row Percentage	0.0	0.0	14.3	42.85	42.85

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0083$ ).

of medium-size businesses and nearly 95 percent of small-size businesses rated the course competencies 'of some importance' to 'considerable importance.'

Table 9 reveals the mean frequencies for all respondents by business size for OS-6 Telecommunications, which was significant at the  $p < .05$  level ( $p = .0046$ ). The majority of respondents from large-size businesses (85.7 percent) rated the course competencies of OS-6 Telecommunications 'of considerable importance' to 'extreme importance.' Less emphasis was placed on the importance of these course competencies by respondents from small-size businesses (78.4 percent) and respondents from medium-size businesses (80.9

TABLE 9  
COMPARISON OF RATINGS OF OS-6 TELECOMMUN-  
ICATIONS\*, BY BUSINESS SIZE  
(n = 74)

	No Importance			Extreme Importance	
	1	2	3	4	5
<b>Small Business (n = 37); no response (n = 2)</b>					
Mean Frequency	1	5	17	12	2
Row Percentage	2.7	13.5	45.9	32.4	5.4
<b>Medium Business (n = 26); no response (n = 2)</b>					
Mean Frequency	1	1	12	9	3
Row Percentage	3.8	3.8	46.2	34.6	11.5
<b>Large Business (n = 7)</b>					
Mean Frequency	0	0	1	2	4
Row Percentage	0.0	0.0	14.3	28.6	57.1

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0046$ ).

percent), which rated the course 'of some importance' to 'of considerable importance.'

### Testing of Hypothesis Number 2

Hypothesis Number 2 stated that there is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size offices in Eastern Kansas.

Regarding Hypothesis Number 2, the null hypothesis as stated was rejected at the .05 level of significance. The results of the One-Way Analysis of Variance and the Scheffe test revealed three of the nine OSRA Model Office Systems Courses and the corresponding office systems competencies were statistically significant at the .05 level of significance ( $p < .05$ ). Summarized by office size, Table 10 shows that office systems practitioners of medium-size offices were not in agreement with large-size offices regarding three of the nine OSRA Model Office Systems Courses: OS2-Office Systems Planning ( $p = .0011$ ); OS3-Office Systems Implementation Strategies ( $p = .0101$ ); and OS4-Office Systems Applications ( $p = .0362$ ). Respondents from large-size offices placed more importance on these three courses than medium-size offices.

The results of the One-Way Analysis of Variance and the Scheffe test also indicated that office systems practitioners of small-size offices were not in agreement with large-size offices regarding five of the nine OSRA Model Office Systems Courses and the corresponding office systems competencies were

statistically significant at the .05 level ( $p < .05$ ) (OS2-Office Systems Planning,  $p = .0011$ ; OS3-Office Systems Implementation Strategies,  $p = .0101$ ; OS4-Office Systems Applications,  $p = .0362$ ; OS6-Telecommunications,  $p = .0144$ ; and OS8-Training/Development in Office Systems,  $p = .0389$ ). The analysis of the mean frequencies indicated that office systems practitioners of large-size offices placed more importance on the five significant OSRA Model Office Systems Courses than did small-size offices. See Appendix D, Table 26 for more details on the results of the ANOVA.

TABLE 10  
 PERCEIVED IMPORTANCE OF OSRA MODEL CURRICULUM  
 COURSES, BY OFFICE SIZE  
 (n = 74)

Course	F-ratio	Probability (p)
OS1-Office Systems Technologies	3.0620	.0534
OS2-Office Systems Planning	7.6108	.0011*
OS3-Office Systems Implementation Strategies	4.9376	.0101*
OS4-Office Systems Applications	3.4948	.0362*
OS5-Integrated Office Systems	1.9833	.1457
OS6-Telecommunications	4.5277	.0144*
OS7-Administrative Communication	2.8672	.0639
OS8-Training/Development in Office Systems	3.4157	.0389*
OS10-Professional Practice in Office Systems	.0847	.9188

\* Significant at the .05 level of significance.

The extent of the significant differences of the course competencies of OS-2 Office Systems Planning by respondents office size is found in Table 11 ( $p < .05$ ,  $p = .0011$ ). An analysis of the mean frequencies showed respondents from large-size offices (100 percent) rated the course competencies of this course 'of considerable importance' to 'of extreme importance.' Rating the course competencies of this course 'of some importance' to 'of considerable importance' was the respondents of the medium-size offices (87.49 percent). All respondents from small-size offices rated the course competencies of this course 'of little importance' to 'of considerable importance.' The groups rating the course from

TABLE 11  
COMPARISON OF RATINGS OF OS-2 OFFICE SYSTEMS  
PLANNING\*, BY OFFICE SIZE  
(n = 74)

	No Importance				Extreme Importance
	1	2	3	4	5
Small Office (n = 37)					
Mean Frequency	0	4	20	13	0
Row Percentage	0.0	10.8	54.1	35.1	0.0
Medium Office (n = 24)					
Mean Frequency	1	1	10	11	1
Row Percentage	4.17	4.17	41.66	45.83	4.17
Large Office (n = 7)					
Mean Frequency	0	0	0	5	2
Row Percentage	0.0	0.0	0.0	71.4	28.6
No Response (n = 6)					

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0011$ ).



highest to lowest was the large-size, the medium-size, and the small-size, respectively.

The range of the differences of the course competencies of OS-3 Office Systems Implementation Strategies, which was significant at the .05 level ( $p < .05$ ,  $p = .0101$ ) is shown in Table 12. The analysis of the mean frequencies revealed respondents from large-size offices rated the course competencies of this course higher than respondents from medium- and small-size offices. The ratings of the respondents of large-size offices (85.7 percent) responded with 'of considerable

TABLE 12  
COMPARISON OF RATINGS OF OS-3 OFFICE  
SYSTEMS IMPLEMENTATION STRATEGIES\*,  
BY OFFICE SIZE  
(n = 74)

	No Importance				Extreme Importance
	1	2	3	4	5
Small Office (n = 38)					
Mean Frequency	1	1	18	18	0
Row Percentage	2.6	2.6	47.4	47.4	0.0
Medium Office (n = 23)					
Mean Frequency	0	2	9	11	1
Row Percentage	0.0	8.7	39.13	47.83	4.34
Large Office (n = 7)					
Mean Frequency	0	0	1	3	3
Row Percentage	0.0	0.0	14.3	42.9	42.9
No Response (n = 6)					

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0101$ ).

importance' to 'of extreme importance.' Nearly 87 percent of the respondents from medium-size offices and almost 85 percent of the respondents from small-size offices gave the course the rating 'of some importance' to 'of considerable importance.'

The magnitude of the deviations between the perception of respondents from small-, medium-, and large-size offices of OSRA Model Course OS-4 Office Systems Applications as being essential for entry-level employment in lower- to middle-management office systems positions is presented Table 13. This course was significant at the .05 level of significance ( $p < .05$ ,  $p = .0362$ ). As the results

TABLE 13  
COMPARISON OF RATINGS OF OS-4 OFFICE SYSTEMS  
APPLICATIONS\*, BY OFFICE SIZE  
(n = 74)

	No Importance				Extreme Importance
	1	2	3	4	5
Small Office (n = 38)					
Mean Frequency	1	1	18	18	0
Row Percentage	2.63	2.63	47.37	47.37	0.0
Medium Office (n = 23)					
Mean Frequency	0	2	7	10	4
Row Percentage	0.0	8.7	30.4	43.5	17.4
Large Office (n = 7)					
Mean Frequency	0	0	1	3	3
Row Percentage	0.0	0.0	14.28	42.86	42.86
No Response (n = 6)					

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0362$ ).

of the mean frequencies show of the three office size groups, respondents from large-size offices rated the course competencies of OS-4 Office Systems Applications the highest. Nearly 86 percent indicated that the course competencies were 'of considerable importance' to 'of extreme importance.' The second highest rating of the three office size groups was respondents from the medium-size offices. The medium-size group rated the course as 'of some importance' to 'of extreme importance,' with 91 percent of the group giving the course this rating. The group giving this course the lowest of the three groups was respondents from the small-size offices. Nearly 95 percent of these respondents gave OS-4 Office Systems Applications a rating 'of some importance' to 'considerable importance.'

Table 14 is a comparison of ratings of OS-6 Telecommunications as reported by small- and large-size offices. The results of the ANOVA revealed that significant differences existed only between the small- and large-size offices ( $p < .05$ ,  $p = .0144$ ). The direction of the differences were found by analyzing the mean frequencies of the two office size groups. Respondents from large-size offices rated the competencies for this course higher than respondents from small-size offices. All of the respondents from the large-size offices (100 percent) rated OS6-Telecommunications as 'of some importance' to 'of extreme importance.' The range of perceptions from small-size offices (100 percent) toward the course was 'of no importance' to 'of extreme importance,' with the majority of the group (45.95 percent) rating it as 'of some importance.'

TABLE 14  
 COMPARISON OF RATINGS OF OS-6 TELECOMMUN-  
 ICATIONS, BY OFFICE SIZE  
 (n = 74)

	No Importance				Extreme Importance
	1	2	3	4	5
<b>*Small Office (n = 37)</b>					
Mean Frequency	1	6	17	10	3
Row Percentage	3.7	16.22	45.95	27.02	8.11
<b>Medium Office (n = 24)</b>					
Mean Frequency	1	0	10	11	2
Row Percentage	4.17	0.0	41.66	45.83	8.34
<b>*Large Office (n = 7)</b>					
Mean Frequency	0	0	2	1	4
Row Percentage	0.0	0.0	28.6	14.3	57.1

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0144$ ).

The OSRA Model Course OS-8 Training and Development in Office Systems was significant at the .05 level ( $p < .05$ ,  $p = .0389$ ) between respondents of small-size offices and respondents of large-size offices. As Table 15 shows, greater importance was placed on the course competencies of this course by the large-size office group. The majority of the respondents from the large-size office group (57.1 percent) rated the course 'of considerable importance,' whereas the majority of the respondents from the small-size office group (45.95 percent) rated it 'of some importance' for entry-level employment in lower- to middle-management positions in office systems.

TABLE 15  
 COMPARISON OF RATINGS OF OS-8 TRAINING AND  
 DEVELOPMENT IN OFFICE SYSTEMS,  
 BY OFFICE SIZE  
 (n = 74)

	No Importance				Extreme Importance
	1	2	3	4	5
<hr/>					
<b>*Small Office (n = 37)</b>					
Mean Frequency	1	5	17	10	4
Row Percentage	2.7	13.51	45.95	27.03	10.81
<b>Medium Office (n = 24)</b>					
Mean Frequency	1	2	11	6	4
Row Percentage	4.17	8.33	45.83	25	16.67
<b>*Large Office (n = 7)</b>					
Mean Frequency	0	0	1	4	2
Row Percentage	0.0	0.0	14.3	57.1	28.6

\* Significant at the .05 level of significance ( $p < .05$ ,  $p = .0389$ ).

#### Further Discussion of Hypotheses

Tables 16-24 contain the analysis of the mean response of all respondents regarding the perceived level of importance for all of the nine OSRA Model Curriculum Courses and their competencies. The mean and the standard deviation was calculated for each of the forty-five competencies. Means of each competency are organized in order of importance, with the competencies with the highest mean, or greatest importance, placed in ascending to descending order in the tables. The standard deviation was calculated for "interpretations related to the normal distribution curve" (Isaac & Michael, 1984, p. 159). The smaller the

standard deviation for each of the competencies indicates a closer range in agreement by the total respondents, and the large the standard deviation indicates a broader range in agreement.

Table 16 shows the overall average response of the total respondents regarding OS-1 Office Systems Technologies. The highest\* and lowest\*\* values of all of the respondents of all of the competencies were found in this OSRA Course. The competency that held the highest average rating by all respondents ( $X = 4.42$ ,  $SD = .68$ , 'of considerable importance') was "the ability to recognize the importance of the human factor in the office and information systems environment." This finding agrees with the 1986 O'Connor and Penwell study summarized in Chapter 2. The lowest average rating of all of the competencies by all respondents ( $X = 2.53$ ,  $SD = 1.04$ , 'of some importance') was "the ability to gain a historical perspective of office systems development."

The analysis of OS-2 Office Systems Planning by mean responses of the total respondents is found in Table 17. The most important competency of the seven course competencies for OS-2 Office Systems Planning as perceived by all respondents ( $X = 3.92$ ,  $SD = .82$ , 'of considerable importance') was "the ability to determine office systems requirements based upon individual, department, division, and organization needs". The least important competency of the seven course competencies as determined by all respondents ( $X = 2.90$ ,  $SD = 1.11$ , 'of some importance') was "the ability to use tools for planning office systems (i.e., Gantt Charts, PERT, data flow diagrams)."

TABLE 16  
 MEAN RESPONSE REGARDING PERCEIVED LEVEL  
 OF IMPORTANCE OF OS-1 OFFICE  
 SYSTEMS TECHNOLOGIES  
 (n = 74)

Competency	Mean	Standard Deviation	Cases
Recognize the importance of the human factor in the office and information systems environment.	4.42*	.68	74
Understand the evolving role of the office as a support systems for the total organization.	4.07	.82	74
Understand the reasons for ongoing changes in the office.	4.04	.75	73
Develop a conceptual view of how office systems relate to an organization-wide information support system.	3.92	.79	74
Show the interrelatedness in an office system to people, technology, and procedures.	3.86	.76	74
Identify the components of information storage/retrieval systems (i.e., database, optical disks, manual systems).	3.74	.92	74
Understand legal/ethical issues related to managing office systems.	3.73	1.03	73
Recognize the movement toward information centers and departmental systems as approaches to office and information systems management.	3.62	.86	74
Identify systems and approaches for text/document creation (i.e., dictation equipment, word processing, voice recognition).	3.60	1.15	73
Identify the relative merits of information distribution systems (i.e., printing, voice mail, electronic mail, teleconferencing).	3.53	.97	74
Gain a historical perspective of office systems development.	2.53**	1.04	74

\*highest value, \*\*lowest value, 5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

TABLE 17

MEAN RESPONSE REGARDING PERCEIVED LEVEL  
OF IMPORTANCE OF OS-2 OFFICE  
SYSTEMS PLANNING  
(n = 74)

Competency	Mean	Standard Deviation	Cases
Determine office systems requirements based upon individual, department, division, and organization needs.	3.92	.82	74
Understand the complexities (both technical and human factors) involved in planning end-user support systems.	3.76	1.00	74
Recognize ways to minimize resistance to planning for automation.	3.60	.97	73
Recognize the importance of identifying information-system and business-function interrelationships within the departments, divisions, and other units of the organization.	3.56	1.07	71
Assess the effectiveness of alternative office system organizational structures.	3.42	.96	73
Conduct feasibility studies.	3.03	1.06	74
Use tools for planning office systems (i.e., Gantt Charts, PERT, data flow diagrams).	2.90	1.11	73

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

"The ability to assess potential problems and issues associated with implementation of office systems" is the OS-3 Office Systems Implementation Strategies course competency shown in Table 18 as the most important for this course as rated by all of the respondents ( $X = 3.79$ ,  $SD = .94$ , 'of considerable



importance'). "The ability to understand how to prepare requests for proposals (RFP's) related to office systems" was rated overall as 'of some importance' ( $X =$

TABLE 18  
 MEAN RESPONSE REGARDING PERCEIVED LEVEL  
 OF IMPORTANCE OF OS-3 OFFICE  
 SYSTEMS IMPLEMENTATION  
 STRATEGIES  
 (n = 74)

Competency	Mean	Standard Deviation	Cases
Assess potential problems and issues associated with implementation of office systems.	3.79	.94	73
Develop appreciation for satisfying end-user needs in office support systems.	3.74	.93	72
Apply the results from office systems planning to implementation strategies.	3.65	.94	72
Develop skills needed to analyze, design, and implement an integrated office system.	3.61	.96	71
Assist with the development of end-user office support systems.	3.60	1.06	72
Develop instruments/guidelines for evaluating office support systems.	3.43	.93	72
Develop data collection procedures for use in office systems analysis.	3.42	.90	73
Understand uses of project management software packages for development of office systems.	3.24	.90	74
Understand how to prepare requests for proposals (RFP's) related to office systems.	3.07	.91	70

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

3.07, SD = .91) by all respondents as being essential for entry-level employment in lower- to middle-management office systems positions.

Table 19 presents the total respondents' highest and lowest means regarding the course competencies of OS-4 Office Systems Applications. "The ability to develop skills for using office systems software programs (i.e., word processing, database, spreadsheets, graphics)" was the highest mean ( $X = 4.29$ , SD

TABLE 19  
MEAN RESPONSE REGARDING PERCEIVED  
LEVEL OF IMPORTANCE OF OS-4  
OFFICE SYSTEMS APPLICATIONS  
(n = 74)

Competency	Mean	Standard Deviation	Cases
Develop skills for using office systems software programs (i.e., word processing, database, spreadsheets, graphics).	4.29	.88	72
Receive practical experience in using office systems technologies.	3.87	.97	71
Evaluate both hardware and software applicable to the office domain.	3.83	.84	72
Recognize the importance of defining productivity measures that can be achieved with properly selected systems.	3.65	1.03	71
Define the role played by microcomputers in the office information systems environment.	3.39	.97	72
Identify the features of alternative processing systems (i.e., micro-, mini-, mainframes).	3.39	.89	71

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

= .88), and "the ability to identify the features of alternative processing systems (i.e., micro-, mini-, mainframes)" was the lowest mean ( $X = 3.39$ ,  $SD = .89$ ) for all of the respondents.

The mean response of all respondents regarding the perceived level of importance for the three course competencies of OS-5 Integrated Office Systems is presented in Table 20.

TABLE 20  
MEAN RESPONSE REGARDING PERCEIVED  
LEVEL OF IMPORTANCE OF OS-5  
INTEGRATED OFFICE SYSTEMS  
(n = 74)

Competency	Mean	Standard Deviation	Cases
Problem solving in all areas of office systems planning and development.	3.68	.89	72
Emphasize office systems management as it related to the functional areas of business (i.e., finance, marketing, production.)	3.56	1.04	71
Evaluate office systems concepts through the use of case studies involving real business situations.	3.17	1.04	71

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

Table 21 displays the mean responses of all respondents regarding the two competencies of OS-6 Telecommunications. Both of the means of the two course

competencies fell into the category of 'of some importance' for entry-level employment in lower- to middle-management office systems positions as rated by the total respondents.

TABLE 21  
MEAN RESPONSE REGARDING PERCEIVED  
LEVEL OF IMPORTANCE OF OS-6  
TELECOMMUNICATIONS  
(n = 74)

Competency	Mean	Standard Deviation	Cases
Acquire an understanding of how data and telecommunications can be integrators of office systems technologies.	3.39	.93	71
Evaluate telecommunications services (i.e., dedicated leased lines, data sources, teleconferencing).	3.09	.96	70

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

The mean response and the standard deviation of those responses is indicated in Table 22 regarding the perceived level of importance for the three course competencies within the OSRA Model Course OS-7 Administrative Communication.

Table 23 shows the overall average response of the total respondents regarding the three course competencies of the OSRA Model Course OS-8 Training and Development in Office Systems. The highest mean reported for these competencies was 3.61 for 'the ability to understand training approaches to

TABLE 22  
 MEAN RESPONSE REGARDING PERCEIVED  
 LEVEL OF IMPORTANCE OF  
 OS-7 ADMINISTRATIVE  
 COMMUNICATION  
 (n = 74)

Competency	Mean	Standard Deviation	Cases
Gather, interpret, and organize information (i.e., informational or analytical reports).	3.78	.95	72
Develop and communicate oral presentations needed to defend decisions and recommendations.	3.58	.99	72
Write user documentation and administrative procedures (manuals).	3.32	1.18	72

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

TABLE 23  
 MEAN RESPONSE REGARDING PERCEIVED LEVEL OF  
 IMPORTANCE OF OS-8 TRAINING AND  
 DEVELOPMENT IN OFFICE SYSTEMS  
 (n = 74)

Competency	Mean	Standard Deviation	Cases
Understand training approaches to use in office systems implementation.	3.61	.90	71
Select training strategies and media.	3.35	1.00	71
Write training objectives for office systems personnel.	3.33	1.06	70

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

use in office systems implementation.' The lowest mean reported ( $X = 3.33$ ,  $SD = 1.06$ , 'of some importance') was 'the ability to write training objectives for office systems personnel.'

The results of the only competency in OS-10 Professional Practice in Office Systems is shown in Table 24.

TABLE 24  
MEAN RESPONSE REGARDING PERCEIVED  
LEVEL OF IMPORTANCE OF OS-10  
PROFESSIONAL PRACTICE  
IN OFFICE SYSTEMS  
(n = 74)

Competency	Mean	Standard Deviation	Cases
Experience in an office systems internship/cooperative study for the purpose of applying classroom concepts to a real-life setting.	3.69	1.10	70

5=of extreme importance; 4=of considerable importance; 3=of some importance; 2=of little importance; 1=of no importance

Overall, the mean responses for each of the 45 course competencies were rated as 'of considerable importance' to 'of some importance' by office systems practitioners, which suggests that all of the course competencies are essential for entry-level employment in lower- to middle-management office systems positions.

## Summary

This chapter presented an analysis of the results from the study instrument. The results concerning each hypothesis were tabulated and reported according to sum of squares, degrees of freedom, mean squares, F-ratios and level of probability. Scheffe's test for significance was utilized in comparing and revealing relationships between selected items in the study instrument. Specific results were summarized and presented through discussion and the various tables within the chapter and Appendix D.

The summary, conclusions, and recommendations are presented in Chapter V.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Introduction

Numerous authors agree that the technological advances which have occurred during the past two decades have had a tremendous impact on our society. These technological advances have especially impacted the way businesses of various types and sizes handle their information. As technology is continually changing the way businesses handle their information, the same is true for the changing requirements of office personnel. Two decades ago, the field of office systems management did not exist.

The purpose of this study was to provide information for business education and office systems curriculum analysis and design.

#### Problem and Design of the Study

##### Problem of the Study

The problem of this study was to determine what relationships exist among office systems practitioners and their perceptions of the importance of office systems management course competencies needed for entry-level employment in



lower- to middle-management positions in office systems in small-, medium-, and large-size businesses and offices in Eastern Kansas.

### Design of the Study

The literature search provided information to be included in the questionnaire. The questionnaire was designed and constructed from a study of related research, other research questionnaires, a pilot study administered to information processing educators and students at Emporia State University, and critiques made by Oklahoma State University and Emporia State University faculty members.

The questionnaire was mailed to 286 office systems practitioners randomly selected from 1065 businesses from Topeka, Wichita, and Kansas City listed in the Kansas Directory of Commerce. Follow-up letters were mailed to provide a higher rate of return from the respondents. Ninety office systems practitioners returned a questionnaire and 74 questionnaires were analyzed for this study.

### Analysis of the Data

All of the responses from the returned office systems practitioners' questionnaires were coded and analyzed using SPSS statistical software. The collected data were analyzed through the employment of frequency counts and percentage breakdowns. The One-Way Analysis of Variance (ANOVA) and Scheffe tests were used to test the stated research hypotheses.

## Summary of the Findings

This study revealed that significant differences (at the .05 level of significance) exist between small- and large-size businesses and the degree of importance office systems practitioners place on office systems management course competencies needed for entry-level employment in lower- to middle-management positions in office systems. At the .05 level, significant differences also exist between medium- and large-size businesses and the degree of importance office systems practitioners place on office systems management course competencies needed for entry-level employment in lower- to middle-management positions in office systems.

These and other findings have been summarized in a section format. Each section represents one of the study's research hypotheses. These findings are a result of the statistical analysis of the collected data.

### Hypothesis Number 1

There is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size businesses in Eastern Kansas.

Hypothesis Number 1 was rejected at the .05 level of significance. Businesses with over 250 total employees placed more importance on course competencies involving office systems planning, office systems implementation strategies and telecommunications ( $p < .05$ ).

## Hypothesis Number 2

There is no significant difference among office systems course competencies essential for entry-level employment in lower- to middle-management positions in office systems, as perceived by office systems practitioners of small-, medium-, and large-size offices in Eastern Kansas.

Hypothesis Number 2 was rejected at the .05 level of significance. Offices with over 35 office employees placed more importance on office systems planning, office systems implementation strategies, office systems applications, telecommunications, and training/development in office systems ( $p < .05$ ).

Office systems management course competencies essential for entry-level management office systems positions in small- and medium-size businesses and offices are similar, but office systems management course competencies essential for large-size businesses and offices differ ( $p < .05$ ).

The "ability to recognize the importance of the human factor in the office and information systems environment" was the competency that the respondents recognized as 'of considerable importance' ( $X = 4.42$ ) as a competency essential for entry-level employment in lower- to middle-management positions in office systems. "To gain a historical perspective of office systems development" was identified by the respondents as 'of some importance' ( $X = 2.53$ ) as a competency essential for entry-level employment in lower- to middle-management positions in office systems.

The office systems management course competencies rated as the most important in each of the nine OSRA Model courses dealt with software skills and management functions, such as planning, organizing, problem solving, assessing, and interpreting.

Overall, the results of the study indicated that the respondents' acknowledged all of the office systems competencies as being 'of considerable importance' to 'of extreme importance' for entry-level employment in lower- to middle-management positions in office systems.

### Conclusions

Because the relationship between the size of business and office and the office systems practitioners' perception of the importance of office systems course competencies was significant, the size of business and the size of office does seem to have an influence on the office systems practitioners' perception of the importance of office systems management course competencies essential for entry-level employment in lower- to middle-management office systems positions.

Even though the perception of office systems practitioners from large-size businesses and offices of the importance of the office systems management course competencies were higher than the office systems practitioners of small- and medium-size businesses and offices, the conclusion that all of the 45 office systems management course competencies are essential for entry-level employment in lower- to middle-management office systems positions is further substantiated.

The ability to recognize the importance of the human factor in the office and information systems environment is essential for entry-level employment in lower- to middle-management office systems positions. This conclusion is based on the finding that this competency was perceived by the office systems practitioners as being the one most important for entry-level employment in small-, medium-, and large-size businesses and offices.

### Recommendations

1. Postsecondary institutions preparing graduates in office systems for jobs in large offices and corporations should include in their coursework all of the 45 competencies used in this study.
2. Postsecondary institutions preparing graduates in office systems for small- and medium-size businesses should place less emphasis on the areas of office systems planning and implementation, and telecommunications.
3. Postsecondary institutions preparing graduates in office systems for small- and medium-size offices should place less emphasis on office systems planning and implementation, and office applications.
4. Postsecondary institutions preparing graduates in office systems for all sizes of businesses should emphasize the human factor in the office and information systems environment.
5. A replication of this study should be completed in other cities to determine generalizability to other regions of the country.

6. The study should be replicated in three to five years to determine the continuing status of competencies needed by office systems practitioners.

7. Future research should be conducted to further investigate human factors in the office information systems environment among small-, medium-, and large-size businesses and offices.

8. A comparison study of office systems professors should be completed to assess to what degree course competencies are being included in their course designs and course descriptions.

9. An attitudinal study of recent office systems graduates should be conducted to assess the value of course competencies in office systems and how the designated course competencies have affected their on-the-job work experience.

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## APPENDICES

APPENDIX A  
QUESTIONNAIRE

Identification Number \_\_\_\_\_

## OFFICE SYSTEMS MANAGEMENT COMPETENCIES SURVEY

### PART I Demographic Information



1. Your Present Title \_\_\_\_\_
2. Number of years of service with this company?  
\_\_\_\_\_
3. Which of the following best describes your company?  
(check only one)
 

<input checked="" type="checkbox"/> a. Manufacturing	<input type="checkbox"/> e. Education
<input type="checkbox"/> b. Finance	<input type="checkbox"/> f. Government
<input type="checkbox"/> c. Wholesale	<input type="checkbox"/> g. Medicine
<input type="checkbox"/> d. Insurance	<input type="checkbox"/> i. Other (please specify)

\_\_\_\_\_
4. Approximately how many people are employed by your organization/firm/business?  
\_\_\_\_\_
5. Approximately how many office employees are employed by your organization/firm/business?  
\_\_\_\_\_
6. Approximately how many employees do you supervise?  
Directly \_\_\_\_\_ Indirectly \_\_\_\_\_
7. Your education (check all that apply below)
 

<input type="checkbox"/> a. high school graduate
<input type="checkbox"/> b. vocational technical school
<input type="checkbox"/> c. business college
<input type="checkbox"/> d. junior college
<input type="checkbox"/> e. 4-year college/university graduate (write in major field of study below)
<input type="checkbox"/> f. Post college/university (write in degree(s) below)

\_\_\_\_\_

## PART II Office Systems Management Competencies

**INSTRUCTIONS** Circle the response which best describes your perceptions about each competency needed by office systems graduates for entry-level employment in lower to middle management positions in office systems. The scaled positions range from 5 to 1 with the following descriptors:

- 5 = of extreme importance
- 4 = of considerable importance
- 3 = of some importance
- 2 = of little importance
- 1 = of no importance

The office systems professional at the management level will be able to:

	extreme importance	no importance
1. Recognize the importance of the human factor in the office and information systems environment.	5	4 3 2 1
2. Develop a conceptual view of how office systems relates to an organization-wide information support system.	5	4 3 2 1
3. Show the interrelatedness in an office system of people, technology, and procedures	5	4 3 2 1
4. Recognize the movement toward information centers and departmental systems as approaches to office and information systems management.	5	4 3 2 1
5. Understand the evolving role of the office as a support system for the total organization.	5	4 3 2 1
6. Gain a historical perspective of office systems development.	5	4 3 2 1
7. Understand the reasons for ongoing changes in the office.	5	4 3 2 1
8. Identify systems and approaches for text/document creation (i.e., dictation equipment, word processing, voice recognition).	5	4 3 2 1
9. Identify the components of information storage/retrieval systems (i.e., database, optical disks, manual systems).	5	4 3 2 1
10. Identify the relative merits of information distribution systems (i.e., printing, voice mail, electronic mail, teleconferencing).	5	4 3 2 1
11. Understand legal/ethical issues related to managing office systems.	5	4 3 2 1
12. Understand the complexities (both technical and human factors) involved in planning end-user support systems.	5	4 3 2 1
13. Conduct feasibility studies.	5	4 3 2 1
14. Use tools for planning office systems (i.e., Gantt Charts, PERT, data flow diagrams).	5	4 3 2 1
15. Recognize the importance of identifying information-system and business-function interrelationships within the departments, divisions, and other units of the organization.	5	4 3 2 1
16. Recognize ways to minimize resistance to planning for automation.	5	4 3 2 1
17. Determine office systems requirements based upon individual, department, division, and organization needs.	5	4 3 2 1
18. Assess the effectiveness of alternative office system organizational structures.	5	4 3 2 1
19. Understand uses of project management software packages for development of office systems	5	4 3 2 1

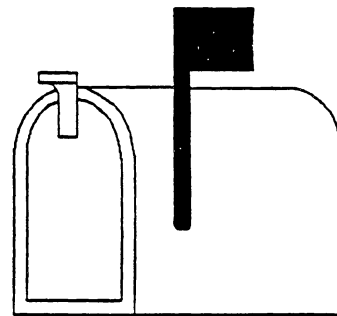
- |                                                                                                                                         |           |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 20. Develop data collection procedures for use in office systems analysis.                                                              | 5 4 3 2 1 |
| 21. Assess potential problems and issues associated with implementation of office systems.                                              | 5 4 3 2 1 |
| 22. Assist with the development of end-user office support systems.                                                                     | 5 4 3 2 1 |
| 23. Apply the results from office systems planning to implementation strategies.                                                        | 5 4 3 2 1 |
| 24. Develop appreciation for satisfying end-user needs in office support systems.                                                       | 5 4 3 2 1 |
| 25. Develop instruments/guidelines for evaluating office support systems                                                                | 5 4 3 2 1 |
| 26. Understand how to prepare requests for proposals (RFP's) related to office systems.                                                 | 5 4 3 2 1 |
| 27. Develop skills needed to analyze, design, and implement an integrated office system.                                                | 5 4 3 2 1 |
| 28. Identify the features of alternative processing systems (i.e., micro-, mini-, mainframes).                                          | 5 4 3 2 1 |
| 29. Evaluate both hardware and software applicable to the office domain                                                                 | 5 4 3 2 1 |
| 30. Develop skills for using office systems software programs (i.e., word processing, database, spreadsheets, graphics).                | 5 4 3 2 1 |
| 31. Recognize the importance of defining productivity measures that can be achieved with properly selected systems.                     | 5 4 3 2 1 |
| 32. Define the role played by microcomputers in the office information systems environment.                                             | 5 4 3 2 1 |
| 33. Receive practical experience in using office systems technologies.                                                                  | 5 4 3 2 1 |
| 34. Emphasize office systems management as it relates to the functional areas of business (i.e., finance, marketing, production).       | 5 4 3 2 1 |
| 35. Problem solve in all areas of office systems planning and development.                                                              | 5 4 3 2 1 |
| 36. Evaluate office systems concepts through the use of case studies involving real business situations.                                | 5 4 3 2 1 |
| 37. Acquire an understanding of how data and telecommunications can be integrators of office systems technologies.                      | 5 4 3 2 1 |
| 38. Evaluate telecommunications services (i.e., dedicated leased lines, data sources, teleconferencing)                                 | 5 4 3 2 1 |
| 39. Develop and communicate oral presentations needed to defend decisions and recommendations.                                          | 5 4 3 2 1 |
| 40. Gather, interpret, and organize information (i.e., informational or analytical reports).                                            | 5 4 3 2 1 |
| 41. Write user documentation and administrative procedures (manuals).                                                                   | 5 4 3 2 1 |
| 42. Understand training approaches to use in office systems implementation.                                                             | 5 4 3 2 1 |
| 43. Write training objectives for office systems personnel.                                                                             | 5 4 3 2 1 |
| 44. Select training strategies and media.                                                                                               | 5 4 3 2 1 |
| 45. Experience in an office systems internship/cooperative study for the purpose of applying classroom concepts to a real-life setting. | 5 4 3 2 1 |

*If additional competencies should be added to this list, please state in the space provided or on the back*

---

Please mail your completed questionnaire  
in the enclosed envelope by **July 2, 1990.**

*Thank You!*



APPENDIX B

COVER LETTER





Oklahoma State University

COLLEGE OF BUSINESS ADMINISTRATION

STILLWATER OKLAHOMA 74078-0555  
BUSINESS 201  
405-744-5064

June 14, 1990

QUESTIONNAIRE TO DEFINE THE  
IMPORTANCE OF OFFICE SYSTEMS  
MANAGEMENT COMPETENCIES

Dear Personnel Manager

The purpose of this questionnaire is to define the importance of office systems management competencies. As personnel manager, please assist me in routing the enclosed questionnaire to the appropriate person in your organization.

As office personnel are faced with rapidly changing technology, completion of the enclosed questionnaire will help define competencies needed for entry-level employment in lower to middle management positions in office systems. An ultimate objective is to provide information to business educators for revision of content for office systems courses.

Only a few minutes will be necessary to complete the enclosed questionnaire. If you do not manage the office, please give this questionnaire to the appropriate person. If your company does not employ office personnel, please fill out only the first page of the questionnaire and return it in the enclosed envelope.

Please return the enclosed confidential questionnaire in the postage paid envelope by July 2, 1990. Your professional contribution to the improvement of office automation training will be significant and greatly appreciated. By filling in your name and address on the enclosed postage paid postcard, you will be provided with the results of this study. Should you have questions concerning this questionnaire, call me at (316) 342-6222.

*Janet Buzzard*

Janet Buzzard  
Oklahoma State University  
Doctoral Student

*Richard Aukerman*

Dr. Richard Aukerman  
Oklahoma State University  
Thesis Advisor

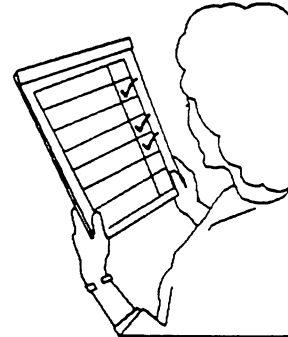
Enclosures



APPENDIX C

FOLLOW-UP LETTER

July 14, 1990



**QUESTIONNAIRE TO DEFINE THE  
IMPORTANCE OF OFFICE SYSTEMS  
MANAGEMENT COMPETENCIES**

**EACH QUESTIONNAIRE COUNTS. . .**

Even though the response to the questionnaire has been most gratifying, we are still anxious to receive your completed survey. The purpose of this questionnaire is to define the importance of office systems management competencies for Central and Eastern Kansas. In order to have a valid representation of this area, a larger return is needed. As personnel manager, please assist me in routing the enclosed questionnaire to the appropriate person in your organization.

Only a few minutes will be necessary to complete the enclosed questionnaire. If you do not manage the office, please give this questionnaire to the appropriate person. If your company does not employ office personnel, please fill out only the first page of the questionnaire and return it in the enclosed envelope.

Please return the enclosed confidential questionnaire in the postage paid envelope as soon as possible. We realize that you are very busy. However, your response is vitally important to the success of this study. Your professional contribution to the improvement of office automation training will be significant and greatly appreciated. Should you have questions concerning this questionnaire, call me at (316) 343-5415.

A handwritten signature in cursive script that reads "Janet Buzzard".

Janet Buzzard  
Oklahoma State University  
Doctoral Student

Enclosures

APPENDIX D

ANCILLARY TABLES

TABLE 25

ONE-WAY ANALYSIS OF VARIANCE OF DIFFERENCES AMONG SIZE  
OF BUSINESS AND THE PERCEIVED IMPORTANCE OF THE  
OSRA MODEL CURRICULUM CONTENT

(N = 74)

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (DF)	Mean Squares (MS)	F Ratio	Level of Probability (p)
<b>OS1-Office Systems Technologies</b>					
Between Groups	1.2528	2	.6264	2.0991	.1303
Within Groups	20.5911	69	.2984		
Total	21.8439	71			
<b>OS2-Office Systems Planning</b>					
Between Groups	5.5783	2	2.7891	5.5928	.0057*
Within Groups	33.4130	67	.4987		
Total	38.9913	69			
<b>OS3-Office Systems Implementation Strategies</b>					
Between Groups	3.9507	2	1.9754	5.1457	.0083*
Within Groups	25.7201	67	.3839		
Total	29.6709	69			

\* Significant at the  $p < .05$  level.

TABLE 25 (continued)

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (dF)	Mean Squares (MS)	F Ratio	Level of Probability (p)
OS4-Office Systems Applications					
Between Groups	1.9330	2	.9665	1.9898	.1447
Within Groups	32.5447	67	.4857		
Total	34.4777	69			
OS5-Integrated Office Systems					
Between Groups	1.8522	2	.9261	1.4596	.2395
Within Groups	43.1431	68	.6345		
Total	44.9953	70			
OS6-Telecommunications					
Between Groups	7.7645	2	3.8823	5.8326	.0046*
Within Groups	44.5962	67	.6656		
Total	52.3607	69			
OS7-Administrative Communication					
Between Groups	2.9655	2	1.4827	2.1977	.1188
Within Groups	46.5515	69	.6747		
Total	49.5170	71			

\* Significant at the .05 level of significance.

TABLE 25 (continued)

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (dF)	Mean Squares (MS)	F Ratio	Level of Probability (p)
OS8-Training and Development in Office Systems					
Between Groups	3.0994	2	1.5497	1.9213	.1544
Within Groups	54.0434	67	.8066		
Total	57.1429	69			
OS10-Professional Practice in Office Systems					
Between Groups	.4128	2	.2064	.1673	.8463
Within Groups	82.6729	67	1.2339		
Total	83.0857	69			

\* Significant at the .05 level of significance.

TABLE 26

ONE-WAY ANALYSIS OF VARIANCE OF DIFFERENCES AMONG SIZE  
OF OFFICE AND THE PERCEIVED IMPORTANCE OF  
THE OSRA MODEL CURRICULUM CONTENT  
(n = 74)

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (dF)	Mean Squares (MS)	F Ratio	Level of Probability (p)
OS1-Office Systems Technologies					
Between Groups	1.8193	2	.9097	3.0620	.0534
Within Groups	19.9045	67	.2971		
Total	21.7238	69			
OS2-Office Systems Planning					
Between Groups	7.3818	2	3.6909	7.6108	.0011*
Within Groups	31.5219	65	.4850		
Total	38.9037	67			
OS3-Office Systems Implementation Strategies					
Between Groups	3.8940	2	1.9470	4.9376	.0101*
Within Groups	25.5251	65	.3943		
Total	29.4191	67			

\* Significant at the .05 level of significance.



TABLE 26 (continued)

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (dF)	Mean Squares (MS)	F Ratio	Level of Probability (p)
<b>OS4-Office Systems Applications</b>					
Between Groups	3.2967	2	1.6484	3.4948	.0362*
Within Groups	30.6580	65	.4717		
Total	33.9547	67			
<b>OS5-Integrated Office Systems</b>					
Between Groups	2.5257	2	1.2628	1.9833	.1457
Within Groups	42.0251	66	.6367		
Total					
<b>OS6-Telecommunications</b>					
Between Groups	6.3239	2	3.1619	4.5277	.0144*
Within Groups	45.3931	65	.6984		
Total	51.7169	67			
<b>OS7-Administrative Communication</b>					
Between Groups	3.8874	2	1.9437	2.8672	.0639
Within Groups	45.4205	67	.6779		
Total	49.3079	69			

\* Significant at the .05 level of significance.

TABLE 26 (continued)

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (dF)	Mean Squares (MS)	F Ratio	Level of Probability (p)
OS8-Training and Development in Office Systems					
Between Groups	5.4115	2	2.7058	3.4157	.0389*
Within Groups	51.4904	65	.7922		
Total	56.9019	67			
OS10-Professional Practice in Office Systems					
Between Groups	.2146	2	.1073	.0847	.9188
Within Groups	82.3001	65	1.2662		
Total	82.5147	67			

\* Significant at the .05 level of significance.

2  
**VITA**

**Janet Kay Daugherty Buzzard**

**Candidate for the Degree of**

**Doctor of Education**

**Thesis: IDENTIFICATION OF COURSE COMPETENCIES  
RECOMMENDED FOR ENTRY-LEVEL OFFICE SYSTEMS  
MANAGEMENT PERSONNEL BASED ON OFFICE SYSTEMS  
PRACTITIONERS' PERCEPTIONS**

**Major Field: Business Education**

**Emphasis: Information Processing**

**Biographical:**

**Personal Data:** Born in Columbus, Kansas, February 14, 1962, the daughter of John Q. and R. Colleen Daugherty.

**Education:** Graduated from Commerce High School, Commerce Oklahoma, in May 1980; received the Associate of Science degree in Business from Northeast Oklahoma A & M College, Miami, Oklahoma, 1981; received the Bachelor of Science degree in Business Education from Missouri Southern State College, Joplin, Missouri, in 1983; received the Master of Science degree in Technical Teacher Education from Pittsburg State University, Pittsburg, Kansas, in 1984; completed the requirements for the Doctor of Education degree at Oklahoma State University in May, 1991.

**Professional Experience:** Graduate teaching assistant, College of Business Administration, Oklahoma State University, 1984-1986; Assistant Professor, Office Systems, Emporia State University, Emporia, Kansas, 1986-present.

**Professional Organizations:** Delta Pi Epsilon, Kansas Business Education Association, National Business Education Association.