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Comparison of the Effect of Instructional Versus Industry-Specific Computer Simulation on Students Learning in a Front Office Management Course

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To the Graduate Council:

I am submitting herewith a dissertation written by Mohamed Abdul-Ghani entitled "Comparison of the Effect of Instructional Versus Industry-Specific Computer Simulation on Students Learning in a Front Office Management Course." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Human Ecology.

Carol Costello, Major Professor

We have read this dissertation and recommend its acceptance:

James D. Moran, Jackie H. McInnis, Frank W. Davis, Mark McGrath

Accepted for the Council:

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Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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Accepted for the Council:

Associate Vice Chancellor
and Dean of The Graduate School

COMPARISON OF THE EFFECT OF INSTRUCTIONAL VERSUS INDUSTRY-SPECIFIC COMPUTER SIMULATION ON STUDENTS LEARNING IN A FRONT OFFICE MANAGEMENT COURSE

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Mohamed Abdul-Ghani

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DEDICATION

This dissertation is dedicated to my mother

"May God bless her kind soul".

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ABSTRACT

A survey was administered to assess the current and future state of academic computer use in teaching front office management courses, and to evaluate the degree of importance educators of these courses placed in various features of educational software. In addition, an instructional or industry-specific computer simulation program was integrated in a front office management course for undergraduate students. The purpose of this experiment was to determine if there were any differences in students' knowledge of the subject matter, attitude toward computers, and ability to transfer the learned skills to another industry-specific software, which could be attributed to the usage of either type of software.

Simulations via computers were considered as the most commonly used learning activities incorporated in teaching front office management courses. Results showed that students who initially used industry-specific simulation were able to transfer the learned skills more accurately than students who used instructional simulation. No significant differences were found between the change in knowledge of front office management and change of attitudes towards computers which could be attributed to students'

gender, prior computer experience, or prior hotel work experience.

It was concluded that there is a pressing need for objective information on the effectiveness of instructional or industry-specific software programs that are being used by hospitality educators. Educators can make an important contribution toward generating the required data base by conducting small evaluation studies of software that they are using. Although any single study is likely to have low statistical power and limited generality, the aggregate data acquired from many studies will be of great value in helping to identify the effectiveness of available software.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Preparing hospitality management students for entry into the job market is the major objective of hospitality education programs. This situation is becoming even more complicated by the computerization of manual operating systems in the hospitality industry (Melton & DeVeau, 1990, p. 585). Over the last decade, the growth of personal computers in the hotel industry has been remarkable (Chervenak, 1987).

Today's hospitality managers, and graduates who are seeking careers in the hospitality field, must have computer skills to be fully prepared for the professional duties they will undertake (Buergermeister & Van Loenen, 1992). The integration of computers as supplemental tools in teaching hospitality management concepts is an important area to which attention should continue to be focused (Miller, 1989).

A survey was conducted in 1993, of 110 corporate recruiters and alumni of the School of Hotel and Restaurant Management at Northern Arizona University (Casado, 1993).

The objectives were to identify and compare perceptions related to 22 professional courses most commonly offered in the curricula of leading hospitality institutions of higher education. A course in front office operations was ranked in sixth place in importance by recruiters and tenth place by alumni among the 22 professional courses.

Another study conducted by DeVeau and DeVeau (1990) reported that front office management courses are taught in almost all hospitality management programs in the country. It also was stated that many of the hospitality graduates that choose to go into hotel operations begin their career in the front office department.

The front office department in a hotel relates directly and originates, processes, and terminates the hotel's association with a specific guest. More often than not, the front office is called the "nucleus of the hotel". It originates instructions through every department in the hotel, especially on guest processing, and it also charges and bills every guest.

Over the past years there has been a dramatic change in the way hotel front offices operate. One of these major changes was due to the automation of the front office operations. This change created the need for using a new approach in teaching front office management courses. Having

hospitality students familiar with different front office computer applications and mastering the front office procedures via computers became major course objectives.

Bardi (1990) noted that hospitality educators should share the goal of educating students who will be able to compete in an industry which uses computers. It also was stated that hospitality educators who want to remain current on the status of computer applications in the hospitality industry will need empirical data collected from current users to base curriculum planning and development. It appears logical that if hospitality management education programs plan to continue to supply the industry with well-trained, employable graduates who can work independently with computer technology, educators have to continue efforts to increase and enhance computer-based instruction to meet the challenges of the rapid technological changes (Miller, 1989).

One of the problems encountered in teaching front office management courses is filling the performance gap of students which might exist due to their inability to visualize the front office operations and procedures in a practical form similar to real-life operations. Micro-computers could be a valid alternative that could be used to provide experience in using the knowledge and

information gained from instruction in the form of computer simulation. Computer simulation usage in coursework can be considered as a device to help students recall the information, present them with practical applications of all the phases of a hotel guest cycle, and help them understand in a way that is much more effective than using other methods.

One of the major challenges faced by hospitality educators is the evaluation and selection of the best software to be used in educational situations (Brewer, 1992). Part of the challenge is to decide what to evaluate, how the process should be carried out, and by whom (Heller, 1991); in most cases higher education faculty serve as their own computer products agents (Cummings, 1992).

Caffarella (1987) stated that anyone considering computer-based instruction should evaluate the software before adopting it. During this evaluation, the potential adopters should be certain that the program will teach what needs to be taught. Geisert and Futrell (1984) indicated that courseware evaluation generally includes the reviewing of program features, but typically fails to assess actual instructional outcomes achieved when the courseware is employed in the classroom. Actual tryout of the software with the intended users in the instructional setting was

recommended as an effective way to determine the effectiveness, efficiency, value, or worth of the materials (Russell & Blake, 1988).

Purpose of The Study

The objectives of this study are to:

1. assess the current and future state of academic computer use in teaching front office management courses in four-year hospitality programs,

2. assess the degree of importance instructors of this course place in various features of educational software used as a supplemental tool in teaching the course,

3. determine if there are any differences in the knowledge of students regarding front office operations and their attitude toward computers which could be attributed to the usage of two different types of computer software (Educational or Industry-specific software) in teaching a front office management courses,

4. determine if there are any differences in the ability of students to transfer the learned skills to another industry-specific software which could be attributed to the usage of two different types of computer software (Educational or Industry-specific software), and

5. determine if there are any differences in students' knowledge of the subject, attitude toward computers, or ability to transfer learned skills which could be attributed to students' gender, prior computer experience, prior hotel work experience, or learning style.

Importance of The Study

Results generated from this study will help in basing curriculum planning and development decisions regarding the integration of computers in teaching front office management courses in four-year undergraduate hospitality education programs. This study also will help instructional software developers and vendors realize the important software features needed by hospitality educators as guidelines for the design of instructional front office computer programs. It is hoped that the experimental part of this study will be of great value in helping hospitality educators to identify the effectiveness of two different types of available computerized front office simulations with regard to the knowledge, attitude, and skills gained from using these programs.

CHAPTER II

LITERATURE REVIEW

Hotel Industry and Automation

In the early 1950s, automation did not appear to be a promising venture for hospitality businesses. Kasavana and Cahill (1987) stated that during this decade, front office and back office activities were operated manually. Hotels typically accepted reservations for a six-month horizon and were unlikely to commit space further in the future. Procedures for confirming reservations, pre-registering guests, and forecasting rooms and revenues were not commonplace throughout the hotel industry.

In the early 1960s, the hotel industry had its first successful encounter with computer systems through using service bureau agencies. For the most part, these agencies focused on routinely scheduled back office functions, such as processing payroll data, and virtually ignored important front office activities.

During the same time period, computer system vendors recognized the potential for hotel automation. These vendors attempted to install in hotels the same computer systems which had been successful in industrial settings. However,

the information needs, procedures, and problems of hotel operations proved to be completely different from those of non-hospitality industries. The assumption that the sale of guest rooms was similar to inventory systems of non-hospitality businesses proved unrealistic and led to the decease of early attempts to computerize hotel operations. Computer specialists went away believing that installing a computer system in a hotel was an overwhelming, if not impossible, project. Hoteliers, on the other hand, were not upset since many feared that automating operations would depersonalize the services their businesses offered (Kasavana & Cahill, 1987).

The 1970s witnessed a revolution in computer system design and capability. Computer equipment became much less expensive, more compact, and easier to operate. Applications evolved into user-friendly packages which did not require sophisticated technical training demanded by earlier computer systems. The growing popularity of mini-computers offered a significantly more attractive data processing configuration for properties with between 250 and 750 rooms. In addition, the increased adaptability of micro-computers (Personal Computers) provided the stimulus for system vendors to begin approaching smaller properties. It was

during this decade that the hotel industry began to garner the benefits of automation (Kasavana & Cahill, 1987).

In the 1980s, technological developments refined the automated front office and back office computer applications and introduced the hotel industry to the era of fully integrated computer-based property management systems. During this decade, the number of automated properties increased, so did the demand for a fully-automated systems (Kasavana & Cahill, 1987).

Parker (1984) indicated that the most useful and commonly found software in the lodging industry was the property management system, which consisted of many individual programs taken together to make up a computer application. It was reported that there were 96 property management systems available to install (Chervenak, 1994).

Buchholz (1984) reported that computers were at work in hotels and motels everywhere, handling basic front- and back-office functions. Buchholz also stated that attention focused on the definition of the term "Property Management System" and articles and seminars made it a familiar subject. Property management system was defined as "a computer package consisting of hardware components and software programs specifically designed to perform accurately, efficiently, and rapidly those tasks in a hotel

that are both repetitive and time-consuming". It was indicated that all lodging properties, regardless of type or size, share one thing in common: the need to be profitable. The factors that contribute towards that goal may differ from one property to another. However, a computer's ability to handle tremendous volumes of data rapidly, accurately and efficiently, in contrast to a time-consuming and tedious manual operation, make it an invaluable tool for any size property.

The basic front office functions that property management systems can handle are reservations, registration, cashiering, night auditing, and room management. Most systems also offer guest history, travel agent modules, sales and marketing analysis, and packages and meal plans. In addition, some systems offer condominium management, membership club management, function room scheduling, banquet and catering sales, sports activities scheduling, and word processing.

The back office modules include not only accounts receivable, accounts payable, general ledger, and payroll, but also other attractive options such as budgeting and forecasting, inventory control, purchasing, physical property and asset management, and food and beverage management. Hotel-system developers continue to enhance

their products, find new areas for hotel applications programs, and use newer technology to make their systems faster, more reliable and more user-friendly. The ultimate property management system is a goal of most system developers (Buchholz, 1984).

Buchholz (1985) reported that property management systems have provided hotel operators with several advantages such as:

1. improved control over operations by providing timely and accurate reports,
2. improved guest service in the areas of reservations, registration, cashiering, and telephone service,
3. improved room sales by providing more accurate and up-to-date information on room status and room availability, and
4. improved profits as a result of accurate guest billing, reduction of personnel costs, and better methods of cost control.

With the reduction in the cost of hardware and software, costs associated with training the employees on the property management system had become a significant item. Morgan (1986) indicated that many hotel operators' attention became devoted to reducing the cost of training. It was mentioned that traditionally hotel-system property

management software suppliers were sending people to train the hotel staff. This, naturally, was very expensive, where travel expenses, living expenses, and salaries of the trainers, together with benefits and overheads were involved. After the trainers leave, it had been traditional for the hotel staff then to train new employees. Some of the progressive suppliers had developed computer-assisted instruction (CAI) programs to help hotel employees to learn about the system. Morgan stated that CAI programs provided by the suppliers had a lot of merits and expected it to be a trend in employees training that would save money for hotel operators.

In summary, it appeared that less than ten years ago, it was rare that a hotel had a computerized property management system. Today, it is the rare hotel, whether large or small, upscale or budget, that does not have one. Property management systems have reached about the same level of acceptability as guest-room television sets. Clearly, property management system is no longer a luxury but a necessity. In an operational sense, a well-designed, user-friendly property management system increases efficiency by reducing clerical work done by hand, improves accuracy, speeds up checking in and out, and through the use of guest history data, enhances personal attention to

guests. All this adds up to satisfied guests, happier employees, and profitable operation (Breen, 1990). The question is no longer whether a hotel should have a property management system, but which system of those available systems to install (Chervenak, 1994).

Experts agree that property management system hardware and software are getting progressively cheaper and easier to use, even as software packages offer more and more functions (Breen, 1990). By now, the benefits of computers are well known to hotel operators and employees. Increased revenue brought about by improved efficiencies, both in the front and the back of the house, have made computers commonplace throughout the industry (Follin, 1990).

However, it should be realized that hospitality is still a people business. Computers cannot greet, check-in, or seat guests, and no guest will be impressed with the hospitality at a property if his or her first contact is with a front desk clerk whose eyes are glued to a computer screen. Yet, properly used, near at hand but invisible to the guest, computers are valuable tool for the industry (Bieber, 1990).

Education and Technology

Education has conventionally made wide use of the products and processes of technology from the chalkboard to the computer. A great deal continues to be written on the subject of instructional technology or the application of technology to teaching and learning. Knapper (1988) stated that a number of technologies had been used in university teaching and appeared to have potential for the near future in higher education settings, including such innovations as cable television, electronic blackboard, satellites, and of course a wide range of applications of computers, especially micro-computers. In the 1960s, tremendous efforts were made to develop instructional systems mediated by computers.

Poppen and Poppen (1988) stated that the use of computers to assist in the delivery of information should be termed "computer-assisted instruction (CAI)". CAI refers to the use of the computer and software programs to assist in the delivery of information to the student. Many types of software programs can deliver information, these include tutorials, drill and practice tasks, simulations, problem solving tasks, and games. The earliest types of CAI involved drill and practice, and tutorial programs, both of which employed a simple strategy of presenting information, posing a question that tests student mastery or comprehension, and

then proceeding to offer further instruction depending on the response.

A quite different strategy introduced later, used the computer as a way of simulating a particular situation, environment, or problem. This approach was used in most computer games and simulations. Knapper (1988) indicated that computer simulations had particular appeal in higher education settings, where it was often desirable to replicate in the classroom situations that would be impossible or difficult for students to experience first hand, and the popularity of educational simulations has increased as micro-computers have become more sophisticated. But, it was noted that computer simulations do not generally serve as a substitute for the course instructor, who is still left firmly in control of the teaching situation.

It should be noted that the objective of using computers in teaching front office management courses has a unique purpose that may differ from using CAI in its general definition presented in this literature review. CAI referred to the use of computer software to assist in the delivery of information to the students. Computer software used in front office management courses are considered as a tool students must use to perform specific procedures related to a unique hotel environment.

Many advantages that have been claimed for CAI include that it:

1. is an active form of learning that can be highly engaging and motivating,
2. is highly structured, tailored to individual learner's needs, non-threatening, and self-paced,
3. encourages self-management of learning and self-evaluation,
4. allows repeated practice without instructor fatigue,
5. provides constant feedback to learners on their success, and
6. can keep detailed records of student progress and can expose the learner to situations and experiences that normally are not possible in a traditional classroom (Knapper, 1988).

Some critics have cited disadvantages to CAI, such as it may be too individualized and fail to take into account the important social context of the conventional college classroom (Knapper, 1988). In addition it had been expressed that the total substitution of simulated experiences for the "real" situation may make it difficult for students to deal with the idiosyncrasies and unpredictable nature of comparable events in the external world.

Evaluating and Selecting Computer Software for Instruction

Micro-computers have had a remarkable impact in primary, secondary, and higher education. Almost all subject areas have been affected by applications of micro-computer technology. Statistics showed that since 1983 the number of computers in education has quadrupled and the number of students using computers and teachers supervising those students have tripled (Mandell & Mandell, 1989).

The term Computer-Based Instruction (CBI) is used to encompass all uses of the computer as an instructional device. Computer-based instruction includes concepts such as Computer-Assisted Instruction (CAI) and Computer-Based Training (CBT) (Caffarella, 1987).

The success of integrating computers in the educational process is largely dependent on the quality of the software available (Ricardo, 1984). Instructional software, like all other educational materials, should be evaluated before it is used in the classroom. In some states, such as California and Texas, there is state-wide control over pre-college education materials. Between these two extremes there exists all levels and forms of evaluation and selection criteria and practice (Heller, 1991).

Trainers, educators, and human resource managers encounter a significant problem when faced with a decision

regarding the choice of appropriate CBT software, or courseware for their trainees, students, or personnel (Pritchar et al., 1989). A growing amount of courseware is available and advertised for a wide variety of topic areas but little information is available to help in selecting among them. Although many publications and professional organizations review the software packages for their clientele and a growing number of vendors allow evaluation copies prior to purchase, most reviews are highly subjective and cannot be used to compare or rank packages of similar content against each other (Roblyer, 1985). It was recommended that courseware should be selected carefully via evaluation standards that meet specified needs and that objectively compare packages against each other.

Caffarella (1987) stressed that anyone considering using computer-based instruction should evaluate software before adopting it. During this evaluation the potential adopters should be certain that the program will teach what needs to be taught.

Taylor (1987) recommended five guidelines for quick selection of courseware. The guidelines include appraisal of objectives' adequacy, feedback appropriateness, control method, content accuracy, and pedagogical compatibility. Even though these guidelines were recommended, a complete

evaluation process, including student use, should be considered when determining the final selection of courseware.

Research efforts relative to CAI have typically focused on three broad areas, including efficacy, cost, and attitudes of students and instructors. In terms of efficacy, CAI is sometimes more effective than traditional instruction in terms of student performance, but those differences between the two approaches were frequently small. In most cases, however, CAI decreased substantially the amount of time required for students to complete instruction (Skinner, 1988).

The effectiveness of using computers in higher education was raised by several researchers and still is under investigation in varied discipline areas. A great deal has been reported about the relative effectiveness of many of the innovations, generally in comparison to traditional classroom instruction. Results were equivocal, largely because it was so difficult to rule out extraneous variables and to pin down just what was being compared and according to what criteria (Knapper, 1988). Kulik et al. (1980) reviewed 59 studies relating to computer-based college teaching. On the basis of the meta-analysis of these studies, it was concluded that CAI made small but

significant differences in the course achievement of college students.

Magidson (1978) in a review of the CAI literature, reported that 55% of the studies surveyed reported no statistically significant differences, while the remaining 45% found CAI was more effective. Kulik et al. (1983) used a meta-analysis design and found that with 39 of 48 studies reviewed, CAI students received higher scores than students receiving traditional instruction. However, only in 23 of these studies were the results statistically significant.

One of the most agreed upon results was that it was difficult to obtain an accurate estimate of the prevalence of technology-based approaches in comparison to traditional classroom teaching in colleges and universities. There clearly was extensive use of technological aids in instruction, but technological substitutes for human teachers appeared to be comparatively rare (Knapper, 1988).

Lewis (1985) conducted a series of interviews with colleges and universities faculty inquiring about the types of instructional problems they faced and then attempted to examine how technology might provide an answer. Interestingly, there was by no means a perfect match between the perceived educational problems and the most common solutions offered in existing educational software. For

example, the majority of available CAI material is highly didactic and focuses on mastery of content, whereas a commonly cited educational need was identified as teaching learning processes, especially ones that might be transferred to the "real world".

Geisert and Futrell (1984) indicated that courseware evaluation generally includes the reviewing of program features, but typically fails to assess actual instructional outcomes achieved when the courseware is employed in the classroom. The researchers proposed a courseware evaluation model, that can be applied during a design and development process or used when making a decision whether or not to purchase a program produced by someone else. The evaluation model has a two-phase process. The first phase involves evaluating the design features of the courseware. The second phase consists of conducting an empirical tryout of the courseware to measure its actual instructional effectiveness. Geisert and Futrell (1984) noted that the criteria utilized in a courseware review process should be thought of as indicators, not proof, of courseware quality. It was indicated that an evaluation procedure consisting solely of a review of objectives, measures, lesson presentation, and lesson content is incomplete. No matter how well-designed a computer program intended for classroom

use may be judged to be, it still may not "work" in the classroom. Real evidence for the effectiveness of CAI is to be obtained only one way through actual tryout of the materials with the intended users in the instructional setting.

In 1984, a survey was conducted by the National Association for Educational Computing which solicited from teachers, administrators, and educational consultants involved in the field of educational computing a "wish list" (Ricardo, 1984). This list included features most admired in the area of software. The teachers stated that the availability of field test data was an important part of the documentation. Because field testing is a routine procedure in the development of other curriculum materials, teachers were accustomed to having this information available when they make choices of instructional materials. As chief architects of instruction, teachers are careful to plan classroom experiences and activities that help to achieve their objectives. It is impossible for them to make judgments about how well a piece of software will fit those objectives unless they have run the program.

One of the more sophisticated and comprehensive approaches to the evaluation of educational software is through a form developed by the Educational Products

Information Exchange (EPIE) Institute (Muller, 1985). The form examines many features of software product, including program content, program intents, program appropriateness for intended users, clarity, fairness and accuracy, graphics, audio, support materials, documentation, user control, feedback, and other aspects. It was indicated that the EPIE form and other numerous forms call for the evaluator's judgments of a program's effectiveness. While some of these forms provide for some evaluator observations of student performance, no empirical methods of analyzing program effects are prescribed. Muller (1985) emphasized that systematic data-gathering procedures need to be planned and conducted, using direct performance data, in order to objectively and accurately determine the effectiveness of a program on student learning.

Coburn et al. (1982) suggested that there are four broad areas of concern when evaluating a program: program content, pedagogy, program operation, and student outcome. The area of student outcome involves the degree to which students learn what the program intends to teach and the effectiveness of the program compared to non-computer-assisted instruction or other similar programs.

Russell and Blake (1988) clarified the distinctions between formative and summative evaluation as they apply to

instructional products (materials) and people (learners). Various terms for these four distinct types of evaluation were mentioned, and the characteristics were described through examples from a number of instructional settings. The researchers indicated that summative evaluation of instructional materials is done after materials have been developed and under conditions in which they will actually be used. The primary purpose of the summative evaluation is to determine how much the students actually learned from the materials, such as the effectiveness, efficiency, value, or worth of the materials. In order to avoid bias, individuals external to the developmental team should perform the test.

During summative evaluation of materials, students are pre-tested to determine their starting point, materials are used as they would be under actual instructional conditions, then a post-test is administered. Other forms of evaluation, including attitude measures and questionnaires may be used. In order to be a valid measurement, materials must be in final form and learners should be representative of the intended student population. It is assumed in this type of evaluation that if a majority of the students do not learn, it is the fault of the materials.

Reiser and Dick (1990) stated that one failing of the evaluation process is its subjective nature. The authors

proposed a phased instructional software evaluation model which is based on the extent to which students learn the skill the software is intended to teach (Figure 1). If, after a pre-screen of the general characteristics, the reviewer is still interested in the software, learning objectives are identified and test items are created to establish a student's attainment of those objectives.

In the next phase of the process field trials are performed. If the one-on-one trials with students from representative populations indicate the software is worthwhile, small groups in the classroom or individuals who will be expected to use the software review it. In both cases the students are observed using the software and questioned about their reactions.

The next-to-last step in the evaluation process is administering a retention test to the students who participated in the small group. This test should be administered two weeks following completion of the instruction and should be the same as, or an alternate form of, the original pretest. The final step is the evaluation process which requires the evaluator to review the information that has been collected during the process and prepare a brief evaluation report.

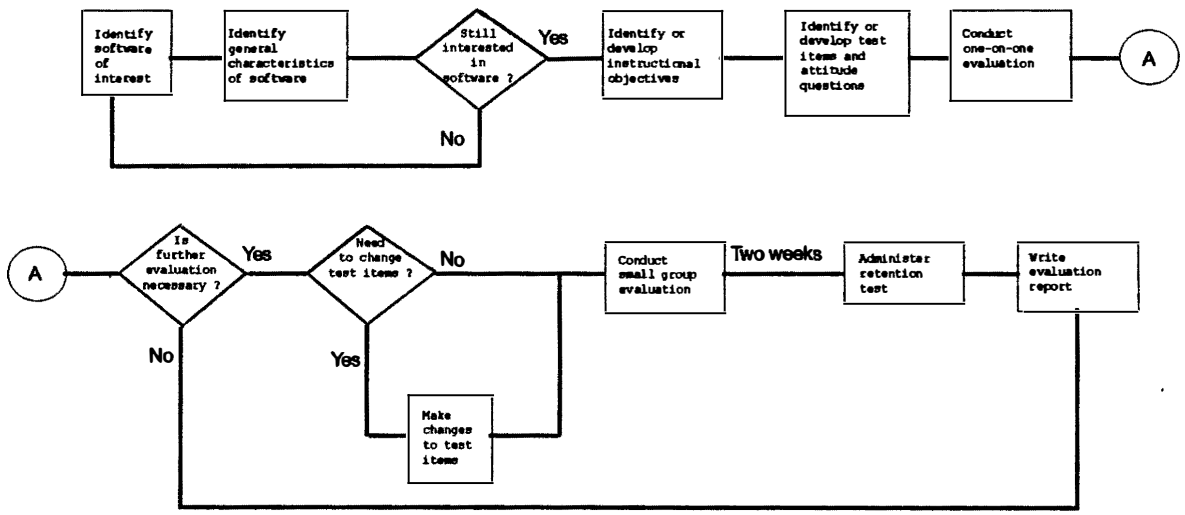

Figure 1. Reiser & Dick software evaluation model

In 1992, two field evaluations were conducted to validate the usefulness of the Reiser and Dick model and identify ways to increase its efficiency as a software evaluation tool (Gill et al., 1992). It was found that student performance data do not necessarily confirm high ratings received on the basis of subjective reviews. It was reported that educators were more confident about how a particular software package worked with their students and the implementation of the model provided educators with additional insights about the software and ideas about how to use it in their curriculum.

Software Usage in Hospitality Education

Brewer (1992) defined the types of software which are typically used by hospitality educators into three main categories: instructional, general application, and industry-specific. Instructional or educational software is created with a specific educational objective in mind. This software might introduce information to the student in the form of a tutorial, present a simulation, drill the student on a knowledge base in a specific content area, allow the student to play a game to test or reinforce the student's knowledge of a subject area, or present a problem-solving

scenario that allows the student to explore a number of "what if" possibilities (Brewer, 1992).

General application software involves the educational use of programs such as Lotus 1-2-3, WordPerfect, dBase IV, or business or general-use products available on the market. This type of software is used as a problem for a course assignment that has been created by the instructor, such as creating a financial forecast or an inventory system (Brewer, 1992).

Industry-specific software includes information systems, point-of-sale software, interfaces, property management systems, or menu management programs. These industry-specific software can be used as case studies, simulations, problem-solving tools, or simply to demonstrate the advantages and limitations of the software to the student (Brewer, 1992).

Sawyer (1985) indicated that because more food service operations are adopting comprehensive computer software, food service education programs should make certain their students understand how to use industry-specific software. Teaching the applications of comprehensive software will extend students' management capabilities, learn how to deal with information overload, and learn how to screen the important information from the reams of materials on a

computer printout. It was recommended that the application of these comprehensive software should be taught in the classroom, and food service management education programs must start planning for such type of instructions.

Kasavana (1992) noted that hospitality management educators have struggled to modify generic software or adapt industry-specific software as a means of bringing hospitality information systems to the classroom. It was recommended that specially designed computer-based courseware (instructional or educational software) can enhance learning while extending the boundaries of the traditional hospitality classroom. The relevance of instructional software to the hospitality curriculum was discussed. It was concluded that few inferences can be based upon classroom trials to date since hospitality educational software is still in its infancy process of integration. However, courseware can significantly contribute to the efficiency in the teaching/learning process.

Brewer (1992) stated that the use of general application software or industry-specific packages enables students to gain insight into the computerized world of hospitality management. It was indicated that many challenges exist when these software packages are used in an educational setting.

Brewer (1992) proposed two forms to be used in the selection of software for hospitality management curricula. These two forms were intended to be used as tools to aid educators in the evaluation of software and assist them in the determination of the most effective software for a specific educational environment. The criteria used in the forms were technical requirement, instructional considerations, technical qualities evaluation, and content evaluation. It was recommended that hospitality educators need to select software thoughtfully to meet their specific instructional needs since the number of software packages and instructional programs available for use is considerable.

Hospitality Education and Computers

Application of computer technology has been identified as a strategic issue for hospitality education programs (Pavesic, 1984). Evans and Mathews (1985) conducted a general study to determine the extent of computer-based education in 93 four-year and 175 two-year hotel and restaurant programs across the United States. In addition, the researchers sought to identify the major variables that may be impacting the use of computers in these programs. The findings suggested that both two-year and four-year programs

had limited computer-based education at the time of the study. The researchers recommended that two-year and four-year hotel and restaurant education programs need to take a serious look at the apparently low level of CAI in their programs. It was stated that if current computer instructional practice continue, hotel and restaurant education programs will be far behind the industry skill levels and emerging industry computer technology.

Miller (1989) conducted a study to determine the extent to which computers were being utilized as a tool in teaching food service management concepts in 78 four-year undergraduate hospitality programs. Results of the study indicated that concepts most often taught with CAI were budgeting, accounting, menu and recipe analysis, and inventory control. It was reported that 98% of hospitality educators needed to increase the utilization of computers in teaching food service management concepts, and 96% of them needed additional training in the use of computer as an instructional tool.

Dennington (1989) conducted a survey for the 108 affiliated institutions of the Council on Restaurant, Hotel, and Institutional Education in the United States to determine how computers were integrated into the courses required for degrees in hotel and food service management at

four-year institutions. The aim of the study was to assist the educational establishment, in conjunction with the hospitality industry, to better able determine whether the level of computer integration in hotel and food service management education was appropriate for the needs of the graduates entering the workplace. Results of the study indicated that computers were used in 34% of the undergraduate courses and 48% of the graduate courses with a planned increase to 54% of the undergraduate courses and 75% of the graduate courses. The attitudes of the hospitality educators showed that most of them did not agree that computer budgets, use of computers in the curriculum, software availability, or hardware availability were adequate.

Schrock and Schrock (1991) conducted a study to determine the importance of computer education in hotel and restaurant programs in institutions of higher education throughout the United States. A computer use questionnaire was mailed to 348 educators who were members of the Council on Hotel, Restaurant, and Institutional Education (CHRIE). One hundred twenty-three (35.3%) educators responded. Results of the study indicated that the majority (81.8%) of respondents felt that having a course in computer applications relevant to the hospitality industry was very

important. Almost half (45.6%) of respondents believed that computer courses offered in their programs met the needs of the industry, twenty-six (27.1%) felt that it met the needs somewhat and another 26 respondents thought that it did not.

Jaffe (1989) conducted a study to determine the effectiveness of using computer-assisted instruction (CAI) as an instructional technique as compared to a traditional printed instruction (PI) method of teaching food purchasing course. Fifty-seven junior and senior hospitality management students participated in the study. All students enrolled in this course met for a 50-minute lecture period twice per week. Thirty students were randomly assigned to the CAI group which met in the computer lab once a week for two-hour period. The remaining 27 students were assigned to the PI group which received a printed jacket containing identical information as students in the CAI group and had no access to any computer-based lessons. All students completed three pretests and three posttests. One-way analysis of covariance revealed that no significant differences existed between the two groups for each of the gain scores. The researcher concluded that although statistical analyses did not reveal any significant difference between the two groups, students in the CAI group showed learning gain equal to that of students in the printed instruction group.

Kluge (1988) conducted a study to compare the effectiveness of different instructional delivery methods, manual-based training (MBT) or instructor-based training (IBT), used to train operators of computer systems. Subjects of this study were 72 undergraduate students enrolled in one or more courses in the Hotel, Restaurant and Tourism Management Program at Oregon State University. It was reported that students trained using IBT took significantly longer to train than did students using MBT. After being trained, the MBT group took significantly longer to complete a series of problems than did subjects of IBT group. Correlations between instructional delivery method and performance time were partially explained by the individual characteristic of field-dependence/independence. Characteristics of anxiety, prior computer experience, sex, and age did not significantly relate to the training delivery method or performance of the students.

In summary, it appeared that computers are being utilized as a tool in teaching hospitality management content in most four-year hospitality programs with an increase in computer-assisted instruction in all major content areas (Evans & Mathews, 1985). The number and type of software packages and instructional programs available for use in hospitality education is considerable, and

educators need to thoughtfully evaluate and select software to meet their specific instructional needs (Brewer, 1992), especially, since most higher education faculty serve as their own computer products agents (Cummings, 1992).

The software evaluation process generally includes the reviewing of program features, but typically fails to assess the actual instructional outcomes achieved when the software is employed in the classroom setting (Geisert & Futrell, 1984). Field testing and trying out the software with the intended users in the instructional setting was recommended in many studies (Coburn et al., 1982; Geisert & Futrell, 1984; Muller, 1985; Roblyer, 1985; Caffarella, 1987; Taylor, 1987; Pritchard et al., 1989; Reiser & Dick, 1990; and Heller, 1991). Empirical tryout of software by current users can help educators determine the effectiveness, efficiency, value, or worth of the materials. Sharing the results of such studies would be of a great value for educators in basing their curriculum planning and development decisions, and being able to continue supplying the hospitality industry with fully prepared graduates who will be well-equipped with the needed knowledge, skills, and attitudes to undertake their professional responsibilities in today's competitive job market.

It was apparent that the increasing use of computers as tools for learning reflect the growing reliance on technology to accomplish a variety of tasks, as society moves from an industrial era into an information era. Computers were initially developed to help solve tasks that were burdensome, complex, and time-consuming. Originally, these involved processing numbers. More recently, the impetus has shifted to include manipulation of verbal information.

However, some educators have referred to a need for computer literacy to supplement the roster of desirable skills that students should acquire before graduation. Whether or not computer literacy is a meaningful concept and, if so, what skills and knowledge it might comprise, the fact remains that appropriate use of computers will be an important requirement for many professions in the future, such as the hospitality industry. Thus, it is not surprising that many colleges and universities are struggling to find the best ways of exposing students to a range of relevant computer applications.

CHAPTER III

STUDY 1

Methodology

This study involved the administration of a survey to assess the current and future state of academic computer use in teaching front office management courses in four-year undergraduate hospitality programs. In addition, the survey attempted to evaluate the degree of importance educators of this course placed in various features of instructional software used as a supplemental tool in teaching the course.

Survey Subjects

Subjects for the survey were the population of the instructors of front office management courses in the 143 four-year hospitality management programs granting baccalaureate degrees with Hotel and Lodging Management concentration. These programs are listed in "A Guide to College Programs in Hospitality and Tourism", a directory of colleges and universities members of the Council of Hotel,

Restaurant and Institutional Education (CHRIE) published in 1993.

Survey Instrument

A three-section questionnaire was designed by the researcher (Appendix A). The first section intended to assess the current and future state of academic computer use in teaching front office management courses in four-year undergraduate hospitality programs. The second section attempted to evaluate the degree of interest educators of front office management courses had in various features of instructional software used as a supplemental tool in teaching this course.

The questionnaire asked the respondents to provide the following information: status of the course (mandatory or elective), number of credit hours, number of sections the course was taught per academic year, and the average number of students enrolled in the course per academic year. The first section of the questionnaire included eight questions that assessed the current state of computer usage in teaching front office management courses, future state of computer usage in teaching the course, learning activities integrated with computers, types of software used, front office computer applications used, procedures used to

prepare and train students for using computers, procedures used to select and evaluate software packages for classroom use, and the types of hardware used by students.

Items included in the second section consisted of thirty statements which represented various features of instructional software based on the criteria developed by Truett and Gillespie (1984) for selection and/or evaluation of instructional software. These criteria were categorized into five major types of features: documentation, educational value and instructional objectives, content, user interaction, and technical considerations.

Instructors of front office management courses were asked to read the feature statements included within each category carefully and assign a rating based on the degree of importance of each feature. A five-level scale was devised to indicate the degree of importance respondents attach to each item. The design of this section was based on a survey developed and conducted by Ricardo (1984) to solicit from teachers, administrators, and educational consultants involved in the field of educational computing, a "wish list" of features most admired in the area of software.

The third section requested the respondents to provide demographic characteristics of their hospitality programs

and themselves. Information requested included the major areas of concentration, the number of undergraduate students enrolled in these programs, the lodging and teaching experience of the instructors, their perceptions about their computer experience, and the academic rank of the instructors.

Survey Procedure

The survey was pilot tested by 10 faculty members of hospitality programs who were listed in the CHRIE directory. The objectives of the pilot testing were to assess the face validity of the instrument, verify the adequacy of the structure of the questionnaire, determine the approximate time to complete the survey, and determine if the directions for completing the instrument were clear and meaningful.

The questionnaire was mailed along with a cover letter explaining the purpose of the study, convincing the respondents of the usefulness of the study, how important their participation was to the success of the study, and assuring confidentiality (Appendix B). The cover letter was printed on letterhead stationery of the University of Tennessee, College of Human Ecology, Division of Hotel and Restaurant Administration, and addressed to the directors of hospitality programs as indicated in the CHRIE directory.

Directors of programs were asked to hand the whole mailing package to the instructors of front office management courses in their programs. These instructors were requested to complete the survey and mail it back in a stamped, self-addressed envelope.

After three weeks of the original mailing date of the survey, a letter and replacement questionnaire were sent only to non-respondents. Nearly the same in appearance as the original mailing, it had a shorter cover letter that informed non-respondents that their questionnaire has not been received, and appealed for its return.

Survey Data Analysis

Responses were coded and entered into an IBM 3081 mainframe computer at the University of Tennessee Computing Center. Descriptive statistics techniques were used to analyze the items of the survey (SAS, 1987). Frequencies were calculated for items in the first section of the questionnaire. Frequencies, means, and standard deviations were calculated for each item in the second section. Results were presented with regard to the characteristics of the hospitality program and the instructor.

Results and Discussion

Survey Demographics

Of the 143 institutions contacted, 65 (45%) responded to the first mailing and 20 (14%) responded to the second mailing. Of the 85 (59% response rate) returned questionnaires, 12 (8%) institutions indicated that a front office management course was not offered in their academic programs, while 73 (51%) of the institutions offered front office management courses and returned completed questionnaires.

A portion of the questionnaire assessed demographic characteristics of the hospitality programs and the instructors of the front office management courses. The front office management courses were required in 45 (61.6%) institutions as mandatory courses in their programs, while 14 (19.2%) institutions indicated that front office management courses were offered as electives in their programs. The remainder of the respondents did not indicate the status of front office management courses within their academic curricula.

The majority of respondents (48 out of 57 respondents) indicated that the front office management course offered in their program counted for 3 credit hours. Thirty

institutions offered this course once per academic year, 20 institutions offered the course twice per academic year, 3 institutions offered the course 3 times per academic year, and 1 institution offered the course 4 times per academic year.

Nine institutions had only one area of concentration while 64 (88%) had different combinations of more than one area of concentration (Table 1). Six institutions indicated other areas of concentration included in their combinations of areas. These areas were Business, International Hotel Management, Resort/Convention Centers, Convention/Meeting Planning, and Leisure Management.

Table 1 illustrated the distribution of the number of undergraduate students enrolled in the surveyed hospitality programs. Seventeen (23.3%) institutions had less than 100 undergraduate students enrolled, 28 (38.4%) institutions had between 100 and 300 students, 17 (23.3%) had between 301 and 600 students, and 11 (15.0%) had more than 600 students enrolled in their hospitality programs.

The number of years instructors had in the lodging industry was presented in Table 1. Six (8.2%) instructors had less than one year of lodging industry experience, 9 (12.3%) instructors had between 1 and 3 years of industry experience, 9 (12.3%) instructors had between 4 and 6 years

Table 1. Demographic characteristics of the surveyed institutions and instructors of front office management courses.

Characteristics	Frequency	Percentage
Areas of concentration[a,b]		
Food Service Management	60	82.0
Hotel Management	70	96.0
Tourism Management	36	49.0
Institutional Management	20	27.0
Other	6	8.0
Undergraduate enrollment[a]		
Less than 100	17	23.3
101 - 300	28	38.4
301 - 600	17	23.3
More than 600	11	15.0
Instructor lodging experience[a]		
Less than 1 year	6	8.2
1 - 3 years	9	12.3
4 - 6 years	9	12.3
More than 6 years	49	67.1
Instructor teaching experience[a]		
Less than 1 year	4	5.5
2 - 5 years	20	27.4
6 - 9 years	18	24.7
More than 9 years	31	42.5
Instructor perceptions of their computer experience[a]		
Computer Novice	10	13.7
Computer Modest	45	61.6
Computer Expert	18	24.7
Academic Rank of instructors[a]		
Graduate Teaching Assistant	2	2.7
Instructor	15	20.5
Assistant Professor	24	32.9
Associate Professor	18	24.7
Professor	10	13.7
Other	4	5.5
Average number of students enrolled in front office management courses[c]		
Less than 50 students	40	63.5
51 - 100 students	9	14.2
101 - 150 students	4	6.3
151 - 200 students	4	6.3
201 - 250 students	3	4.8
More than 250 students	3	4.8

[a]n=73
[b]More than one area could have been chosen by participants.
[c]n=63

of industry experience, and 49 (67.1%) instructors had more than 6 years of lodging industry experience. It was obvious that most instructors have had a considerable amount of practical experience in the area of lodging operations. This type of lodging experience should aid the instructor in teaching this kind of operational course.

Table 1 indicated the teaching experience of the instructors of front office management courses. Four instructors (5.5%) had less than 2 years of teaching, 20 (27.4%) instructors had between 2 and 5 years, 18 (24.7%) instructors had between 6 and 9 years, and 31 (42.5%) instructors had more than 9 years of teaching experience. It was apparent that the majority of instructors surveyed have had more than 6 years of teaching experience.

Table 1 indicated how the front office management instructors described their computer experience. Ten (13.7%) instructors perceived themselves as novice, 45 (61.6%) instructors described themselves as modest, and 18 (24.7%) instructors considered themselves as experts regarding computer experience. The results may explain the predisposition of the instructors surveyed towards integrating computers as tools in teaching front office management.

Of the individuals surveyed, two (2.7%) respondents were graduate teaching assistants, 15 (20.5%) respondents were categorized as instructors, 24 (32.9%) respondents were assistant professors, 18 (24.7%) respondents were associate professors, and 10 (13.7%) respondents were professors. Four (5.5%) of the respondents had other academic ranks such as lecturers or principal lecturers.

Table 1 illustrated the distribution of the average number of students enrolled in the front office management course per academic year. Forty (63.5 %) institutions had less than 50 students enrolled in the front office management course, 9 (14.2 %) institutions had between 51 and 100 students enrolled, 4 (6.3 %) institutions had between 101 and 150 students enrolled, 4 (6.3 %) institutions had between 151 and 200 students enrolled, 3 (4.8 %) institutions had between 201 and 250 students enrolled, and 3 (4.8 %) institutions had over 251 students enrolled in the front office management course offered per academic year.

It was clear that a large portion of the institutions surveyed had less than 50 students enrolled in the front office management courses per academic year. This rate of enrollment may be considered suitable for computers

integration into classroom settings and allow active interactions among instructors and students.

Computer Usage in Teaching Front Office Management

In order to assess the current and future state of academic usage of computers in teaching front office management courses, six questions were asked. Respondents were required to state what they were doing at the time of the survey (current) and what they were planning to do in the future regarding the same question. Throughout this discussion, instructional software referred to as tutorial, simulation, drill and practice, and games, whereas industry-specific software referred to as point of sale, and property management systems. Of 73 instructors surveyed, 52 (71 %) indicated that computers were used as supplemental tools in teaching front office management courses. Twenty-one instructors (29 %) indicated that front office management courses were taught without any computer applications.

On the other hand, all respondents (100 %) indicated that computers will be used in their courses in the future. This means that instructors who were using computers will continue using them, and instructor who were not using computers will seek ways to use them in the future. This

result indicated that front office instructors have a positive attitude towards integrating computers with teaching this course, and their awareness of the importance of providing their students with relevant computerized front office procedures.

Figure 2 indicated the distribution of learning activities in which computers were used to teach front office management courses. It also showed the learning activities that the instructors planned to use in the future. Respondents were allowed to select more than one learning activity in order to answer that question. Results showed that respondents used combinations of learning activities and there was not a single learning activity that had been used solely by any respondent. It appeared that simulations (58%), demonstrations (47%), and drill and practice (42%) were being used by the majority of respondents, while independent study projects (38%), out-of-class group projects (36%), and lectures (34%) were being used by some respondents. The least used learning activities were games (5%) and reading assignments (18%).

Figure 2 indicated not much of a change in the learning activities respondents planned to incorporate in the future when compared to current usage. Out-of-class group projects (48%), simulations (47%), independent study projects (45%),

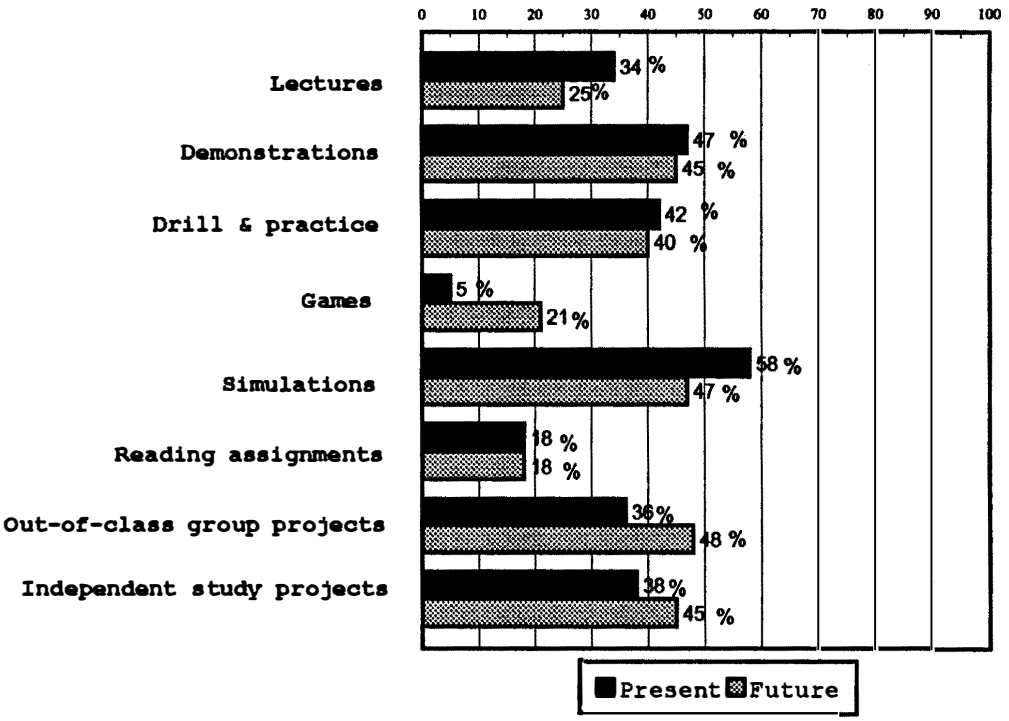

Figure 2. Learning activities in which computers were used or will be used in teaching front office management courses.

demonstrations (45%), drill and practice (40%), lectures (25%), and reading assignments (18%) had nearly the same level of proposed usage as what was used currently by respondents. This might indicate the unwillingness of instructors to change the status quo of using computers in their classrooms.

Games (21%) were the only learning activity that showed more usage in the future. The use of games usually involves competition among individual students or student teams, but it also can be a competition with oneself over time. Games emphasize conceptual skills and need not involve any technical computer skills. Games are designed to use already known concepts in a play or game situation and winning should require demonstration of concept mastery. The increase in using computer games in the future indicated that games may be gaining a wider popularity as a learning tool in hospitality management classrooms.

Figure 3 illustrated the types of computer software being used and will be used by instructors to teach front office management course. Instructional software were used by 40 (55%) of the respondents, while industry-specific software were used by 32 (44%) of the respondents. General application software were used by 27 (37%) of the respondents.

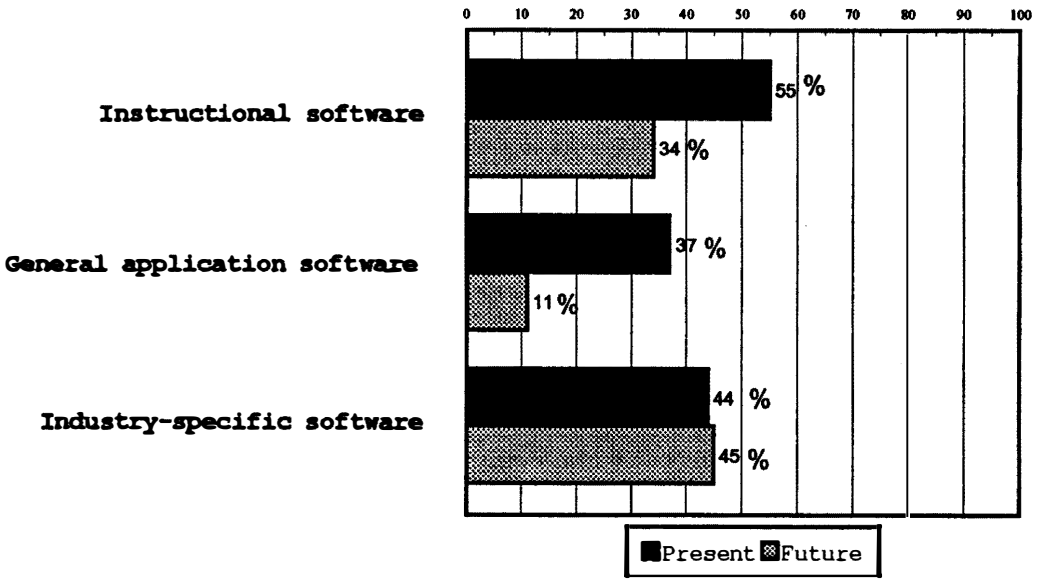

Figure 3. Types of software that were used or will be used in teaching front office management courses.

It appeared that nearly half of the respondents used a combination of instructional and industry-specific software to teach the course. The instructors might have used the industry-specific software for demonstrations and the instructional software for practices. Some respondents indicated that general application software were used for budget planning and control.

Figure 3 showed that industry-specific software will be used by 33 (45%) of respondents in the future, while 25 (34%) respondents will use instructional software. General application software will be used by only 8 (11%) of respondents. A logical reason for the decline in using general application software in teaching front office management courses in the future would be that students come in better prepared and more familiar with at least one or two of the general application software. This was indicated when the investigator collected information about prior computer experience in the experimental part of this study. Thirty-eight students out of 52 (73.1 %) indicated that they had prior experience with at least one general application software.

The consistency in usage of industry-specific software and the decline in usage of instructional software may be attributed to the fact that instructors are dissatisfied

with the available instructional software and may look for more realistic activities to be conducted in the classroom to show exactly what is being done in real life hotel operations. This result was parallel to what Pederson and Pederson (1993) found after conducting a qualitative survey. Students indicated that they wanted to use actual computer simulations and that the instructional simulations they were using were simple and not representative of reality. The students requested more realistic computer simulations which they might expect in the industry.

Figure 4 indicated the types of front office applications used and will be used by instructors to teach front office management courses. Fifty-one (70%) of respondents were using front office procedures. Twenty-one (29%) of respondents were using yield management applications, while 16 (22%) were using budget planning and control applications and 12 (16%) were using housekeeping operations applications.

Results showed that the usage of yield management applications will increase. Thirty-seven (51%) of respondents indicated their willingness to use yield management applications in the future. More respondents (30%) are willing to use budget planning and control applications in the future. The increase in using yield

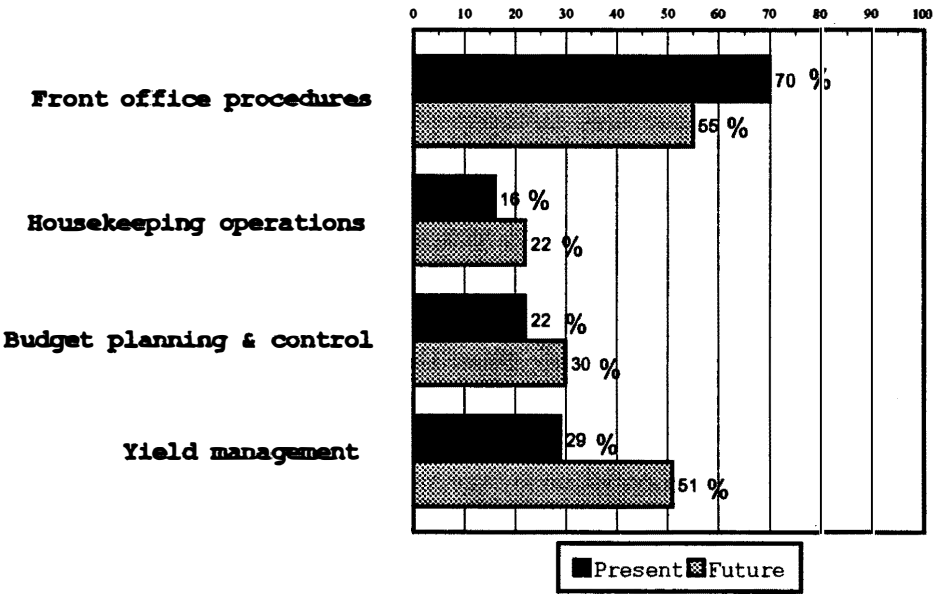

Figure 4. Types of computer applications that were used or will be used in teaching front office management courses.

management applications may be due to increasing importance and wide usage of yield management practices by the hotel industry due to the highly competitive market.

Housekeeping operations represented a smaller usage by respondents at the present and in the future. This might be due to the fact that many hospitality management programs offer housekeeping operations in a separate course within their curricula.

Table 2 indicated the procedures used by instructors to prepare their students for using computers in the front office management course. In-class instruction and a pre-requisite course required were the most used procedures by respondents. Self-study materials and the availability of a computer laboratory assistant were the second most used procedures. Only 3 respondents indicated they never used any procedures to prepare their students to use computers in the course.

Thirty-six percent of respondents will use in-class instruction to prepare their students in the future. Forty percent and 33% of respondents will use self-study materials and computer laboratory assistants to prepare their students. Nineteen percent of respondents will require a pre-requisite course to be taken before enrolling into the front office management course. This sharp decrease in the

Table 2. Current and future procedures used to prepare students for using computers in the front office management courses.

Procedures	Current, %[a,b]	Future, %[a,b]
None	4	3
Prerequisite Course Required	44	19
Self-Study Materials	40	30
In-Class Instruction	59	36
Computer Lab Assistant	33	29

[a]n=73
[b]More than one procedure could have been chosen by participants.

percentage of using pre-requisite course in the future maybe explained because some instructors will depend on in-class instruction and self-study materials for the preparation of their students. Only two respondents will not use any preparation procedures for their students.

Respondents were asked about the procedures used to select and evaluate software packages for classroom usage (Table 3). Fifty-one (70 %) respondents were evaluating the software by themselves. Previewing software documentation was indicated by 36 (49.32%) of respondents. Listening to recommendations from colleagues and reading published reviews about software were chosen by 34 (46.58%) of respondents. Twenty (27.40%) respondents tested the software in an actual classroom setting. Fifteen (20.55%) respondents evaluated the software with a group of students. Only two respondents did not use any selection or evaluation procedures for using the software in their classrooms.

Table 3 illustrated that in the future less respondents will listen to recommendations from their colleagues, read published reviews about software, preview software documentation, and evaluate software by themselves. The same number as currently plan to test the software in actual classroom settings in the future. More respondents plan to

Table 3. Current and future procedures used to select/evaluate software packages for classroom usage.

Selection/Evaluation Procedures	Current, %[a]	Future, %[a]
None	3	3
Listen to recommendation from colleagues	47	30
Read published reviews	47	25
Preview software document	49	36
Try software out by yourself	70	44
Try software out by a group of students	21	33
Test software in an actual classroom setting	27	27

[a]n=73 More than one answer were allowed.

evaluate the software by using a group of students in the future.

Instructors were surveyed about the types of hardware they used and will be using in the future to teach front office management course. Personal computers 43 (58.90%) and workstations 34 (46.58%) were the dominant types used by respondents and also will be used in the future with a slight increase in workstations 29 (39.37%) rather than personal computers 25 (34.25%). Mainframe computers were used by 21 (28.77%) of the respondents, but 17 (23.29%) respondents indicated that they will be using them in the future.

In summary, it appeared that front office management courses were offered in most hospitality education programs that had hotel management as an area of concentration. The majority of these instructors had more than 6 years of lodging industry experience and over 6 years of teaching experience. These instructors perceived themselves as modest or expert with regard to their computer experience.

Regarding the learning activities used with computers in teaching front office management courses, simulations were the most commonly used learning activities, followed by demonstrations, and drill and practice. No change was shown regarding these planned learning activities to be used with

computers in teaching front office management in the future. However, games were shown to be the only exception, with more instructors planning to use them in their classroom in the future.

Results indicated an obvious decline in the use of instructional software in the future and a consistency in the use of industry-specific software. Front office management instructors may have a willingness to continue the usage of industry-specific software as a hope for achieving high levels of real-life hotel applications in their classrooms.

Front office procedures were the dominant computer application used by instructors. For the future, instructors appeared to be more willing to use housekeeping, budget planning and control, and yield management computer applications.

Regarding the procedures used to select and/or evaluate software packages for academic usage in teaching front office management courses, the majority of instructors depended on evaluating software by trying the software out themselves. This procedure also was planned to be used by the majority of instructors in the future. Results indicated an increase in the evaluation of software by using groups of students. Some instructors tested the software in an actual

classroom setting and will continue doing the same procedure in the future.

Instructors' Assessment of Features of Front Office Instructional Software

Successful integration of the computer as a tool in teaching front office management courses is largely dependent on the quality of the instructional software available. Front office management instructors who are actively engaged in using computers or will use computers to support instruction were given the opportunity to express there opinions and preferences about instructional software. By making clear statements about their needs and wishes, it is suggested that these wishes can be communicated to software developers and vendors. Developers seem to use primarily "common-sense" guidelines when designing most computer-based instruction.

In order to evaluate the degree of importance front office management instructors placed in various features of instructional software used as a supplemental tool in teaching the course, thirty statements were presented in the questionnaire. Each statement described one feature based on the criteria developed by Truett and Gillespie (1984) for selection and/or evaluation of instructional software. These

criteria were categorized into five major types of features: documentation, educational value and instructional objectives, content, user interaction, and technical considerations. Instructors were asked to read the feature statements and assign a rating based on their degree of interest in each feature. A five-level scale was arranged to indicate the degree of importance respondents attached to each item.

Thirty-three instructors indicated that having written documentation which provides enough instruction so that a user with no previous computer experience can run the program was essential for the process of evaluating and selecting an instructional software to be used in teaching front office management course (Table 4). Receiving instructor materials such as instruction manuals, teacher guides, and tests was considered essential by 29 instructors, while 20 instructors indicated that receiving technical documentation also was essential. These results emphasized the importance of having detailed documentation materials to accompany the instructional software.

Well-developed documentation can reduce the time and effort needed for initial use and for users with no previous experience. Instructors ranked the provision of enough

Table 4. Instructors'assessment of features of front office instructional software

Software Features	Degree of Importance				
	Essential	Very Important	Important	Of Limited Importance	Not Important
Documentation					
states instructional objectives clearly	18	30	11	5	6
provides enough instruction for users with no previous experience	33	18	11	7	1
provides student materials	15	20	28	5	2
provides instructor materials	29	20	11	7	2
provides technical documentation	20	25	11	12	2
provides published field-test data	11	10	19	22	8
Instructional Objectives					
achieves its stated educational objectives	38	21	6	1	4
generalizes learning to real life situations	40	27	2	1	0
uses graphics	15	25	20	10	0
uses colors	13	23	19	13	2
uses sounds	5	12	25	19	9
Contents					
matches real front office functions	52	15	1	1	0
uses standard front office terminologies	46	17	2	1	0
generates factual/accurate front office reports	43	21	4	1	0
can be modified by instructors	29	26	12	2	0
integrates interdepartmental relations with front office	43	16	10	0	0
User Interactions					
provides varying levels of difficulty	15	24	11	15	6
allows users to bypass instructions	12	18	25	12	4
presents instructions in an active mode	12	30	22	6	1
allows user to control rate of presentation	27	21	16	6	1
provides immediate feedback	28	32	8	2	0
provides quantitative feedback	20	28	18	2	3
captures and holds users' interest	43	23	4	1	0
rewards every correct answer	12	21	25	7	6
Technical Considerations					
is quick and easy to load and run	42	22	4	1	2
is user-proof	58	10	2	1	0
has clear error messages	49	18	4	0	0
allows users with no computer experience to run it	31	25	9	5	1
has easy to read screen format	36	28	7	0	0
keeps track automatically of each student responses and an entire class	22	33	9	4	3

instruction for users with no previous experience as the first feature they wish to have. Organized documentation so that one can use it according to a hierarchical structure of complexity will save the user's time and avoid confusion. Twenty-two instructors indicated that receiving field-test data published as part of the documentation was of limited importance for them in evaluating and selecting an instructional software package for the front office management course (Table 4). The reason for this may be explained by the fact that 51 respondents were trying the software out by themselves before adoption in classroom settings.

Quality instructional software has been designed using instructional objectives. Instructional objectives are the heart of a well-developed instructional software. An instructional objective is a description of a performance that learners should be able to exhibit before considering them competent. The objective describes an intended result of the instruction. Instructors ranked the provision of an instructional objective that generalizes learning to real life situations as the first feature they wished to have. This gives a logical explanation to the strong need expressed by instructors and students for instructional software that simulates reality.

Forty respondents indicated that having a program that generalizes learning to a range of situations which students are likely to encounter in real life was essential (Table 4). This may explain the consistency in planning to use industry-specific software in the future and the decline in using instructional software (Figure 3). Thirty-eight instructors indicated that it is essential to have a program that appears to achieve its stated educational objectives.

The control of sound is not intrinsically good or bad. It depends on how the software is to be used. A portion of the respondents (19 respondents) indicated that having a program that uses sound for enhancing the educational objectives was of limited importance, while 25 respondents indicated that having sound was important but not very important or essential. Twenty-five respondents indicated that having a program that uses graphics was very important for the evaluation and selection process. Twenty-three respondents indicated that having a program that uses colors was very important for the evaluation and selection process.

Issues of screen design, including the use of colors, graphics, amount and arrangement of text on the screen, have a remarkable effect on capturing and holding users' interests. Color and graphics should be used to highlight or clarify the content. While a limited amount of color or

graphics can be added to maintain the learners attention, overuse can detract from the content.

A number of criteria fall under the concept of "content" and should be considered. Content of instructional software must be accurate and up-to-date. The majority of respondents indicated that the five feature statements included under the content category were essential and very important to have in an instructional software package (Table 4). Fifty-two instructors indicated that having a program content that matches real front office functions was essential. Forty-six instructors indicated that using standard front office terms was essential and 43 instructors indicated that generating factual and accurate reports and integrating interdepartmental relations with front office also were essential. Twenty-nine respondents indicated that having a front office program that can be modified by instructors (such as changing room types, rates, status, etc.) was essential, and 26 instructors indicated that having this feature was very important.

A majority of the respondents (43 instructors) indicated that having an instructional program that captures and holds students interest was essential. This may explain their previous response regarding the importance of having a

program that uses both graphics and colors for enhancing the educational objectives.

A popular hypothesis which has had insufficient research attention was that learner-controlled programs would have greater impact on learning than system-controlled ones. Another hypothesis was that the use of learner controlled approaches would make students more autonomous learners (Roblyer, 1985). A program that allows knowledgeable users to be able to bypass the instructions was chosen to be important by 25 of respondents, very important by 18, and essential by 12, while another 12 respondents considered this feature of limited importance (Table 4).

The beneficial effects to learners of immediate feedback have been acknowledged as one of the unique capabilities of the computer medium. Immediate feedback provided by a program was considered essential by 28 of respondents and very important by 32 respondents.

A question in relation to achievement was whether students with certain levels of skill profit more from computer use than others. Some have suggested that computers can enhance learning at basic levels, but that computer influence diminishes when students become more skilled. Fifteen instructors indicated no desire for having a program

that provides varying levels of difficulty according to the skill level of the learner.

The majority of respondents indicated high degrees of interest in the six feature statements embodied under the technical considerations criteria. Most responses were focused between very important and essential for having instructional programs that are quick and easy to load and run, are user-proof so that accidental or incorrect students response neither wipe out nor lock the programs, have clear error messages, allow users with no computer experience to run them, have easy to read screen format, and keep track automatically of each student responses and an entire class. Compatibility with the college standard hardware and operating system are basic necessities for instructional software. An instructional software which is difficult to use is bound to be a less effective teaching tool than one that is easier for the students to run and manipulate. The objective of most instructional software will not be the mechanics of operating a computer terminal, so as little of the students' time and effort should be spent working on that aspect of the software. The software should not only be easy for the students to manipulate, but also for the instructors.

CHAPTER IV

STUDY 2

Methodology

This study involved the implementation of two different types of computer software packages to college students. These two types of software could be classified as an instructional software or an industry-specific software. Each type can be used as a supplemental tool in teaching front office management courses in four-year undergraduate hospitality management programs. The purpose of this study was to determine if there were any differences in students' knowledge of the subject matter, attitude toward computers, and ability to transfer the learned skills to another industry-specific software, which could be attributed to the usage of either type of software.

Experiment Design

The design used in this study was a nonequivalent control group design (quasi-experimental design) (Figure 5).

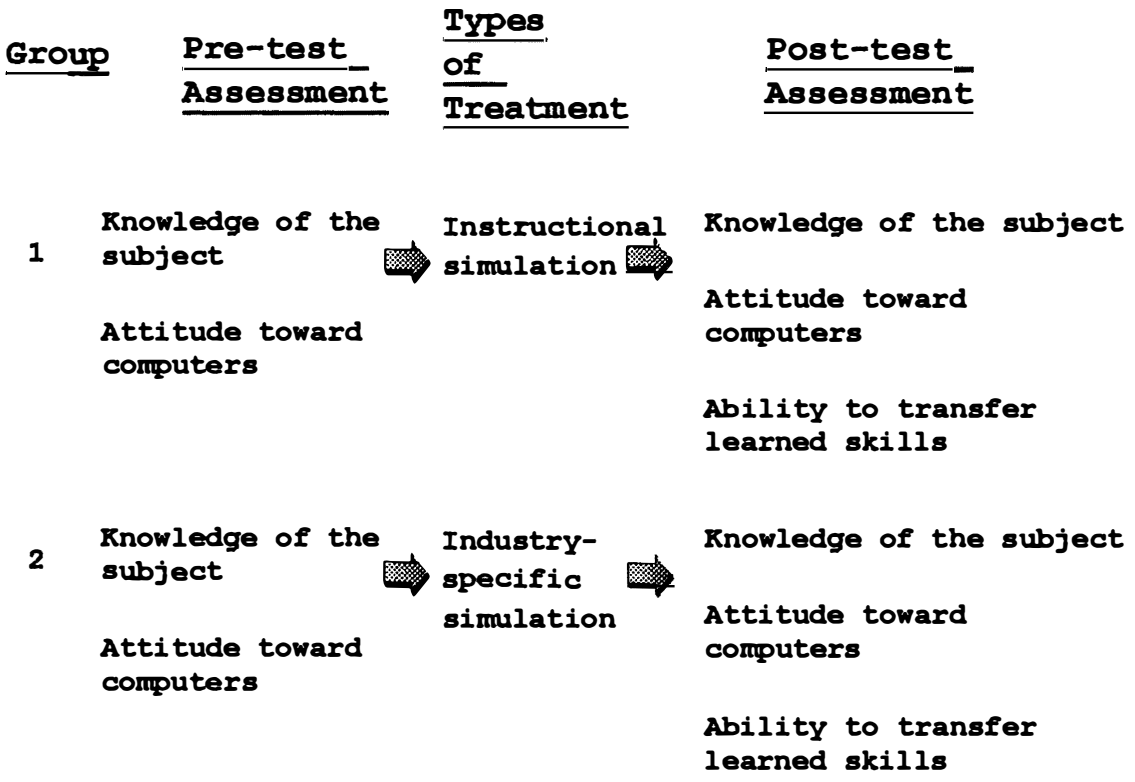

Figure 5. Non-equivalent control group design

This design was selected because it controls for many sources of invalidity and because random assignment of subjects to groups was not possible. Although, the lack of random assignment adds a source of invalidity, which is the possible interactions between selection and variables, the researcher expected the groups of students to be equivalent in their age, sex, and learning styles. Another advantage of this design was that classes were used "as is", so that possible effects from reactive arrangements were minimized.

Intervention Subjects

Subjects for this part of the study were students of the University of Tennessee, Knoxville, who registered for the front office management course. This course is an elective for undergraduate students of the College of Human Ecology who had a major in Hotel and Restaurant Administratio and a mandatory course for undergraduate students who had a major in Recreation and Leisure Studies with Private and Commercial concentration.

Types of Software

Two different types of software were used as supplemental tools in teaching the course. The first type

was an instructional software, "Front Office Simulation - Version 3.0" program of the Educational Institute of the American Hotel & Motel Association. This software was used by students who took the course in Spring of 1994. The second type was an industry-specific software, "Attend Hotel/Motel Management System - Version 6.2" of Haywood & Whittington, Inc. of Wilmington, NC. This software was used by students who took the course in Fall of 1994. Both types of software programs could be run on IBM compatible personal computers.

According to the instructional program documentation, the instructional objective of the software was aimed at teaching skills that could easily be applied to any front office property management system. The stated learning competencies involved the creation, modification, and cancellation of reservation records, registration and checking-out of guests, posting transactions to guest accounts, conducting daily audits, and analyzing front office reports. These competencies also were considered as the intended learning objectives when using the industry-specific software.

Assessment of Knowledge, Attitudes, and Transfer of Skills

The knowledge of students about front office operations and management was measured by conducting the Certification Examination of the Educational Institute of the American Hotel & Motel Association. This test included one hundred items, sixty true and false questions, and forty alternate choice questions. The total score for this test was 100-points.

The attitudes of students toward computers was measured by using Gressard and Loyd's Computer Attitude Scale (1986). It was a Likert-type instrument which consisted of thirty statements about attitudes toward computers and the use of computers (Appendix C). The items were divided into three subscales corresponding to three affective dimensions: computer anxiety, computer confidence, and computer liking. Correlation between the subscales typically fell in the 0.67 to 0.84 range indicating that the three scales shared a large amount of common variance and that the total score based upon these three subscales can be interpreted as representing a general attitude toward computers (Woodrow, 1991). The total score for this instrument was 120-points. The higher the score the more positive the attitude toward computers. This attitude scale was found to be the scale with the highest reliability coefficient among three other

attitude scales in a study conducted by Woodrow (1991). In addition, the computer attitude scale was found to sample attitudes from both the affective and behavioral domains but not from the cognitive domain, therefore, it was stated that its use for computer novices was recommended (Woodrow, 1991).

The ability of students to transfer learned skills was measured by requiring each student in both groups to complete a series of representative tasks at the end of each academic term on another industry-specific software, "Property Management System - Version 4.0B" of LODGical systems, inc. of Pensacola, FL. This software was normally used by medium-size hotel properties, and could be run on IBM or compatible personal computers.

The representative tasks were designed to be similar to what students had learned as a result of using either type of software during the two academic terms, compatible with the learning outcomes stated and expected from users of either type of software. Two measures of ability to transfer the learned skills were determined. Execution time, time required to complete the representative tasks, and execution errors, number of errors remaining upon completion of the representative tasks. The representative tasks which were

required from each student to complete are listed as follows:

1. create a reservation record,
2. modify a reservation record,
3. cancel a reservation record,
4. register a guest with reservation,
5. register a walk-in guest,
6. post charges/payments to a guest account,
7. post charges/payments corrections to a guest account, and
8. check-out guests using different methods of payment.

Characteristics of the Subjects

A questionnaire was developed by the investigator to gather information about the gender, prior computer experience, prior hotel work experience, and learning style of students. The learning styles of the students were measured by the Kolb-Learning Styles Inventory (1984). This inventory consists of a 12-item paper and pencil instrument which can be completed and self-scored in 10 to 15 minutes. The inventory, based on the theories of Dewey, Lewin, and Piaget, provides a framework for examining one's learning strengths and weaknesses. Kolb's model conceives of learning as a four-stage cycle: concrete experience (CE, feeling), reflective observation (RO, watching and listening),

abstract conceptualization (AC, thinking), and active experimentation (AE, doing). Kolb found that learners generally report themselves as being one of four types which he called: divergers, assimilators, convergers, or accommodators. Each type of learner has certain strengths and weaknesses, but people learn more effectively as they develop learning skills in their areas of weakness. The learning styles inventory also was included as a part of the questionnaire.

Learning styles are those unique ways whereby an individual gathers and processes information and are the ways by which an individual prefers to learn (Davidson, 1990). Like intelligence or general ability, learning styles come as a result of our heredity, experiences, and environment (Kolb,1981). Because college students use varied approaches for problem-solving and for processing information, they need a variety of experiences to enhance their learning (Cronbach, 1977). Research supports the practice of incorporating computer-based instruction into college preparation programs to accommodate these individual differences (Burger, 1985, Fowler, 1983, Reiff & Powell, 1991).

The Experiential Learning Model developed by Kolb (1981) maintains that learning depends on the way people

perceive and process information. These two dimensions represent combined learning and problem-solving dimensions that are components of a learning cycle rather than isolated learning type (Figure 6).

The concrete experience stage (CE, feeling) emphasizes learning from particular experiences and being especially aware of other individuals and feelings. The reflective observation stage (RO, watching and listening) will have people looking at different points of view and being reflective before decisions are made. At the abstract conceptualization stage (AC, thinking) the learner will depend on reason and theory to understand the problem. In the active experimentation stage (AE, doing) the learner prefers being involved and seeing how things really work. Kolb (1979, 1984) does not believe any one style of learning is better or worse than the other. Each learning style has strengths and weaknesses for particular situations.

The Kolb-Learning Style Inventory (LSI) assesses four learning modes by asking the learner to rank order a series of words associated with each learning style. The four modes form two polar opposite dimensions: abstract conceptualization versus concrete experience and active experimentation versus reflective observation. Individuals scoring high on abstract conceptualization function well in

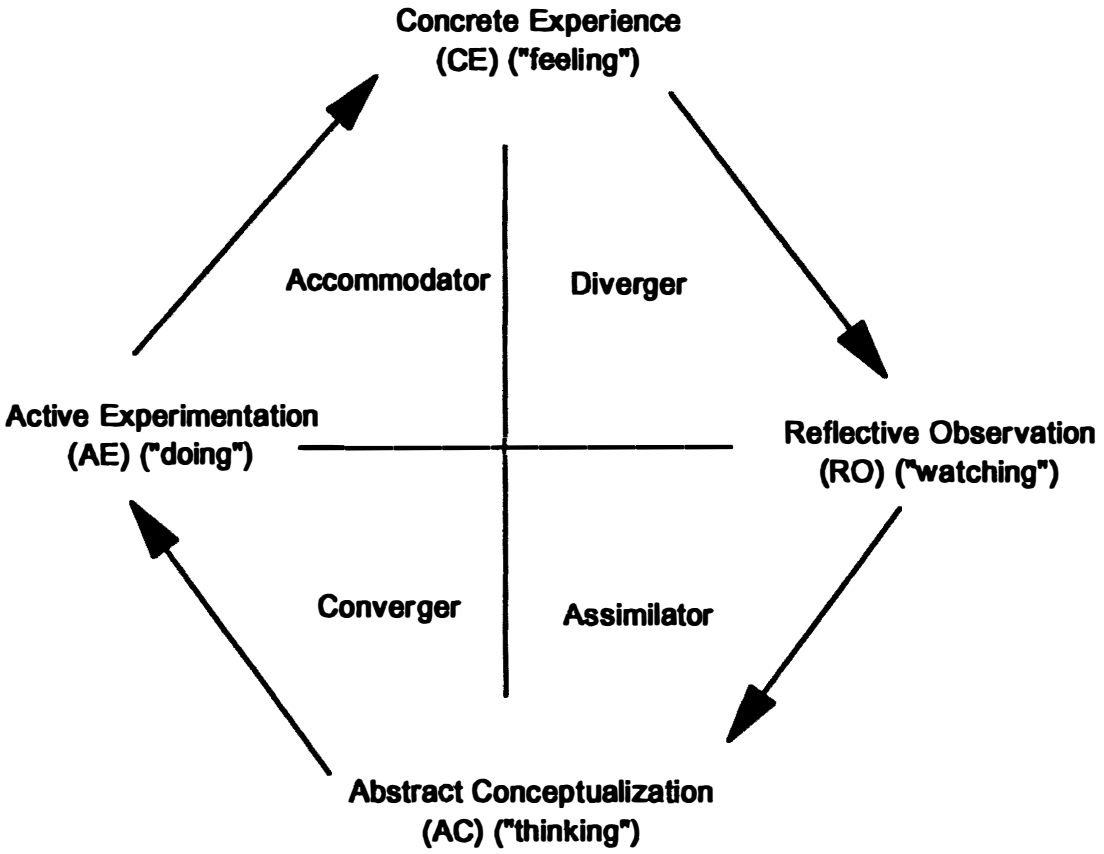

Figure 6. Kolb's four-stage learning cycle

learning situations that emphasize theory and systematic analysis. In contrast, individuals scoring high on concrete experience tend to treat each situation as a unique case, rather than to employ theoretical explanations. Individuals scoring high on active experimentation function best when engaged in educational projects or discussions, they tend not to profit from passive learning situations, such as lectures. In contrast, individuals scoring high on reflective observation rely heavily on careful observation in making judgments and prefer learning situations that allow them to take the role of objective observer. Scores on each of these dimensions reflect the extent to which an individual has developed a particular learning strategy. Although these styles have polar opposite characteristics, individual scores are calculated for each of the four modes (Hudak & Anderson, 1990).

Intervention Procedure

All students enrolled in the front office management course offered in Spring of 1994, were pre-tested on their knowledge of the front office management subject and attitudes toward computers at the first class meeting. Each student also was asked to complete a questionnaire to

determine his or her age, sex, prior computer experience, prior work experience, and learning style.

A course in front office management was taught by the investigator using the traditional lecture and discussion method. The class met twice a week for seventy-five minutes per meeting. The instructor introduced students to the instructional software at the second class of the fourth week. Introduction session involved demonstration of the software, explanation of its educational purpose, and full orientation on how it ran.

Each student received a manual that contained information about running the program, required homework assignments, and types of outputs requested. Students were required to complete eight homework assignments at the computer lab for four class meetings. The instructor was available at the computer lab during class for helping students and answering any of their questions regarding the assignments and how to use the software.

After the fourteenth week, students were post-tested to measure their knowledge of front office management, and attitudes toward computers using the same evaluation instruments as the pretest. Each student also was required to complete a series of representative tasks using another industry-specific software, "Property Management System -

Version 4.0B" of LODGical systems, to measure his or her ability to transfer the learned skills. Execution time and execution errors were recorded after the completion of the tasks required.

The previous procedures were applied for all students who enrolled in the front office management course offered in Fall of 1994. The only exception was the usage of an industry-specific software instead of the instructional software.

Intervention Data Analysis

Gender, prior computer experience, prior hotel work experience, and learning style data were collected for the instructional software users and the industry-specific software users. Pre-test and post-test scores for knowledge of the subject and attitude toward computers were gathered for each individual. Execution time and execution errors for each student were recorded for each group using the third industry-specific software.

Pre- and post-test scores of knowledge for each group were compared using the Paired T-test to note if significant differences existed in the knowledge of students after the intervention. Pre- and post-test scores of attitudes for each group also were compared using the Paired T-test to

note if significant differences existed in the attitude of students toward computers after the intervention.

The difference between pre- and post-test scores of knowledge in front office management for each group was compared by using the Two-Sample T-test to note if a significant difference exists between the two groups. The same procedure was performed for the pre- and post-test scores of attitudes toward computers. The ability of students to transfer the learned skills, represented by execution time and execution errors, for both groups were compared using the Two-Sample T-test. In addition analysis of variance tests comparing each of the dependent variables means between males and females and among subjects grouped by level of prior computer experience, level of prior work experience, and learning styles were performed. Spearman rank-order correlations were used to test the relationships among variables in both groups. Thus, analysis examined correlations among variables, not causation. The SAS System (SAS, 1987) was used for all the statistical analysis. A probability level of 0.05 was used for all tests of significance.

Results and Discussion

Instructional Simulation Group

The instructional simulation group contained 17 undergraduate students of the University of Tennessee (Table 5). Eight students were males and the remaining 9 students were females. Six students had hotel and restaurant administration as their major. Another 6 students had a recreation major with private and commercial concentration. The remaining 5 students were in other majors such as business management, logistics and transportation, special education, political science, and undecided. Three students were freshmen, 3 students were sophomores, 7 students were juniors, and the remaining 4 students were seniors. The ages of students ranged between 17 and 35 years with an average of 22.8 years. The majority of students (82 %) indicated that they had prior computer experience and were familiar with at least one general application software. Of the 17 students, only two had prior hotel work experience. The remaining 15 students had no prior hotel work experience.

Pre- and post-test scores of knowledge of front office operations and management were compared using the Paired T-test to note if a significant difference existed for knowledge of students of front office management in the

Table 5. Description of the instructional simulation group and the industry-specific simulation group.

	Instructional simulation		Industry-specific simulation	
	Frequency	Percentage	Frequency	Percentage
Group Size	17	100	35	100
Gender				
Male	8	47.0	21	60.0
Female	9	53.0	14	40.0
Major				
Hotel Admin.	6	35.0	11	31.0
Recreation	6	35.0	19	54.0
Other	5	30.0	5	15.0
Academic Level				
Freshman	3	17.5	0	0.0
Sophomore	3	17.5	9	26.0
Junior	7	41.0	15	43.0
Senior	4	23.5	11	31.0
Prior Computer Experience				
Have	14	82.5	24	69.0
Do not have	3	17.5	11	31.0
Prior Hotel Work Experience				
Have	2	12.0	8	23.0
Do not have	15	88.0	27	77.0
Learning Style				
Divergers	4	23.5	4	12.0
Assimilators	3	18.0	9	26.0
Convergers	6	35.0	11	31.0
Accommodators	4	23.5	11	31.0

instructional simulation group. The T-test indicated that the average difference in knowledge of students of front office management between pre-test scores and post-test scores was significantly different from zero which indicated a significant increase in knowledge after instruction (Table 6).

Pre- and post-test scores of attitudes towards computers were compared in the instructional simulation group. The statistical test indicated that the average difference in students' attitudes towards computers between pre-test and post-test scores was significantly different from zero. In other words, students' overall attitudes towards computers improved after using the instructional simulation (Table 6). Data concerning student attitudes and perceptions of using computers were promising. With few exceptions, the literature indicated that students demonstrated positive attitudes toward using computers, such that these results were consistent with results obtained by previous studies (Kamm, 1981; Cohen, 1982; Mausner et al., 1983; Schultz, 1985; & Pederson et al, 1993).

A significant differences was found between gain scores of knowledge of front office management due to the learning styles of students in the instructional simulation group (Table 7,8). The difference was found to be between students

Table 6. Paired-difference T-test of mean knowledge and attitude scores between pre-test and post-test in the instructional simulation group and the industry-specific simulation group.

	Instructional simulation			Industry-specific simulation		
	N	Mean	Standard Deviation	N	Mean	Standard Deviation
Knowledge[a]						
Pre-test Scores	17	56.47	5.8	35	58.29	6.9
Post-test Scores	17	71.76	7.6	35	72.51	6.6
Knowledge change[c]		15.29			14.23	
Attitude[b]						
Pre-test Scores	17	87.71	21.9	35	88.97	20.2
Post-test Scores	17	95.24	21.3	35	93.31	18.8
Attitude change[c]		7.53			4.34	
Ability to transfer skills						
Execution Errors, n[d]	17	3.71[f]	1.8	35	1.63[g]	1.8
Execution Time, min[e]	17	36.65[f]	11.0	35	47.69[g]	7.7

[a]Maximum knowledge score = 100.
[b]Maximum attitude score = 120.
[c]Change was significant at $p<0.05$.
[d]Number of incorrect answers after performing representative tasks on the second industry-specific simulation.
[e]Time to complete representative tasks on the second industry-specific simulation.
[fg]Means followed by different superscripts differ at $p<0.05$.

Table 7. Effect of learning style on the mean knowledge and attitude change in the instructional simulation group.

Learning Styles	Knowledge change[a]		Attitude change[a]	
	Mean	Standard Deviation	Mean	Standard Deviation
Divergers	10.00[b]	5.83	14.75[b]	13.82
Assimilators	25.33[c]	4.51	9.00[b]	1.00
Convergers	15.00[bc]	4.60	3.17[b]	5.23
Accommodators	13.50[bc]	7.77	5.75[b]	22.43

[a]Post-test score - Pre-test score = change
[bc]Means within columns followed by different superscripts differ at $p<0.05$.

Table 8. Effect of learning style on the mean knowledge and attitude change in the industry-specific simulation group.

Learning Styles	Knowledge change[a]		Attitude change[a]	
	Mean	Standard Deviation	Mean	Standard Deviation
Divergers	24.00[b]	13.88	2.75[b]	5.19
Assimilators	13.22[b]	9.09	7.00[b]	13.39
Convergers	12.18[b]	5.95	3.45[b]	11.12
Accommodators	13.55[b]	6.77	3.64[b]	7.65

[a]Post-test score - Pre-test score = change
[bc]Means within columns followed by different superscripts differ at $p<0.05$.

who were divergers and students who were assimilators. Assimilators gained significantly more knowledge than divergers. Assimilators learn primarily by reflective observation (RO) and abstract conceptualization (AC). They are best at understanding a wide range of information and putting it into logical form. They generally are more interested in the logical soundness of an idea than its practical value. They are probably less interested in people than in abstract ideas. This may explain the higher scores gained by the assimilators over the divergers in the knowledge scores of front office management. On the other hand, divergers prefer to learn by concrete experience (CE) and reflective observation (RO). They are creative, good at generating alternatives, recognize problems, and understand people.

A student's learning style may significantly influence the effectiveness of computer-assisted instruction. Massey and Engelbrecht (1986) surveyed 193 undergraduate business students to determine the relationship between computer fear and cognitive style, experience, and enjoyment. Analysis showed that quantitative problem solvers were significantly less fearful than qualitative types. Students who used computers at school and work were less fearful than those students who used computers at school only or who had no

experience. Fearful students were less likely to enjoy computer assignments.

Certain personality aspects have been found to effect a student's success in using computer-assisted instruction. Ninety students enrolled in a college of business were assigned to complete a self-paced video cassette package on Lotus 1-2-3 at a microcomputer work station (Matta & Kern, 1988). Students who preferred learning via logic and analysis performed better than those students who used intuition. The researchers suggested that the student who utilizes intuition and feeling as modes of judgment might perform better with human interaction. An instructor could provide the comfort and guidance that the Intuitive-Feeling student desires (Kern & Matta, 1988).

Kluge (1988) stated that it was reasonable to assume that individual differences in the learning of computing skills are related to the strategies adopted by the learner in handling computing information. A pattern of such strategies will make up an identifiable cognitive style. By understanding the cognitive styles implemented by learners during the learning task, instructors should be better able to design and apply effective teaching methods.

Industry-Specific Simulation Group

The industry-specific simulation group contained 35 undergraduate students of the University of Tennessee (Table 5). Twenty-one students were males and the remaining 14 students were females. Eleven students had hotel and restaurant administration as their major. Another 19 students had a recreation major with private and commercial concentration. The remaining 5 students had other majors such as business management, accounting, and undecided. Nine students were sophomores, 15 students were juniors, and the remaining 11 students were seniors. Ages of students ranged between 19 and 31 years with an average of 21.5 years. Over half of the students (69 %) indicated that they had prior computer experience and were familiar with at least one general application software. Of the 35 students, only eight had prior hotel work experience. The remaining 27 students had no prior hotel work experience.

Pre- and post-test scores of knowledge of front office operations and management were compared using the Paired T-test to note if a significant difference existed for students' knowledge of front office management in the industry-specific simulation group. The T-test indicated that the average difference in students' knowledge of front office management between pre-test scores and post-test

scores was significantly different from zero which indicated a significant increase in knowledge after instruction (Table 6).

Pre- and post-test scores of attitudes towards computers were compared in the industry-specific simulation group. The statistical test indicated that the average difference in students' attitudes towards computers between pre-test and post-test scores was significantly different from zero. It appeared that attitudes towards computers increased after using the industry-specific simulation (Table 6).

Analysis of variance tests comparing each of the dependent variables and interactions between males and females and among subjects grouped by level of prior computer experience, level of prior hotel work experience, and learning styles were performed for each group and both groups combined. There were no significant differences between gain scores of knowledge of front office management and attitudes towards computers due to the gender, prior computer experience, prior hotel work experience, and learning styles of the students in the both groups. A larger sample may have made some of the differences among the dependent variables significant.

The difference between pre- and post-test scores of knowledge of front office management for each computer software group was compared using the Two-Sample T-test to note if a significant difference existed between the two groups (Table 6). No significant difference was found between the two groups with regard to the gain in knowledge. Students that initially used the instructional simulation gained an average of 15.29 correct answers versus 14.23 correct answers for the students that initially learned with the industry-specific simulation.

The difference between pre- and post-test scores of attitude toward computers for each computer software group was compared using the Two-Sample T-test. There was no significant difference between the two groups of the gain in attitudes towards computers (Table 6). As the attitude instrument assessed computer anxiety, confidence, and liking, the relative large increase in the attitude scores indicated a positive experience with both types of software.

Ability to transfer the learned skills, represented by the number of execution errors and the amount of execution time, for both groups were compared using the Two-Sample T-test. A significant difference was found between the two groups with regard to the number of errors executed by students while performing the representative tasks on the

second industry-specific simulation. The average number of errors performed by students in the instructional simulation group was higher (3.71) than the average number of errors performed by students in the industry-specific simulation group (1.63).

A significant difference was found between the two groups with regard to the execution time of the representative tasks. Students in the instructional simulation group performed the representative tasks in a shorter time than students in the industry-specific simulation group (Table 6).

It should be noted that the objective of using computers as a tool in teaching front office management courses has a unique purpose in itself. This purpose is more related with training the students on performing standardized front office procedures which involves mastering specific job-related skills. These skills could be considered as an increment in recruitment practices performed by potential recruiters. The expected role of using instructional or industry-specific simulation for teaching front office operations and management can be considered as a necessary step for helping hospitality students visualize real-life hotel situations.

It appeared that students that initially learned on the industry-specific simulation were able to transfer the learned skills more accurately than the students that learned on the instructional simulation. However, these same students took a significantly longer time to complete the representative tasks. The instructional simulation gave students hands on experience performing job tasks with an emphasis on the repetition of these tasks. It is hypothesized that this in turn helped students achieve an adequate speed in performing these tasks. On the other hand, the industry-specific simulation exposed students to the comprehensive relationships among these job tasks. It also extended their management capabilities and taught them how to deal with information overload and screen the important information from the realms of materials printed out. It is hypothesized that this in turn affected the accuracy of their performance and the longer time spent on performing these representative tasks. Although students of the instructional simulation group indicated that the instructional simulation software was easy to use, students in the industry-specific simulation group indicated that the industry-specific simulation was very comprehensive and they wished to have more class time for exploring the full capability of the program.

The industry-specific simulation remained at all times credible to the users. One of the advantages of using industry-specific simulations was that the instructor was able to present the students with a controlled environment. Some would argue that a simulation may not necessarily represent all of the variables in real-life, as in the case of instructional simulation used, but it must represent all of those variables and relationships that are significant in terms of the learning objectives as in the case of the industry-specific simulation used. A simulation that does not represent all of these significant variables will not be credible for the users. On the other hand, a simulation that represents considerable more variables than are significant, as in the case of industry-specific simulations, may appear too complex and unmanageable for the students.

The data gained from this study leads the researcher to state that the use of the industry-specific package enabled students to perform real computerized front office procedures with more accuracy (less number of errors) but in a longer time. This in fact would be considered more important for hospitality recruiters than performing the representative tasks with more execution errors in a shorter time.

It should be noted that many challenges exist when these software packages are used in an educational environment. The academic use of an industry-specific front office or property management system may be very different from the way the programmer envisioned the software would be used. Applications of industry-specific software should be taught in the front office management classroom in spite of their potential challenges for educators. These applications can provide better background for the students and create better management candidates for hospitality employers.

CHAPTER V

SUMMARY AND CONCLUSION

Summary

There were five major research questions that this study was designed to answer. The results that address each of these questions are summarized as follows:

1. What is the current and future state of academic computer use in teaching front office management courses in four-year hospitality programs? It was found that front office management courses were offered in most hospitality education programs that had hotel management as an area of concentration. All respondents indicated a willingness to integrate computers in teaching this course in the future. Instructors became more aware of the importance of having hospitality graduates who master the skills of basic front office computerized procedures.

Simulations via computers were considered as the most commonly used learning activities incorporated in front office management classrooms, followed by demonstrations, and drill and practice. Instructors' responses indicated a declining trend in the use of instructional software in the

future and a consistency in the planned use of industry-specific software in the future. This may have reflected a state of dissatisfaction by instructors and students as well with the instructional front office simulations on hand, and a shift towards using real-life hotel applications in the classroom. Another interesting result was regarding the potential increase in using computer games in the front office classroom. Instructors did not explain how these games would fit into their educational objectives.

Front office procedures were the dominant computer application used by instructors. For the future, instructors appeared to be more willing to use housekeeping, budget planning and control, and yield management computer applications. The decreased use of general application software in this course in the future may be a result that more students are becoming computer literate due to previous computer experiences in pre-college education.

The majority of instructors surveyed depended on evaluating software by trying the software out themselves. This type of software evaluation was planned to be used by the majority of instructors in the future. Results indicated an increase in the evaluation of software by using groups of students. Some instructors tested the software in an actual

classroom setting and will continue doing the same procedure in the future. Personal computers and workstations were the dominant types of computer hardware used by respondents and also will be used in the future with a slight increase in workstations rather than personal computers.

2. What is the degree of importance instructors of front office management courses place in various features of instructional software used as a supplemental tool in teaching these courses? Written documentation which provides enough instruction so that a user with no previous computer experience can run the program was considered essential by the instructors for the process of evaluating and selecting an instructional software to be used in teaching front office management course. Receiving instructor materials such as instruction manuals, teacher guides, and tests and receiving technical documentation also were considered essential. Receiving field-test data published as part of the documentation was of limited importance for the instructors in evaluating and selecting an instructional software package for the front office management course. Having a program that generalizes learning to a range of situations which students are likely to encounter in real life also was essential.

Instructors indicated that it is essential to have a program that appears to achieve its stated educational objectives, but having a program that uses sound for enhancing the educational objectives was of limited importance. Having a program that uses graphics was very important for the evaluation and selection process. Having a program that uses colors was very important for the evaluation and selection process.

The majority of respondents indicated that the five feature statements included under the content category were essential and very important to have in an instructional software package. Having an instructional program that captures and holds the interest of students was essential. Immediate feedback provided by a program was considered essential, or very important. Some instructors indicated no desire for having a program that provides varying levels of difficulty according to the skill level of the learner.

3. Are there any differences in students' knowledge of front office operations and attitudes toward computers which could be attributed to the usage of instructional versus industry-specific computer simulation in teaching a front office management course? No significant difference was found between the instructional and industry-specific simulation groups with regard to the gain in knowledge of

the front office operations. However, students that initially used the instructional simulation gained an average of 15.29 correct answers versus 14.23 correct answers for the students that learned with the industry-specific simulation. Pre- and post-test scores of knowledge of front office operations were significantly different from zero in each group which indicated a significant increase in knowledge after instruction in both groups.

There was no significant difference between the instructional and industry-specific simulation groups in the gain in attitudes towards computers. As the attitude instrument assessed computer anxiety, confidence, and liking, the relative large increase in the attitude scores indicated a positive experience with both types of computer simulations. Pre- and post-test scores of attitudes toward computers were significantly different from zero in each group which indicated a positive attitude toward computers after instruction in both groups.

4. Are there any differences in students' ability to transfer the learned skills to another industry-specific simulation which could be attributed to the usage of instructional versus industry-specific simulations? Students who learned front office procedures by using the

industry-specific simulation performed front office procedures with more accuracy than students who learned by the instructional simulation. Students who learned front office procedures by using the instructional simulation performed these procedures in shorter time than students who learned by the industry-specific simulation.

5. Are there any differences in students' knowledge of the subject, attitude toward computers, or ability to transfer learned skills which could be attributed to students' gender, prior computer experience, prior hotel work experience, or learning style? No significant differences were found between the change in knowledge of front office management and change of attitudes towards computers which could be attributed to students' gender, prior computer experience, prior hotel work experience in both groups. A significant difference was found between gain scores of knowledge of front office management in the instructional simulation group due to the learning styles of students.

Limitation of The Study

A crucial aspect of any true experimental procedure is to maintain control over any confounding variables. However,

holding such confounds constant in an educational setting is a more difficult task than in a laboratory setting. Instead, quasi-experimental procedures are employed as substitutes. The trade-off in these situations is that while both the experiment and the quasi-experiment are designed to control for some or all the potential threats to internal validity, one sacrifices the generalizability of the results the more one attempts to control for such influences. More rigorous laboratory control will make the results less transferable to a field application. The goal in this research was to attain sufficient rigor in order to make the results scientifically acceptable, while at the same time maintaining enough realism to make the results transferable to other educational settings.

To draw a conclusion based on the results of the experimental part of this study, certain limitations should be considered such as the size of the experimental groups, the inability to have a control group due to the usage of actual educational setting, and the varied levels of motivations among participated students due to having different majors and enrollment status. These factors will limit the generalizability of the presented results.

Conclusion

It is apparent that property management systems are becoming no longer a luxury but a necessity for almost all types of hotel operations. In an operational sense, property management systems has increased efficiency by reducing clerical work done by hand, improved accuracy, increased speed of checking in and out, and enhanced personal attention to hotel guests through the use of guest history functions. This in fact puts more responsibilities on the shoulders of hospitality educators who want to remain current on the status of computer applications in the hospitality industry and share the goal of educating students who will be able to compete in an industry which uses computers. Hospitality students will need to be competent in making managerial decisions by utilizing computers in its general applications sense. But they also will need to thoroughly understand how property management systems work and how to perform the basic operational tasks.

The results of this study indicated that the use of the industry-specific package enabled students to perform real computerized front office procedures with more accuracy but in a longer time. This in fact would be considered more important in an actual front office setting than performing

the representative tasks with more execution errors in a shorter time.

However, it should be noted that many challenges will exist when these software packages are used in an educational environment. The academic use of an industry-specific front office or property management system may be very different from the way the programmer envisioned the software would be used. The applications of industry-specific software should be taught in the front office management classrooms in spite of their potential challenges for educators. These applications can provide better background for the students and create better management candidates for hospitality employers.

This study recommends that the only way to establish the validity of a system of evaluation for instructional or industry-specific software is to demonstrate that the effective programs do in fact teach academic objectives better and/or faster than ineffective programs. This means that controlled outcome studies are required, whereby gains in academic achievement attributed to the use of specific software (instructional or industry-specific) can be measured with objective tests. However, a review of the literature indicated that there were very few empirical studies of instructional effectiveness of instructional or

industry-specific software used by hospitality education programs.

It is apparent that the utilization of computer simulations and educational evaluation research in hospitality education is needed to enhance student learning and optimize the application of computers in the classroom. Computer usage in hospitality management curriculum is now no longer an option, but is a necessity for a quality educational experience. To objectively and accurately determine the effectiveness of a software package on student learning, systematic data-gathering procedures need to be planned and conducted using direct performance data. If the effects of a computer software package has on learning under controlled conditions can be studied, theoretically it could be concluded with some certainty that any learning effect is a real one. Hospitality educators can make an important contribution toward generating the required data base by conducting small evaluation studies of the software they are using in the various areas of hospitality management. Although any single study is likely to have low statistical power and limited generality, the aggregate data acquired from many studies will be of great value in helping to identify specific factors that make education software effective.

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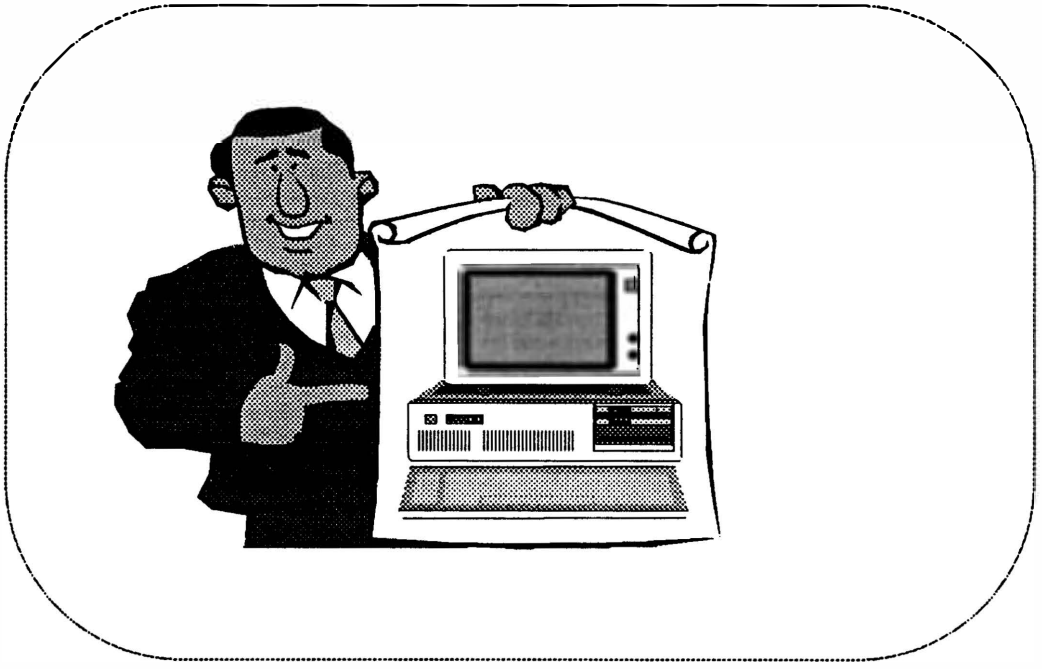
APPENDIXES

COMPUTERS FOR FRONT OFFICE MANAGEMENT COURSES



Division of Hotel & Restaurant Administration
College of Human Ecology
The University of Tennessee
Knoxville, TN 37996-1900

January 1994

SECTION I: The following questions will help assess the current and future state of academic computer use in teaching front office management courses in your hospitality program. Please complete the following information as completely as possible.

Front Office Management course in your program is ___ credit hours.
The number of sections taught is ___ sections per academic year.
The average number of students enrolled in this course is ___ per academic year.
The percentage of enrolled students who are required to take this course is ___.

1. Do you currently use computers in teaching a front office management course ? (please circle one)

1. YES 2. NO

(If NO) Please specify the reason: _____

2. Would you like to use computers as a tool in teaching this course in the future ? (please circle one)

1. YES 2. NO

(If NO) Please specify the reason: _____

3. Which of the following best describe(s) those learning activities in which you presently are using computers or would like to use in the future in teaching this course ? (please check more than one if appropriate)

At present		In the future
___	LECTURES	___
___	DEMONSTRATIONS	___
___	DRILL AND PRACTICE	___
___	GAMES	___
___	SIMULATIONS	___
___	READING ASSIGNMENTS	___
___	OUT-OF-CLASS GROUP PROJECTS	___
___	INDEPENDENT STUDY PROJECTS	___

4. Which of the following types of software are you using in teaching this course or plan to use in the future ?

At present		In the future
___	INSTRUCTIONAL (EDUCATIONAL) SOFTWARE (such as tutorial, simulation, drill & practice, and game) please specify package name: _____	___
___	GENERAL APPLICATION SOFTWARE (such as Lotus 1-2-3, WordPerfect, and dBase IV) please specify package name: _____	___
___	INDUSTRY-SPECIFIC SOFTWARE (such as point-of-sale, and property management systems) please specify package name: _____	___

5. Which of the following computer applications are you presently using in teaching this course or plan to use in the future ? (please check more than one if appropriate)

At present		In the future
___	FRONT OFFICE PROCEDURES	___
___	HOUSEKEEPING	___
___	BUDGET PLANNING AND CONTROL	___
___	YIELD MANAGEMENT	___
___	OTHER (please specify): _____	___
	_____	

6. Which procedure are you using to prepare and train students to use computers in this course or plan to use in the future ? (please check more than one if appropriate)

At present		In the future
___	NONE	___
___	PREREQUISITE COURSE REQUIRED	___
___	SELF-STUDY MATERIALS	___
___	IN-CLASS INSTRUCTION	___
___	A TECHNICIAN TO SUPPORT STUDENTS	___
___	OTHER (please specify): _____	___

7. Which procedure(s) are you using to select and/or evaluate the software packages for classroom use or planning to follow in the future ? (please check more than one if appropriate)

At present		In the future
___	NONE	___
___	LISTEN TO RECOMMENDATION FROM COLLEAGUES	___
___	READ PUBLISHED REVIEWS ABOUT THE SOFTWARE	___
___	PREVIEW SOFTWARE DOCUMENTATION	___
___	TRY SOFTWARE OUT BY YOURSELF	___
___	TRY SOFTWARE OUT BY A GROUP OF STUDENTS	___
___	TEST SOFTWARE IN AN ACTUAL CLASSROOM SETTING	___

8. Which of the following best describe(s) the hardware used by students enrolled in this course or will be used in the future ? (please check one)

At present		In the future
___	PERSONAL COMPUTERS	___
___	TERMINALS CONNECTED TO A LARGE MAINFRAME COMPUTER	___
___	WORKSTATIONS (personal computers connected to host computers)	___

SECTION II: The process of selecting and evaluating the appropriate software package for integration in teaching front office management course is a task educators should consider. The following statements represent various features of educational software. Please read each item carefully and assign a rating using the following scale:

1 = Not important 2 = Of limited importance 3 = Important 4 = Very important 5 = Essential

Documentation

I would like to be able to:

1. have written documentation that clearly state the instructional objectives (e.g. suggested classroom activities).	1	2	3	4	5
2. have written documentation that provides enough instruction so that a user with no previous computer experience can run the program.	1	2	3	4	5
3. receive student materials (e.g. student workbooks or worksheets).	1	2	3	4	5
4. receive instructor materials (e.g. instruction manual, teacher guide, tests).	1	2	3	4	5
5. receive technical documentation.	1	2	3	4	5
6. receive field-test data published as part of the documentation.	1	2	3	4	5

Educational Value and Instructional Objectives

I would like to have a program that:

7. appears to achieve its stated educational objectives.	1	2	3	4	5
8. generalizes learning to a range of situations which students are likely to encounter in real life.	1	2	3	4	5
9. uses graphics for enhancing the educational objectives.	1	2	3	4	5
10. uses colors for enhancing the educational objectives.	1	2	3	4	5
11. uses sound for enhancing the educational objectives.	1	2	3	4	5

Content

I would like to have a program that content:

12. matches real front office functions.	1	2	3	4	5
13. uses standard front office terminologies.	1	2	3	4	5
14. generates factual and accurate front office reports.	1	2	3	4	5
15. can be modified by instructors (e.g. changing room types, rates, status).	1	2	3	4	5
16. integrates interdepartmental relations with front office (e.g. Housekeeping, Engineering & Maintenance, Sales & Marketing).	1	2	3	4	5

1 = Not important 2 = Of limited importance 3 = Important 4 = Very important 5 = Essential

User Interaction

I would like to have a program that:

17. provides varying levels of difficulty according to the skill level of the learner.	1	2	3	4	5
18. allows knowledgeable users to be able to bypass the instructions.	1	2	3	4	5
19. presents the instructions in an active mode within the program.	1	2	3	4	5
20. allows students to control the rate of the presentation of the text and/or problems presented on the screen.	1	2	3	4	5
21. provides immediate feedback.	1	2	3	4	5
22. provides quantitative feedback so that students know the number or percentage of correct answers given.	1	2	3	4	5
23. capture and holds students interest.	1	2	3	4	5
24. progresses as a means of reward (every correct answer is rewarded).	1	2	3	4	5

Technical Considerations

I would like to have a program that:

25. is quick and easy to load and run.	1	2	3	4	5
26. is user-proof so that accidental or incorrect student response neither wipe out nor lock the program.	1	2	3	4	5
27. has clear and unambiguous error messages.	1	2	3	4	5
28. allows someone with absolutely no programming skills or prior computer knowledge to run it.	1	2	3	4	5
29. has an uncluttered and easy to read screen format.	1	2	3	4	5
30. keeps track automatically of each student response and an entire class of students responses.	1	2	3	4	5

SECTION III: Demographic Characteristics

Please answer the following questions about your hospitality program and yourself so that we can analyze the results of this survey.

1. What is the major area(s) of hospitality management taught in your program ? (please circle more than one if appropriate)

1 FOOD SERVICE MANAGEMENT
2 HOTEL MANAGEMENT
3 TOURISM MANAGEMENT
4 INSTITUTIONAL MANAGEMENT
5 OTHER (please specify): _____

2. What is the number of undergraduate students currently enrolled in your program ? (please circle one)

1 LESS THAN 100
2 100 - 300
3 301 - 600
4 MORE THAN 600

3. How many years of lodging industry experience do you have ? (please circle one)

1 LESS THAN 1
2 1 - 3
3 4 - 6
4 MORE THAN 6 YEARS

4. How many years of teaching experience do you have ? (please circle one)

1 LESS THAN 2
2 2 - 5
3 6 - 9
4 MORE THAN 9 YEARS

5. Which of the following best describes your experience as a computer user ? (please circle one)

1. NOVICE
2. MODEST
3. EXPERT

6. What is your academic rank in your program ? (please circle one)

1 GRADUATE TEACHING ASSISTANT
2 INSTRUCTOR
3 ASSISTANT PROFESSOR
4 ASSOCIATE PROFESSOR
5 PROFESSOR
6 OTHER (please specify): _____

THANK YOU FOR YOUR ASSISTANCE

APPENDIX B: CORRESPONDENCE

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

Hotel and Restaurant Administration
1215 West Cumberland Avenue, Room 229
Knoxville, TN 37996-1900
(615) 974-4357
FAX # (615) 974-3491

January 10, 1994

Dear Instructor of Front Office Management:

As a fellow instructor in a Hospitality Management Program and a graduate student in The Division of Hotel & Restaurant Administration at The University of Tennessee, I am writing to ask for your help. I am in the process of preparing my doctorate dissertation about the evaluation of computer-based training software that is used in teaching front office operations for undergraduate hospitality management students.

Your response to the enclosed questionnaire is voluntary, however it will play an essential role in my research. We need your assistance in assessing the current and future state of academic computer use in teaching front office operations in your hospitality program, and evaluating your degree of interest in various features of instructional software that you wish to have for teaching this course.

We know that your time is valuable and therefore we have tried to make the questions concise and relevant to the research topic. Please be assured that your responses will be held confidential and that results will be reported only as group data. We hope that you will take a few minutes to complete the questionnaire and return it in the enclosed addressed, postage paid envelope.

Thank you in advance for your participation. Your response is vital to the success of this research project. Please accept our best regards.

Sincerely,

Mohamed Abdul-Ghani, M.S.
Graduate Teaching Associate

Carol Costello, Ph.D.
Associate Professor

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

Hotel and Restaurant Administration
1215 West Cumberland Avenue, Room 229
Knoxville, TN 37996-1900
(615) 974-4357
FAX # (615) 974-3491

February 10, 1994

Dear Director of Hospitality Management Program:

You recently received a questionnaire to assess the current and future state of academic computer use in teaching front office operations in your hospitality program, and evaluate the degree of interest of course instructor in various features of instructional software that he/she wishes to have for teaching this course. As of this date, we have not received the completed questionnaire by the instructor.

If the instructor of your front office management course already has completed and returned the questionnaire, please accept our sincere thanks. If not, we ask the instructor to take a few minutes to complete the enclosed questionnaire. The instructor's response should take less than 15 minutes and there are no risks as a respondent. Data obtained from the questionnaires will be treated confidentially and only group means will be reported.
Your response is important to the success of this study.

Your time and consideration are greatly appreciated.

Sincerely,

Mohamed Abdul-Ghani, M.S.
Graduate Teaching Associate

Carol Costello, Ph.D.
Associate Professor

APPENDIX C: COMPUTER ATTITUDE SCALE

Please answer the following by putting a cross mark (X) in either "strongly agree," "slightly agree," "slightly disagree," or "strongly disagree" column.

strongly agree	slightly agree	slightly disagree	strongly disagree	
____	____	____	____	Computers do not scare me at all.
____	____	____	____	Working with a computer would make me very nervous.
____	____	____	____	I do not feel threatened when others talk about computers.
____	____	____	____	I feel aggressive and hostile towards computers.
____	____	____	____	It wouldn't bother me at all to take computer courses.
____	____	____	____	Computers make me feel uncomfortable.
____	____	____	____	I would feel at ease in a computer class.
____	____	____	____	I get a sinking feeling when I think of trying to use a computer.
____	____	____	____	I would feel comfortable working with a computer.
____	____	____	____	Computers make me feel uneasy and confused.
____	____	____	____	I am no good with computers.
____	____	____	____	Generally I would feel OK about trying a new problem on the computer.
____	____	____	____	I don't think I would do advanced computer work.
____	____	____	____	I am sure I could do work with computers.
____	____	____	____	I am not the type to do well with computers.
____	____	____	____	I am sure I could learn a computer language.
____	____	____	____	I think using a computer would be very hard for me.
____	____	____	____	I could get good grades in computer courses.
____	____	____	____	I don't think I could handle a computer course.
____	____	____	____	I have a lot of self-confidence when it comes to working with computers.
____	____	____	____	I would like working with computers.
____	____	____	____	The challenge of solving problems with computers does not appeal to me.
____	____	____	____	I think working with computers would be enjoyable and stimulating.
____	____	____	____	Figuring out computer problems does not appeal to me.
____	____	____	____	When there is a problem with a program running that I can't immediately solve, I would stick with it until I have the answer.
____	____	____	____	I don't understand how some people can spend so much time working with computers and seem to enjoy it.
____	____	____	____	Once I start to work with the computer, I find it hard to stop.
____	____	____	____	I will do as little work with computers as possible.
____	____	____	____	If a problem is left unsolved in a computer class, I would continue to think about it afterward.
____	____	____	____	I do not enjoy talking with others about computers.

VITA

Mohamed Abdul-Ghani was born on January 22, 1963 in Giza, Egypt. In 1984, he received his B.S. in Hotel Management from the College of Tourism and Hotel Management, the University of Helwan, Cairo, Egypt. He was in the top of his class and was appointed as a teaching assistant in his former college which entitled him to lecture in Front Office Management, Menu Planning, Food Cost Control and Beverage Service. He also acted as a training coordinator between his college and the hotel chains in Egypt. During his undergraduate years he had three internships in the food and beverage and the front office departments of Holiday Inn Pyramids Hotel and Cairo Marriott Hotel and Casino in Egypt.

In 1985, he was the rooms division manager of Al-Nabila Cairo Hotel (200-room). In 1987, he was the front desk manager of the Cairo Marriott Hotel and Casino (1250-room). In 1989, he was the convention sales manager of the Cairo Marriott Hotel and Casino. In 1989, he received his M.S. in Hotel Management from the University of Helwan, Cairo, Egypt.

In 1990, he received a personal scholarship from the Department of Nutrition, Division of Hotel and Restaurant Administration, the College of Human Ecology, the University

of Tennessee, Knoxville, to study for his Doctorate Degree and teach the Front Office Management Course. In 1992, he joined the Radisson Knoxville Hotel as a night manager and the hotel night auditor.

He is presently employed as an assistant professor of Hospitality and Tourism Management in the Science and Mathematics Division at Grand Valley State University, Allendale, Michigan.