To the Graduate Council:

I am submitting herewith a thesis written by Tanya Dix entitled "Computer Simulation Development and Implementation for Application of Retail Management Concepts." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Textiles, Retailing and Consumer Sciences.

Ann Fairhurst, Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:

Associate Vice Chancellor
and Dean of The Graduate School

COMPUTER SIMULATION DEVELOPMENT AND IMPLEMENTATION FOR APPLICATION OF RETAIL MANAGEMENT CONCEPTS

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Tanya Dix
May 1995

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This thesis is dedicated to my parents

Mrs. Audrey Lucille Dix

and

Mr. Herbert James Dix

For their invaluable support and affection

in my educational endeavors.

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There are many people I am grateful for making my work possible. First and foremost, I would like to express my deepest gratitude to my parents, Herb and Audrey Dix, for without their love, support, guidance and generosity I would not be here today.
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Stopping by Woods on a Snowy Evening

Whose woods these are I think I know.
His house is in the village though;
He will not see me stopping here
To watch his woods fill up with snow.

My little horse must think it queer
To stop without a farmhouse near
Between the woods and frozen lake
The darkest evening of the year.

He gives his harness bells a shake
To ask if there is some mistake.
The only other sound's the sweep
Of easy wind and downy flake.

The woods are lovely, dark and deep.
But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep.

Robert Frost

ABSTRACT

The study was conducted to develop and evaluate a computer simulation for teaching retail management concepts. Specific objectives of the study were to identify the extent simulations are used within the retailing areas, both academic and industrial; to create a computer simulation for application of retail mathematics that meets the criteria resulting from the questionnaires; and to use the simulation in a classroom and test the attitudes of the students regarding the simulation. The study was conducted in three sequential phases. The first phase of the study included a questionnaire designed to identify uses of computer simulations in both the university retail curriculum and retail industry. Responses from twenty-five academics and thirteen corporate retailers from across the United States were analyzed. Results were used as a foundation in developing the simulation program. The second phase a computer simulation aimed for applying retail management concepts was developed. Specific objectives were to develop a simulation that may be used in teams and/or individuals; to increase problem-solving skills and decision-making skills; and to focus on increasing exposure to strategies and financial concerns found in retail management. The third phase included the testing and evaluation of the computer simulation on undergraduate students enrolled in a course aimed at teaching mathematics for retail buyers. The students had a positive attitude towards the developed simulation and an extremely high composite score in retail specific affective and cognitive learning. Implications and concluding recommendations are provided for further research.

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CHAPTER I

INTRODUCTION

As the world moves into the twenty-first century it is apparent that educators must utilize modern technology to produce a world class work force that is well-trained, educated and prepared to succeed in a competitive marketplace. It is indisputable that the computer has transformed the world and thus it is the responsibility of the educational system to teach students how to use the computer to prepare them for their future. Students of today need to be computer literate to successfully compete for available job openings upon graduation. A current article in the *Wall Street Journal* by Ferguson (1995) stated that 67.4% of college graduates used computers in the workplace during 1993.

Throughout history educators have been experimenting with methods in which to provide students with experience of realism in the classroom and learn practical skills for their future. In recent years, computer simulation games in the classroom have gained considerable popularity as vehicles for such goals. A computer simulation is described as a computer program duplicating realistic situations in a controlled manner that requires students to analyze situations, make decisions, solve problems and input their actions into the computer (Miller, 1985). Simulations are the most action-oriented form of education and Larreche (1987) believes they will become "the most effective, convenient, and

economical form of education."

Simulations are currently used in educational institutions for a variety of purposes, e.g., presenting information and principles; increasing motivation and interest; placing students in situations where they must encounter and use their decision-making skills, problem-solving skills, communication skills and negotiation skills; and training students in skills they may need in the future.

Computer familiarity has been used as hiring criteria by employers to fill entry level positions. A study by Boatwright and Stamps (1988) revealed that recruiters from retailing organizations thought that communication skills (both verbal and written communication) and motivation skills were more important than academic skills. Work by Kelley and Gaedeke (1990) said that the top five criteria out of the 34 possible criteria listed were: oral communication skills, enthusiasm/motivation, self-confidence, initiative, and lastly entrepreneurship. Kelley and Gaedeke (1990) suggested that some of these skills could be developed by team building exercises, course projects and computer simulation games. Furthermore, industry leaders are incorporating simulations into their training and company orientation programs to reduce training time, attain better retention, and lower costs associated with training employees. Other benefits attributed to simulation game usage are increased motivation, increased positive attitudes, increased problem solving and decision making skills, and increased enthusiasm for both student and teacher.

Computer simulations have been and continue to be widely used in business education. However, simulations specifically designed to teach aspects of retail

management are few. Consequently, computer simulation usage in retail education is minimal. It is apparent that computer usage plays an important role in all aspects of the retailing industry. It is imperative that students preparing for careers in this industry are aware of the computer's role. Retailing educators need to incorporate the computer into the curriculum whenever possible.

As retail programs in schools offer more application based teaching (e.g.,WordPerfect, Word, Lotus 123, Excel, etc.) and students become more familiar with computer based learning, new interactive simulations need to be created. By using computer simulations, the student not only learns team work through group projects, but also problem solving and decision making under time pressure in a limited environment much like actual retail conditions faced in the global industry. Furthermore, computer simulations force the students to integrate the knowledge they have acquired in past experiences and course work and act as a reinforcement to understanding the various intricacies affecting retailing, which a student does not grasp through textbooks and standard lecture format. These simulations have to be supported by faculty and geared toward the industry, so that maximum benefit can be derived from their use.

Purpose of Study

Little research has been conducted aimed specifically at the retailing fields with regards to computer simulation usage. The purpose of this study was to develop and evaluate a computer simulation specifically aimed at retailing concepts. The study was conducted in three sequential phases. During the first phase of the study a questionnaire

was designed to identify uses of computer simulations in both the academic retail curriculum and corporate retail industry. During the second phase, the computer simulation aimed at retailing was developed. The third phase included the testing and evaluation of the computer simulation on undergraduate students enrolled in a course aimed at teaching mathematics for retail buying.

This research builds on previously published articles by concentrating on how a simulation could be created to better prepare retailing students for entry-level positions. Furthermore, the development of a computer simulation program will bridge the gap between knowledge attained in lecture and actual application of retail mathematical concepts. Ultimately, the use of an updated simulation program geared specifically at retailing will benefit both the education of students and the retail industry.

Objectives of the Study

There are several objectives to this study. The first objective deals with identifying the extent to which simulations are used for teaching retail concepts in academic and business settings. The second objective is to create a computer simulation that incorporates a specific retail buying activity for application of retail mathematical concepts. The last objective is to use the simulation in a classroom and test the attitudes of the students regarding the simulation. The student attitudes are important in identifying the overall utility (positive or negative) of the simulation as reported by the students. This study does not aim to test the "effectiveness" of the computer simulation, but the attitudes of the students using the developed simulation.

CHAPTER II

REVIEW OF LITERATURE

This study investigates the development and assessment of computer simulations for teaching mathematics for retail management. The review of literature is divided into four parts. The first part covers computer-assisted college teaching. The second part includes models and theories for the development of computer-assisted instruction. The third part looks at research on instructional simulation. The last part specifically examines business simulations.

Computer-Assisted Instruction

Computer-assisted instruction (CAI) began in the 1960's following the introduction of computers into higher education. CAI is defined as using a computer to provide course content instruction in the form of drill and practice, tutorials, and simulations and games (Chambers & Sprecher, 1983). In drill and practice, the teacher presents lessons to pupils by conventional means, and the computer provides practice exercises as follow-up. In tutorial the computer presents both the concepts and practice exercises. In simulation and games, the computer evaluates student's input immediately, responds back, keeps records and normally involves a scenario or background information.

These three taxonomies; drill and practice, tutorial, and simulations and games, constitute what has become known in the United States as computer-assisted instruction, computer-aided instruction, computer augmented instruction, computer-administered instruction (CAI), computer-based instruction (CBI), computer-based learning (CBL), computer-managed instruction (CMI), or computer-based education (CBE). Computer-assisted learning (CAL) is used in Europe and elsewhere to describe these activities.

In 1977, microcomputers were widely available for the first time commercially. Prior to this time, computers had been large mainframe or minicomputer machines. They were costly, limited in capabilities, and time consuming to learn and operate. The introduction of microcomputers revolutionized the use of CAI in education in the United States. In 1980, a nationwide study of CAI at all levels of education was conducted revealing that CAI was in use in 50 percent or more of U.S. educational institutions and in 1989 some 2.4 million computers served about 96% of the schools (Becker, 1990).

Much has been published regarding computers as instructional tools in the classroom. Individual studies of CAI use have been done on mathematics, genetics, science, programming, reading and writing, language, history, politics, social and cognitive interactions, learning styles, minority studies, and screen design (Salomon, 1992). Many studies have shown computer-assisted instruction to be equivalent or superior to other forms of instruction, such as lectures, laboratory work, instructional texts, or spoken or written instructions (Chambers, 1983; Fisher, 1977; Kulik, Kulik & Cohen, 1980; Wolfe, 1975; Randel, Morris, Wetzel, & Whitehill, 1992).

Wang & Sleeman (1993) reviewed published research of computer-assisted

instruction effectiveness. They concluded that CAI is a potentially powerful tool, but was still in its early stages of development and implementations. They suggested that successful integration of the computer into a curriculum was important. It was their opinion that until the computer was viewed as an integral part of the educational process the student will not profit from the declared benefits.

Kulik & Kulik (1987) reviewed recent literature on the effectiveness of CBI using four separate meta-analyses. A meta-analysis (analysis of analyses) is a statistical analysis of a large collection of results from individual studies for the purpose of integrating findings. The authors found CBI to be highly effective in raising exam scores, improving student attitudes toward courses, and reducing the amount of time needed for learning. These analyses covered 199 comparative studies that involved elementary schools, high schools, colleges, universities and non-traditional educational institutions. Each independent study included in the analyses was controlled and quantitative in research. Most of the studies reported that CBI had positive effects on students. Many studies also reported a new appreciation for technology and positive effects on student's attitudes toward schools and teaching.

Kulik, Kulik & Cohen (1980) integrated 59 independent evaluations of computer-based teaching. This meta-analysis found that computer-based instruction made small, but significant positive contributions to the course achievement and attitudes of college students. Each study was conducted in a college classroom of many different disciplines.

Although much research has been devoted to the study of CAI's effectiveness in education, the overall picture is far from clear. Several researchers (Kulik & Kulik, 1987;

Premkumar, Ramamurthy & King, 1993) believed that such positive reported results on CAI was a combination of several factors. One factor being the "editorial gatekeeping" or the desire to publish strong significant results rather than weak insignificant ones. A second factor was experimental design flaws that may allow researcher biases and expectations to color study results. Novelty was suggested as another factor influencing the results. The last factor was the differences in the actual instruction by the teachers or the "instructor-effect" They strongly suggest further research is needed to determine the differences in results and in analyzing the influences of various other factors such as instructor characteristics, student characteristics, and class characteristics (Premkumar, Ramamurthy & King, 1993). Some reported limitations of CAI were high cost, poor quality of software, and complicated software implementations (Wang & Sleeman, 1993).

Models and Theories for CAI Development

Theories and models have traditionally served as guides to bring together existing knowledge and provide a foundation on which to build. Bloom's Taxonomy of educational objectives provides such a guiding framework in the field of simulations games (Bloom, 1956). This Taxonomy classifies learning outcomes into three domains: (1) cognitive (knowing), (2) affective (feeling), and (3) psychomotor (doing). Butler, Markulis & Strang (1988) suggested that the microcomputer can be used for instructional purposes in any of three domains. In the first domain, CAI effectively promotes cognitive development in all three categories that define CAI - drill and practice, tutorials and simulations. In the second domain, affective, the computer provides an excellent

vehicle for students to examine their own value systems in a private, patient, unemotional and bias-free environment. Simulations provide the necessary outlet for the third domain, psychomotor. Simulations allow students to actively engage in situations that may otherwise be too costly, dangerous or time consuming for direct experience.

Reigeluth & Schwartz (1989) offered an instructional theory for the design of computer-based simulations. They described a simulation in terms of three major aspects: the scenario, the underlying model, and the instructional overlay. The **scenario** of a simulation recreates, to some degree, a real life situation. It presents where, when, why and how it takes place. The **model** reflects the causal relationships that govern the situation. The **instructional overlay** is a catch all phrase for optimizing learning and motivation.

Reigeluth & Schwartz identified five steps they believe need to be employed in simulation development to create an effective product. Their general model for simulation development is: (1) **complexity** - select the appropriate complexity - do not overload the learner with unnecessary details, (2) **introduction** - set the stage by identifying the setting, the form of participation and the major characters and objects, the goals and objectives, and directions and rules (the scenario), (3) **acquisition** - the learner develops the necessary background knowledge to perform the simulation correctly, (4) **application** - the learner applies what is learned in the acquisition stage, and (5) **assessment** - after completing the first four phases of the simulation a test of some kind should be administered to determine if the learner has mastered the content. The model also addresses the importance of **control** (system and learner) and states that the system

should have control over some aspects of the simulation, i.e., feedback, progressive levels of material, help (examples), and test criterion and the student should feel in control in other aspects, i.e., pace, level, etc..

Research on Simulations

Of the three categories of CAI; drills and practice, tutorials, games and simulations, it is the latter that concerns this study. In the literature review and for the purpose of this paper "simulations", "games" and "simulation gaming" are treated as homogeneous. A computer simulation is defined as a computer program duplicating actual market situations in a controlled manner that requires students to analyze situations, make decisions, and input their actions into the computer (Miller, 1985). The computer evaluates their decisions, calculates the results, and responds back to the students. Students experience the results of their decisions. Depending on the time needed for completing the game, simulations can be classified as small scale, medium scale, or large scale (Alpert, 1993). The larger the simulation scale, the greater the complexity and realism of the game. The length of a game can be as little as one day or as long as a semester. Simulations can involve individuals or student teams as operators.

Greenblat (1973) believed that simulation and game popularity and effectiveness as a teaching device stem from several sources of supposition, including: (1) the belief that the mind is an instrument to be developed not a receptacle to be filled; (2) the desire to find methods to promote curiosity and interest in learning; (3) the idea that students learn not because learning is a goal in itself, but because learning leads to goal

achievement; and (4) that learners learn to act by acting and therefore should learn actively rather than passively.

Faria (1989) highlighted some general advantages offered by simulations for use in industry; (1) they allow for learning in all areas of management and company operations, (2) a wide range of analytical techniques can be taught and used, (3) participants learn to work with others, 4) participant is active not passive, (5) participants gain experience without paying the price of wrong decisions, (6) self-paced, (7) time can be compressed, (8) feedback is immediate, and (9) managers are given a more global view of their business environment.

It is evident from the literature that simulations are widely used in a variety of fields of study. Simulations are found in the military, history, geography, religion, medical fields, science, language, marketing, bank management, accounting, economics, and mathematics (Alpert, 1993; Fisher, et al, 1977; Haley, 1990; Horn & Cleaves, 1980; McNerty & Waits, 1987; Sherrell & Burns, 1982). Simulations have been used most often in higher education, however, recently simulation use has been venturing into the primary and secondary schools.

The nature and use of simulations for instructional purposes is well documented. A recent study by Randel, Morris, Wetzel & Whitehill (1992) analyzed 67 cross-discipline studies comparing the effectiveness of simulations to conventional classroom instruction. Empirical studies from 1963 to 1991 were reviewed. The study found that mathematics is the subject area with the greatest percentage of results in favor of simulations. The study concluded that subject matter in areas with very specific content

are more likely to show beneficial effects for simulations (Randel, Morris, Wetzel & Whitehill, 1992).

Dekkers & Donatti (1981), using meta-analysis (analysis of analyses), evaluated 93 empirical research studies concerned with simulation for instructional purposes. The study divided the data into three categories; cognitive development, retention, and attitude formation. The data showed that simulation is only more effective than the lecture method for attitude formation. There was no evidence that computer simulation usage increased cognitive development or retention when compared with other teaching strategies. A recent article by Atkinson & Burton (1991) found a positive correlation between student use of a simulation and high scores on quizzes and course assignments.

Propositions from Greenblat's (1973) study concerning the pedagogical effects of simulation provides an efficient method of presentation. These propositions were drawn from empirical research findings and many articles and books citing claims about simulations. The six categories are: (1) motivation and interest, (2) cognitive learning, (3) changes in later course work, (4) affective learning, (5) general affective learning, and (6) changes in classroom structure and relations.

Greenblat's (1973) propositions have empirical and theoretical support. Alpert (1993) listed some benefits associated with the use of simulations that include: interpersonal communication skills, relationship management skills, strategic thinking under ambiguity, self-reliance, computer literacy, comprehensive and realistic marketing tasks/issues, creativity and risk-taking. By participating in a simulation, a student not only gains skills but also becomes familiar and more comfortable in working with

computers. Previous studies cite the importance of students not only being competent with computer applications, but using computers to improve problem-solving skills (Clayson, 1982; Dyer, 1987; Kurtz and Boone, 1987).

In simulations, the decision-making skills and problem-solving skills are improved upon as more information is gained through the progression of the program (Clayson, 1982). Literature by Kelley and Gaedeke (1990) support Clayson (1982) when they stated that problem solving skills could be developed through computer simulations. Bailey (1990) suggests that simulations also help the participants develop a greater self-awareness of managerial and interpersonal skills. Cooke and Maronick (1977) showed empirically that simulations do increase learning.

A critically important feature with simulations is the requirement that students participate in an activity rather than sit passively through lecture in class. The participants are required to be active and attentive, move at their own pace, get immediate feedback, receive training at their own leisure and in private. Simulations require students to make decisions based on limited knowledge. Simulations provide the opportunity for experiencing at least some of the elements of a "real" situation without the expense and time-consumption required in direct experience. Chambers and Sprecher (1983) believe simulations bridge the gap between abstract learning and application of what is learned and both Bredemier and Greenblat (1981) claimed that greater long-term retention of the subject matter is an outcome.

As more and more instructors use simulations as a teaching aid, the measurement of its effectiveness is becoming a critical factor in defining future application and

development. It is evident from the literature review that many claims of simulation effectiveness are supported by narrative data rather than empirical evidence and a great many do not meet the "canons of scientific inquiry." (Greenblat, 1973). Neuhauser (1976) believed that simulations were too highly regarded and have failed to accomplish what they claim. It has been often cited that a more careful and complete approach of reporting research findings is needed (Dekkers & Donatti, 1981; Greenblat, 1973; Neuhauser, 1976; Randel, Morris, Wetzel & Whitehill, 1992). Dekkers and Donatti (1981) evaluated 93 empirical research studies concerned with simulation for instructional purposes and found in many cases the design, validity, and reliability of test instruments and sample selection techniques were often not reported accurately. They concluded that in future studies attention should be given to reporting the methodology employed, the test instrument used, and the handling procedures of the data.

Research on Business Simulation

The extensive use of computers by businesses makes it imperative that schools with business related courses integrate computers into their curricula. College graduates must possess a fair amount of computer skills to effectively perform in today's work environment. Work by Rogers, Williams, and McLeod (1990) discussed computer usage of the 500 largest companies in the United States. They reported that entry-level marketing persons will spend an average of 23% of their time working on computers, 70% of marketing professionals use computer terminals in their work and 51% of *Fortune 500* company managers have a computer terminal for their own use up from 10%

in 1971. The authors recommended course offerings and content for microcomputer education in the marketing discipline to meet the needs of the current business environment. Miller (1985) discussed the benefits of integrating microcomputers into marketing education and proposed a model to facilitate the integration, including the use of simulation gaming. Turnquist, Bialaszewski and Franklin (1991) discussed common courses taught in business programs that incorporate microcomputers and computer simulations. Little research has been published documenting the adaptation, use and results of computer simulations in courses related to retail principles. Studies of marketing literature are relevant as retailing is often taught through marketing departments in business schools (Mikitka & Stampfl, 1994; Turnquist, Bialaszewski & Franklin, 1991).

Business simulations are a direct descendent of war games. In 1955, the US Air Force implemented a logistics simulation called *Monopologs* and considered it to be a highly successful training tool. The first business simulation game was used in a college class at the University of Washington in 1957 (Whiteley & Faria, 1989). The number and variety of business games has grown enormously since that time. Faria (1990) found that 71.1% of 107 American Assembly of Collegiate Schools of Business (AACSB) member schools were using at least one simulation game in 1962. By 1975 usage at the same schools increased to 94.5% and the number had risen to 95.1% by 1987. A survey of training and development managers of businesses across the United States found that 54.7% of those responding indicated that their companies use simulation exercises as part of their training programs (Faria, 1989).

The high level of interest in simulation games can also be seen in the growth of journals, organizations and publications devoted to simulation gaming. Journals specifically covering simulation games are *Simulation and Games* and the *Journal of Experiential Learning and Simulation.* Specific organizations geared to gaming are the Association of Business Simulation and Experiential Learning, the National Gaming Council, The North American Simulation and Gaming Association, and the International Simulation and Gaming Association.

The business simulation evaluation literature is wide-ranging and extensive. In a study by Wolfe (1990) over 300 articles were identified and reviewed. To help alleviate the situation this review will report only those studies that were found to be the most salient individual studies.

In a study by Raia (1966) three groups were formed in a college business policy course; one group was assigned case only, the second group used a simple game and cases, and the final group used a complex game and cases. Raia concluded that games and cases combined, regardless of the complexity of the games, produced higher knowledge levels than were obtained when the course was taught with case and readings. Raia also found that the computerized simulation game heightened student motivation and interest.

Wolfe and Guth (1975) evaluated students in a two business policy courses. One course was case only and the other was simulation only. The study compared the students from each course. The students in the simulation only course were found to possess a higher overall understanding of business policy course material than the

students in the case only course.

Sherrell and Burns (1982) compared four teaching methods; (1) case study, (2) experiential exercise, (3) a conventional approach, and (4) simulation. No differences in cognitive learning were found among the simulation, the case study or the experiential exercise. However, the study showed that the simulation performed better in terms of perceived knowledge gained, enjoyment with the experience and believed acquired decision-making skills. They also found that the attitude scores for the simulation group were significantly higher than those for the other three teaching methods.

In a study by Burns and Sherrell (1984) four groups of students enrolled in a principles of marketing course were compared. Subjects were randomly assigned to: (1) one-way delivery group, (2) case study group, (3) experiential exercise, and (4) microcomputer simulation group. As hypothesized, no meaningful increases in learning occurred over the one-way approach. However, significant gains in attitudes are found in the simulation group over the other three groups.

Whiteley and Faria (1989) conducted a study that used 189 students with the same instructor, lecture, films, readings, exams, and exam times. The results of the study showed that simulation games were an effective mean to improve quantitative skills, but not effective to improve the acquisition of applied or theoretical knowledge.

In a study aimed specifically at retail merchandising, Jolly and Sisler (1988) investigated the effects of teaching method (simulation vs. case study) for teaching apparel merchandising concepts in a major university. Results of the study indicated that students did not differ significantly in cognitive learning based on teaching method. This

was consistent with Pierfy (1977), Dekkers and Donatti (1981), and Whiteley (1989), but inconsistent with research by Raia (1966), Wolfe and Guth (1975), Cooke and Maronick (1977), Sherrell and Burns (1982), and Burns and Sherrell (1984). Furthermore, findings on the variation of student's attitudes with teaching method and was not consistent with other researcher's positive view on simulations and attitudes (Burns and Sherrell, 1984; Cherryholmes, 1966; Pierfy, 1977; Raia, 1966; Sherrell & Burns, 1982).

The inconclusive and assorted findings regarding the efficacy of business simulations may be attributed, in many cases, to the design, validity, and reliability of test instruments and sample selection techniques not being reported accurately. As with simulation research in general, attention should be given to reporting the methodology employed, the test instrument used, and the handling procedures of the data (Cherryholmes, 1966; Kulik & Kulik, 1987; Pierfy, 1977; Wolfe, 1990).

CHAPTER III

PHASE I: SIMULATION QUESTIONNAIRE

In today's high-tech society, computer exposure and training are important components of a balanced education. However, little is known about what retail educational institutions are teaching students and what the industry expects students to know when joining their organizations. To bridge this chasm, a questionnaire was developed to better understand the extent to which computers are used in retail curricula and by retailers for selection, decision and training employees. The questionnaire surveyed both educational institutions and practicing retailers to gain insights regarding their expectations. By using these two samples, educational topics and variables were synthesized for use in developing computer simulation software aimed specifically at selected retail activities. The software was then be developed, tested and evaluated.

Methodology

Questionnaire Development

Two preliminary questionnaires were developed: retail educators and corporate retailers, respectively (Appendix A). The questions dealt with opinions concerning the use of simulations and the important characteristics and variables that shape retail situations. The educational survey was geared toward student computer exposure and

simulation usage within selected colleges and universities in the United States. The industry survey was geared toward hiring criteria, computer usage and industry opinion concerning recent college graduates. On the two respective questionnaires there were five identical questions focusing on the creation and use of computerized simulation programs. The five questions allowed the respondent to chose the variables they believed most important for a computer simulation to contain.

Sample

Geographically, the combined sample included twenty states throughout the United States. Regions were used as defined by the U.S. Government Census Data definition of regions (Figure 3.1).

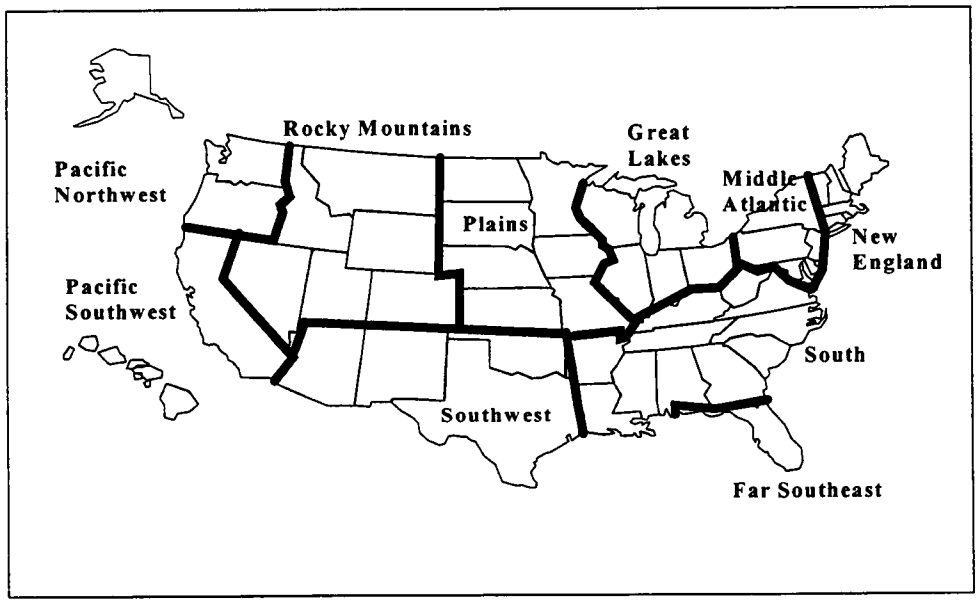


Figure 3.1. Surveyed Regions

The breakdown of survey percentages by region is as follows: the Pacific Northwest region (3.5%), the Pacific Southwest region (8.8%), the Southwest region (10.5%), the Far Southeast region (5.3%), the South region (15.7%), the New England region (7.0%), the Middle Atlantic region (12.3%), the Great Lakes region (21.1%), the Plains region (12.3%) and the Rocky Mountains region (3.5%). The sampling procedure was based on a judgement method as all surveys were sent to respondents based on their position, employer and/or institution.

The first sample, the educational institutions, were chosen based on their curriculum in retailing, i.e., all institutions offered an undergraduate level program in retailing. The sample of education respondents were selected from the listing of schools offering a major in retailing published by American Collegiate Retailing Association (ACRA), a professional organization for retail educators. A total of forty educators were chosen and sent a questionnaire. They were questioned on their programs' course content and the extent of computer simulations assisting their teaching. Furthermore, they were asked to comment on how well they believe they adequately prepare their students for the retail industry. The job positions of the sample were Assistant Professor (35%), Associate Professor (15%), Professor (19%), Department Head (8%), Director (19%) and Dean (4%). The academic institutions surveyed varied in size from major universities (53%), smaller state schools and universities (28%), private institutions (7%) and community colleges (12%).

For the second sample, the retail industry, human resource departments of retail organizations were used. The retailers chosen were companies hiring entry-level college

graduates for various management training programs. The names and addresses were gathered from published materials listing employment opportunities for graduating retail students and from data gathered at the University of Tennessee's Career Planning and Placement Center. A total of thirty-five retail organizations were chosen and sent a questionnaire. The retailers were asked to state their overall expectations and desires for retailing students entering their enterprise and ultimately if their goals are reached. Store formats represented (as defined by Levy & Weitz, 1995) were specialty stores (20%), department stores (27%), discount stores (33%), off-price stores (13%) and catalog (7%).

Results

The questions gave the respondents a number of choices between alternative answers and then allowed them to make additional comments or qualifying statements to their selected answers. For the purpose of this study, only pertinent questions will by analyzed and reported. The industry and education response percentages of the five common posed to each sample groups are shown in Table 3.1. A full listing of all questions and responses of both questionnaires are found in Appendix A.

Academic Response

The rate of response for usable surveys returned from the retail academia was 63% or twenty-five respondents. Retailers were asked to give their opinions on various factors of retail education they believed important if they were to create their own retail simulation computer program.

Academic response for students to work in groups was (43%) vs. as individuals (5%). Some fifty-two percent of educators believed that it would be important for students to work in both groups and as individuals. The literature reviewed (Alpert, 1993; Kelley & Gaedeke, 1990) felt that groups or teams were the most beneficial educational method as the team environment required interpersonal and communication skills. These skills are often cited by recruiters as the most important hiring criteria for entry-level positions (Alpert, 1993; Boatwright & Stamps, 1988; Kelley & Gaedeke, 1990).

The majority of educators (72%) felt that students should be gauged by the preset retail standards (preset refers to industry standards). The remaining educators (28%) believed that competition among the students was the best method to structure the simulation. Although, one academic respondent remarked that they would "hate to have a loser" if students were competing against themselves.

The respondents were then asked what the objective of the simulation would be. The most important criterion chosen by educators was the completion of problem solving skills (67%). Educators rated small retailer decision format, department manager decision format and buyer decision format at 29%, 37% and 34%, respectively.

The last pertinent question dealt with types of decisions that retailers thought the simulation should cover. Most of the respondents chose a combination of answers. The four leading areas for educators were "Retail Strategy" (16%), "Product Merchandising" (15%), "Marketing" (15%) and "Employee Performance" (15%). The least chosen area for educators was "Customer Service" (12%).

TABLE 3.1
VARIABLES IMPORTANT IN A RETAIL COMPUTER SIMULATION PROGRAM

Response	Academic Response	Industry Response
Student Work in Groups	43%	56%
Student Work Individually	5%	22%
Both Group and Individual Work	52%	22%
Compete Against Preset Standards	72%	67%
Compete Against Other Students	28%	22%
Both Preset Standards and Other Students	0%	11%
Objective:		
High Sales	4%	17%
Increase Customer Base/Service	4%	28%
High Profit	25%	22%
Problem Solving	67%	33%
Other	0%	0%
Format:		
Small Retail Store	29%	44%
Department Manager	37%	44%
Retail Buyers	34%	0%
Some Other	0%	11%
Decisions Required:		
Financial	14%	15%
Marketing	15%	13%
Employee Performance	15%	20%
Customer Service	12%	20%
Buyer/Vendor Relations	13%	4%
Product Merchandising	15%	13%
Retail Strategy	16%	15%

Additionally, the educators' survey included several specific questions on simulation use in their course curriculum. Table 3.2 reports the response percentages. The majority (76%) responded that they currently use a simulation in their course curriculum. An overwhelming 100% agreed that simulations are helpful to students. And 95% of the education respondents believed that there is a need for better educational simulations.

TABLE 3.2
SIMULATION SOFTWARE IN ACADEMIA

Current Simulation Use	76%
Believe Simulations Helpful	100%
Believe Need Better Simulations	95%

Industry Response

The response rate for usable surveys returned from the industry was 37% or thirteen respondents. The response rate received was higher than previous studies in related surveys. Previous studies cited an average response rate between 15% and 20% (Rogers, Williams & McLeod, 1990). Industry response in favor of students working in groups was 56% whereas 22% thought that individual work was most beneficial. Some retailers (22%) thought that students should work both in groups and individually to make decisions.

The majority of retailers (67%) felt that students should be gauged by the preset

retail standards. One industry respondent commented that "there need to be guidelines set for what really happens, not what may happen." Eleven percent of the industry respondents thought that both criteria should be used. Twenty-two percent of the retailers believed that competition among the students was the best method to structure the simulation.

The most important objective of a computer simulation chosen by retailers was the completion of problem solving skills (33%). Retailers chose customer service related issues as the second most important objective of the game (28%), the high profit objective scored 22% and they felt that the highest sales objective was the least important (17%). Respondents were also asked to choose the kind of game they would create. Retailers selected "Operating a small retail store" and "Decisions confronting a department manager" equally at a rate of 44%. Their remaining response (11%) was "Some other format" and no retailer chose "Decisions made by retail buyers." The four leading decisions or issue areas for industry respondents were "Employee Performance" (20%), "Customer Service" (20%), "Financial" (15%) and "Retail Strategy" (15%).

Summary

Combining the above responses from educators and retailers revealed that: (1) a simulation game could be based on team and individual effort using preset industry standards; (2) the objective of the game should concentrate on problem solving skills; (3) the format should focus on either a small retailer or department manager responsibilities; and (4) decisions should be based on retail strategies, financial concerns, employee

performance and customer service (Table 3.3).

TABLE 3.3
MOST DESIRABLE VARIABLES IN A SIMULATION

Users:	Teams and/or Individuals
Criteria:	Preset Industry Standards
Objective:	Problem Solving Skills
Format:	Small Retailer and/or Department Manager
Decisions Required:	Retail Strategies
	Financial Concerns
	Employee Performance
	Customer Service

Discussion

Phase I of this study supported some of the findings of previous research regarding simulation use and marketing students, even though this study was directly geared toward retail education programs and employers hiring retail students for entry-level positions. All respondents believed that computer simulations were beneficial in teaching the necessary skills required of a college graduate seeking to become competitive in the marketplace. In examining the results, the opinions of retailers and the opinions of educators have several discrepancies in preferences. It is important that simulation software created for students in retail programs correspond to meet the needs and wants of the actual retail profession. This study provided realistic and useful information that can be considered when preparing simulation software, as educational material, for retailing students.

It is interesting that the industry respondents did not feel that the buyer/vendor relations area was important. In the questions dealing with this topic, no corporate retailer chose buyer decisions as the focus of the game and, secondly, this area was the least important area for decision making. These responses could be accountable for the fact that I surveyed store owners and human resource personnel that are typically grouped in the store management area. It is possible that if the respondents were in the store management area, they may not be aware of or feel that the buying function is an important skill to teach in a retail education. Or, perhaps the industry respondents interpreted "buying/vendor relations" as the actual relationship, rather than strategic buying decision/planning activities. Furthermore, store owners may be very interested in their own vendor relations, but may not see the pertinence for educating students since few would become store owners.

CHAPTER IV

PHASE II: SIMULATION DEVELOPMENT

The second phase of the study involved the development of a computer simulation program for use in applying retail management concepts. This chapter outlines the procedures that were required for development of the simulation. Developmental steps include establishing the simulation objectives, simulation development terminology and finally, the development processes of the computer simulation.

Simulation Objectives

The information gathered from the literature review and summary of Phase I provided information on the current usage and desired uses of the computer in the retail industry and academia. The results from the study covering the most desirable variables in a simulation provided the foundation of the simulation. Accordingly, the overall objective of the simulation is to teach retail mathematical concepts coupled with application on the computer and will concentrate on increasing problem solving skills. Specific objectives are: (1) to develop a simulation that may be used in teams and/or individuals, (2) to increase problem-solving skills and decision-making skills, and (3) to focus on increasing exposure to strategies and financial concerns found in retail management.

Simulation Development Terminology

It is important to define some terminology included in this study that is used by developers of computer simulations. An **authoring system** is a computer program that permits the user to create computer-based instructional lessons without writing the computer code itself. People who use an authoring system to create computer-based instructional lessons are called **authors**. People who create the design specifications for lessons are called **instructional designers/developers**. Instructional designers/developers create **storyboards** that specify where and what type of information will appear on the screen. Instructional designers/developers also use **flowcharts** to represent the flow and logic of the lesson. A **runtime prototype** is an initial copy of the lesson. A **lesson** is a self-contained block of instruction on a single topic usually completed in a single setting. A **unit** is a collection of related lessons all of which help the learner acquire sufficient background information on related material. A **screen** consists of all the information that a learner would see on a single screen. Each screen is composed of a number of **components**. The **base component** is the portion of the screen that appears when the screen is initially displayed. Subsequent components that are displayed on the initial screen, but without clearing the entire screen, are called **overlay components**.

Simulation Development

The development of the computer simulation took place in the steps suggested by Reigeluth and Schwartz (1989). They described a simulation in terms of three major

aspects: (1) the scenario, (2) the underlying model, and (3) the instructional overlay. This chapter will outline the development stages by the above three aspects. Within these three aspects lies Reigeluth and Schwartz (1989) general model for simulation development, i.e., complexity, introduction, acquisition, application, assessment and control. Figure 4.1 presents a developmental model for computer simulations used for this study, adapted from the Reigeluth and Schwartz (1989) model.

The Scenario

The first step in the development process was the scenario. The scenario of a simulation recreates, to some degree, a real life situation. The function for the proposed simulation developed for this study is application of retail mathematics for undergraduate students. The scenario of the simulation places the user in a buyer's position of a department within the merchandising division of a department store. The design will focus on planning activities for upcoming season.

The format for the application of retail mathematical concepts is a six-month merchandising plan. The merchandise plan is used by buyers to set merchandise goals and objectives (in dollars). The plan specifies how much money should be spent each month to support sales and achieve set objectives. Although retailers use variations on this basic format, the information found in Table 4.1 is generally found in such plans. Some retailers develop their own merchandise planning systems, others may purchase them from consulting firms. Levy and Weitz (1995) state that even relatively small specialty stores now use advanced computer technologies to plan merchandise budgets.

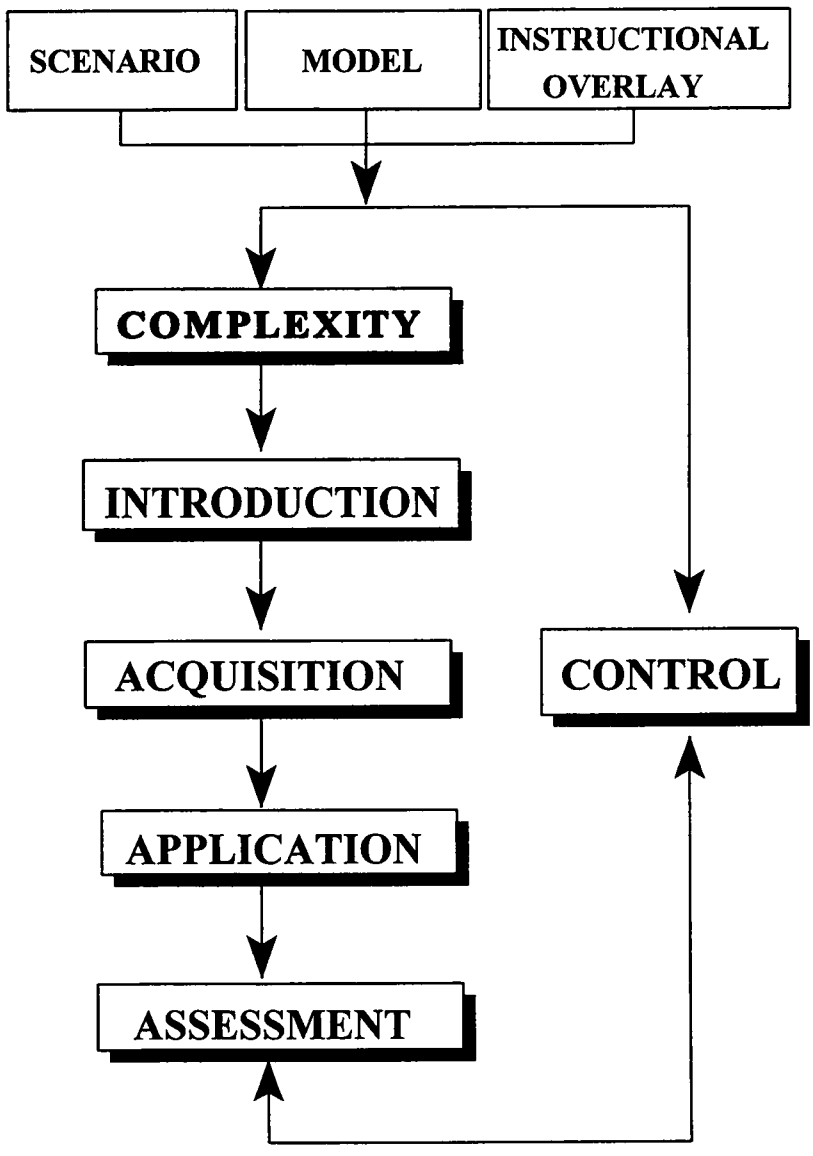


Figure 4.1. General Model for Computer Simulations

The six-month merchandising plan is the runtime prototype. The basic elements of the plan are sales, markdowns, opening (BOM) inventory, closing (EOM) inventory, and purchases.

With the six-month merchandising plan as the focus of the simulation it was necessary to create background data and instructions to support the scenario. The student instructions that accompanied the program are found in Appendix B. The data consisted of a hypothetical department store history, locations, number of stores in the chain, store characteristics, store policies, and the store mission statement. Additional data provided with the case included trading area demographics, i.e., buying income statistics, cost of living index lifestyle statistics, unemployment averages, cost of living and weather for the trading region (Appendix B). All trading area information and statistics were procured from the local Knoxville Chamber of Commerce in Knoxville, Tennessee.

The assignment places the user in the position of buyer of one of five departments due to reorganization within the merchandising division. The departments were chosen based on the National Retail Federation's 1994 Merchandising and Operations Results (MOR) classification of departments. The five departments are: (1) linens and domestics, (2) toddlers and infants, (3) misses sportswear, (4) men's, and (5) food, candy and beverage. The student user must develop a Fall/Winter six-month merchandising plan in a limited time frame.

The second part of the assignment requires the user to produce written rationale and defense of the plan. Defense of the plan must be based on all trading area data available pertinent to the respective department, i.e., demographics, economic

environment and consumer buying power, location, competition, etc..

The Model

The next step in the development process was the actual design of the computer program. Traditionally, programmers used a basic computer language, i.e., Basic, Pascal, etc., to create programs for the computer. However, there are several authoring systems that permit the user to create programs without writing the computer code itself. It was decided that such a system would be optimum for the objective of this simulation.

After an extensive search, an authoring system was selected. The chosen authoring system, *Visual Baler version 1.0*, was picked based on several factors. *Visual Baler* (1994) is a specialized spreadsheet program that focuses on features needed for creating programs for others to use and is designed to be used by experienced spreadsheet users and software developers. Unlike regular spreadsheet software, *Visual Baler* outputs professional, stand-alone, tamper-proof, Windows-based applications. The output programs from *Visual Baler* requires no other software to run except Microsoft Windows 3.1 or higher. In other words, there is no need for an existing spreadsheet program, e.g., Lotus 1-2-3, Microsoft Excel or Quattro Pro, to run the program. The output programs also take a small amount of disk space and therefore, there is no need for powerful computers. Additionally, *Visual Baler* allows the developer to customize almost every interface element and applications can completely shed their spreadsheet appearance. An underlying objective for this simulation was to create a program that does not resemble a generic spreadsheet type environment. Therefore, colors, graphics and sound were used

as much as possible. Lastly, it allows the author to produce very polished, user friendly programs.

After the authoring system was chosen the next step in the developing process was to create storyboards that specify where and what type of information will appear on the screen (Figure 4.2). This function sets the overall format for the unit of lessons and layout with general components that will be included on each screen. Storyborads represent the "story" of the program with the different "chapters" (screens) that are involved.

Following the completion of the storyboards the next step in the developing process was to create a flow chart to represent the flow and logic of the lesson (Figure 4.3). A flowchart is a pictorial plan showing what the computer does and in what sequence it does it. They serve as guides for program flow of logic and debugging. The actual program coding began after the flowcharts were completed. The following paragraphs outline the computer simulation in sequential order as seen by a user. Omitted form this chapter will be any reference to specific steps involved in actual programming of the authoring system.

The first screen that appears while the program is loading is called a tittle screen. It normally takes up the entire screen of the monitor and introduces the program while making a smooth transition into the simulation's opening screen. The title screen that was developed for this simulation (Figure 4.4) incorporates both color and graphics to generate an initial interest in the user and provide a professional look to the program.

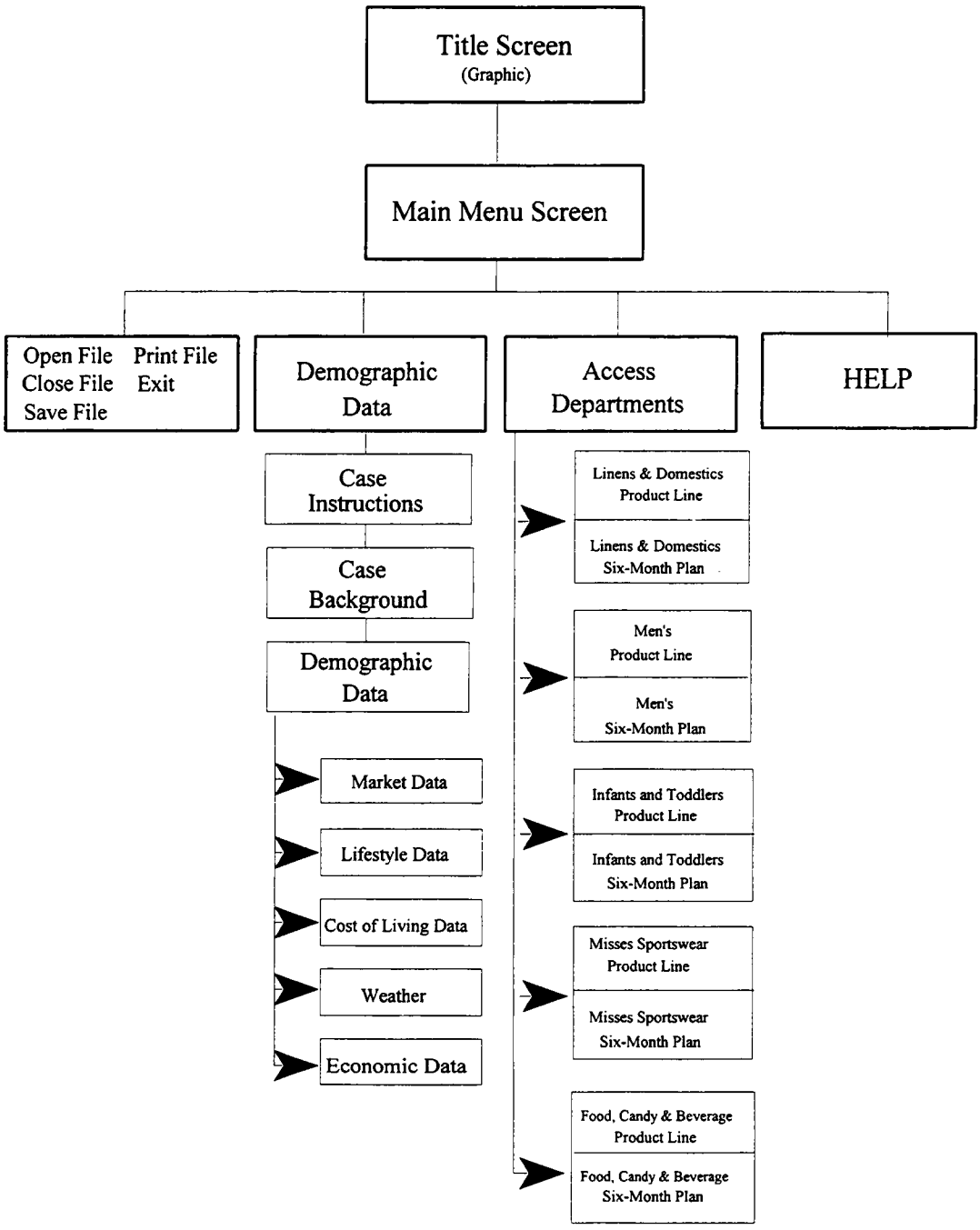


Figure 4.2. Simulation Storyboards

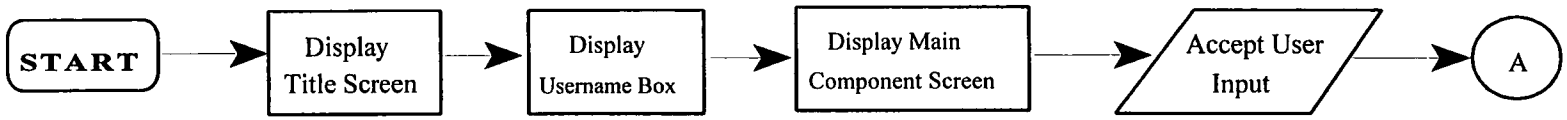


Figure 4.3. Flowchart of the Six-Month Merchandising Planning Simulation

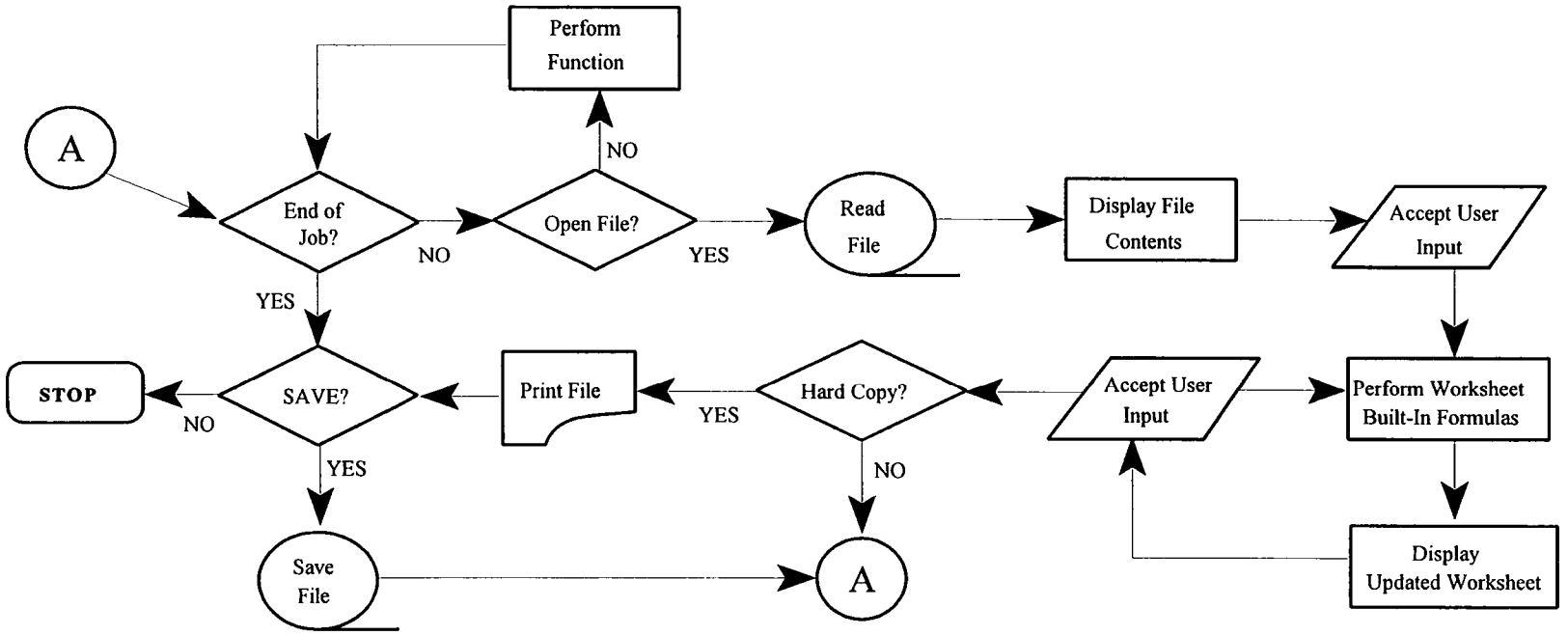


Figure 4.3. (continued)

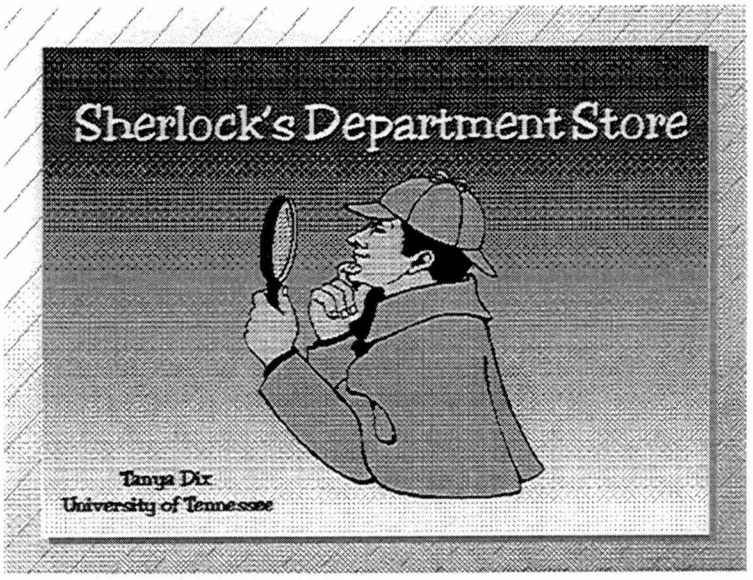


Figure 4.4. Title Screen for Simulation

The next screen (Figure 4.5) runs a built-in program macro requesting the name of the user or users. In order to continue the user must type a name in the space provided. This component stores the user's name and will automatically print the name onto every page that is sent to the printer. This will reduce ownership confusion of outputs in a classroom if several users are printing their files at the same time.

After the user's name is entered the program will automatically progress to the first screen (Figure 4.6). This is the base component screen. All other screens created are regarded as overlay components and will be displayed without clearing the base component screen. The main menubar is arranged in the regular Windows pulldown menu style in the interest of keeping the familiar components of existing Windows-based programs. A pulldown menu contains a list of commands, which are actions you can

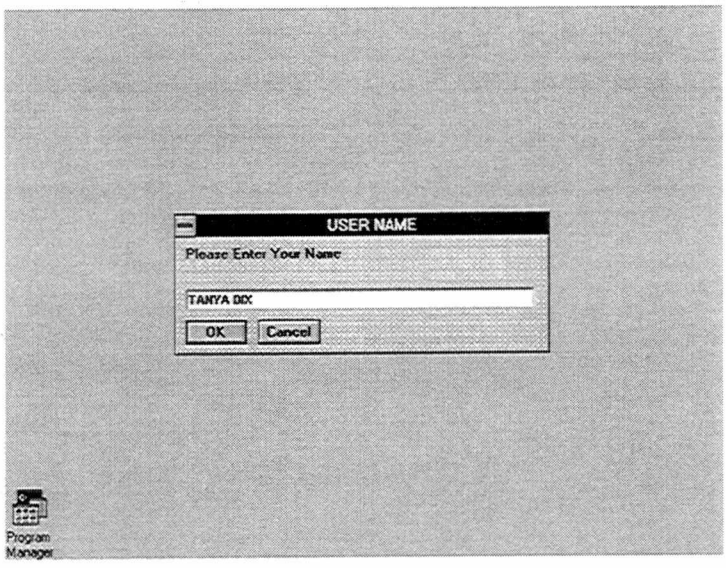


Figure 4.5. Username Macro Screen

carry out in the simulation application. To choose a command, you click it once with the mouse. Most windows have certain elements in common, such as a title bar and a menu bar. The control-menu box is in the upper-left corner of each window and is used to move, size, and close a window. The title bar shows the name of the application, document, group, directory or file. The maximize button enlarges the active window so that it fills the entire screen. The minimize button reduces the window to an icon. Additionally, in this computer simulation a custom toolbar and a status bar are found on the base component screen. A tool bar is below the main menubar and contains graphic icons of utility options. For instance, the user is able to save, close, print, cut, copy, paste and get help instantly by clicking once on the appropriate icon. The status bar is at the bottom of the screen and shows the date, time, status and hints for the user. When the user moves the mouse arrow over a cell on the worksheet, the hints or tips bar cell at the

bottommost right hand corner displays comments, equations or formulas that are helpful for the user. These hints or tips were included by the author/developer.

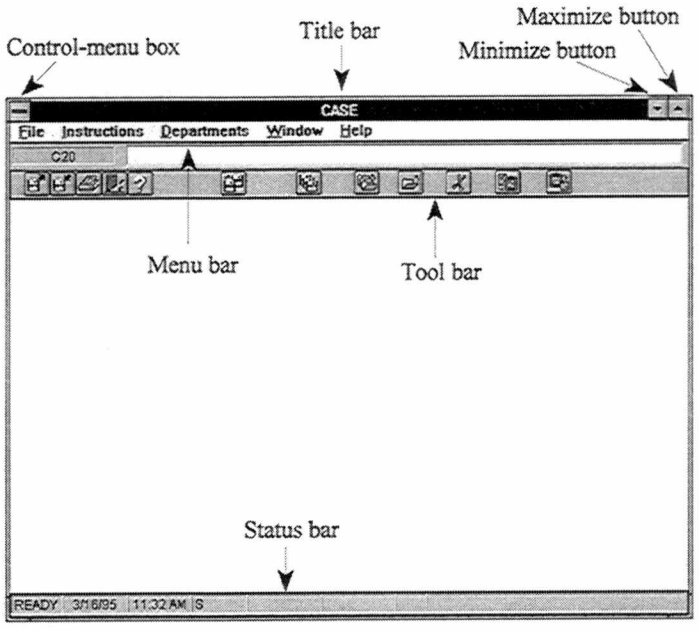


Figure 4.6. Base Component Screen

On the menubar, the furthest left menu option is called "File." (Figure 4.7) This pulldown menu allows the user to open, close, save, save as, print, change printer setup and exit the program. This is commonly referred to as the utility menu and is found in this position on virtually all windows based programs.

The next pulldown menu to the right is called "Instructions" (Figure 4.8). This pulldown menu allows the user to access the case instructions, the case background, and all the external environmental demographic data. Appendix B contains the case that accompanies the simulation. The case includes background data, current data, local

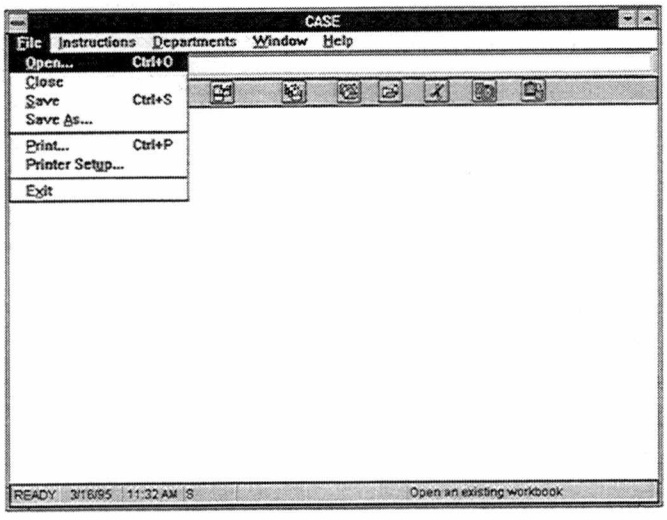
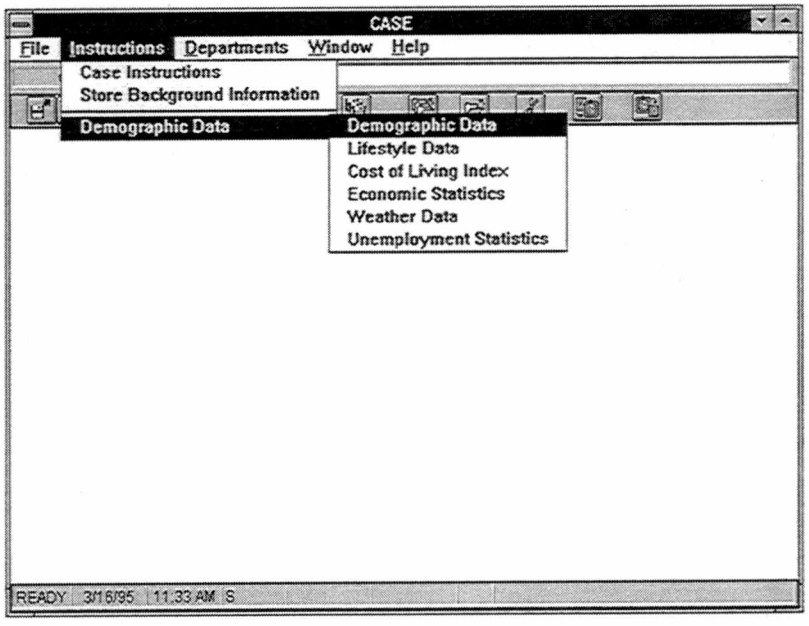


Figure 4.7. File Pulldown Menu Screen

competition, instructions, demographic and lifestyle data, economic data, weather and unemployment statistics. All data included in the case write up can be accessed in the simulation in the form of computer files. This is a helpful feature if the user does not physically possess the case instructions upon using the simulation. Any file may be sent to a printer for hard copy. Color has been added to stimulate the vision of the user. An example of the case background screen and the demographic screen can be found in Figure 4.8.

For example, if the Case Background option is selected from the "Instructions" pulldown menu than the bottom screen in Figure 4.8 would instantly appear. This screen provides the user with exactly the same information as would be found in the hard copy of case instructions.



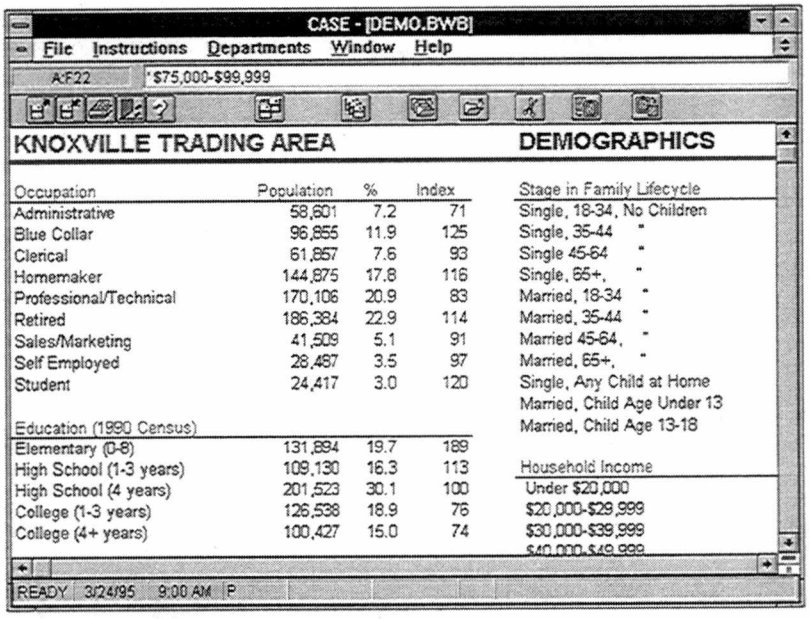


Figure 4.8. Instruction Pulldown Menu and Demographic Screens

The pulldown menu entitled "Departments" contains the focal point of the simulation (Figure 4.9), i.e., the six-month merchandising plan worksheet. As noted above, the six-month merchandising plan was chosen as the vehicle in which to base the simulation to teach retail management concepts. In this pulldown menu the user may access the five different departments for either the product line or the actual six-month plan worksheet (Figure 4.9). The product line consists of a generic line of possible items carried in each department. The six-month plan worksheet resembles a form with several open cells for input.

By applying an industry standard format for a six-month merchandising plan, a worksheet was developed that contained formulas and self generating macro commands. Appendix C contains the starting six-month merchandising plan worksheet for each department that is used in this simulation. The starting worksheet contains figures (dollars, percents, ratios) pertinent for each department. The user's completed worksheet will produce a hardcopy such as these generic worksheets.

In developing the worksheets, attention was given to providing accessibility and ease of use while imputing data. Horizontal and vertical scroll bars were incorporated and text help notes were attached to cells to help explain how the worksheet functions. The cells are pre-formated, i.e., only the correct percent, dollar or ratio format will be accepted. Finally, cell protection was added to allow input only into approved cells. Thus, a virtually impenetrable, secure and uncomplicated environment for the user.

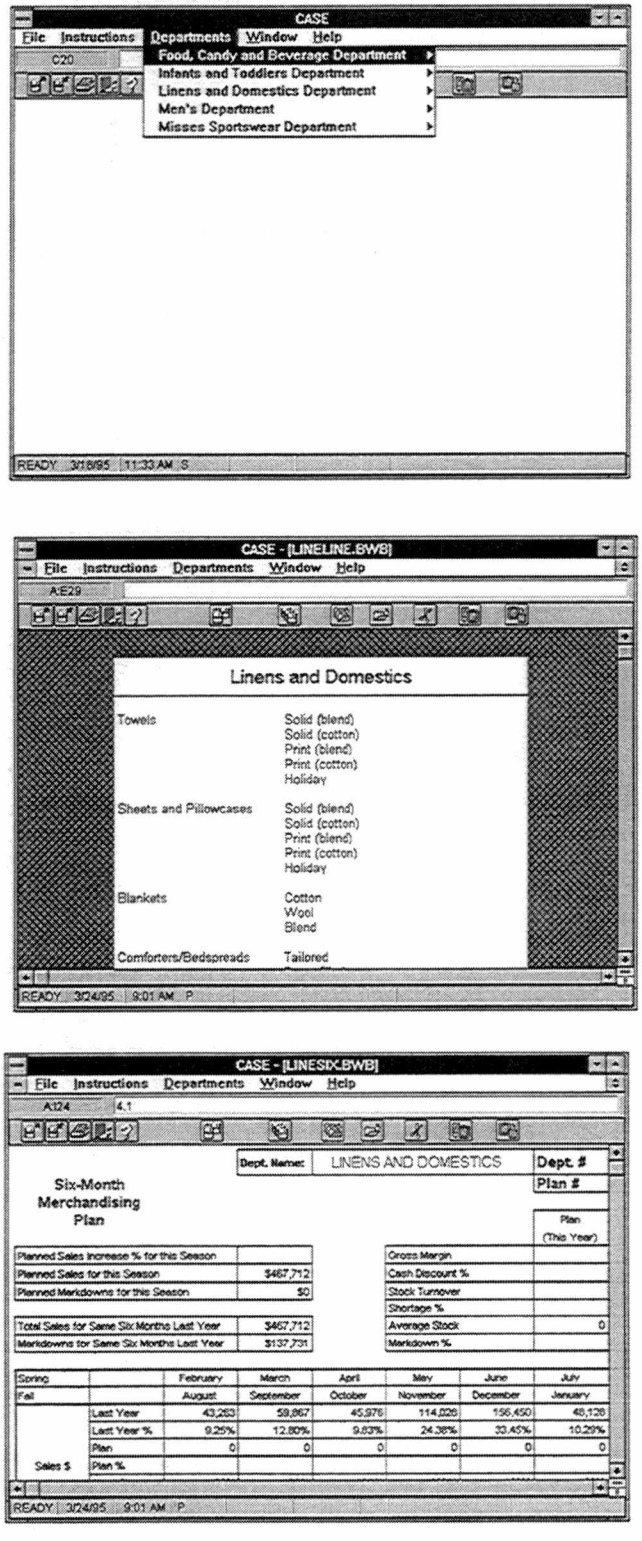


Figure 4.9. Department Pulldown Menu Screens

The next pulldown menu option is called "Window" (Figure 4.10). This menu contains standard Windows options. To reach optimum effectiveness users can customize their screen to suit their desire, i.e., cascade, tile and arrange icons. The

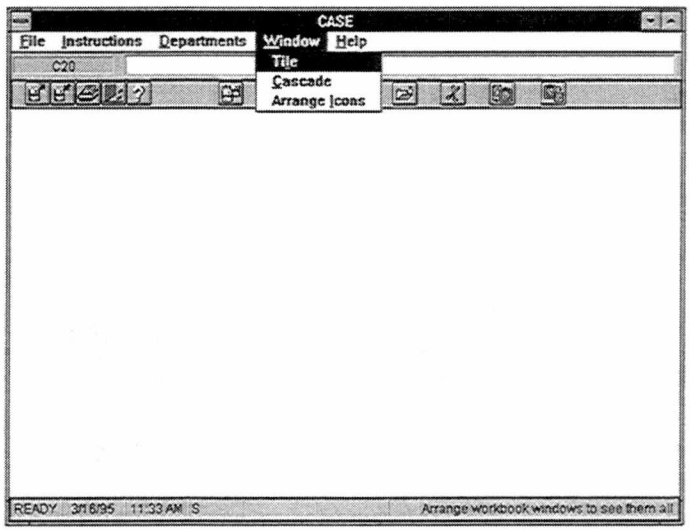


Figure 4.10. Window Pulldown Menu Screen

Window Cascade command shows all open workbooks windows overlapped. It shows the title bar with each workbook's name so the user can click on the one they want to be active. The Windows Tile command displays all open workbook windows without overlapping. When a workbook is minimized it becomes an icon and the Arrange command displays all the icons neatly across the bottom of the main window.

The final pulldown menu is called "Help." (Figure 4.11) This menu activates a context sensitive on-line help. It uses standard Windows help interface that users are familiar with if they use Windows programs. If the "Search Index" from the Help

pulldown menu is chosen the user can explore the help text for the information they need. All retail terminology used in the six-month merchandising plan as well as formulas and equations are included in the help.

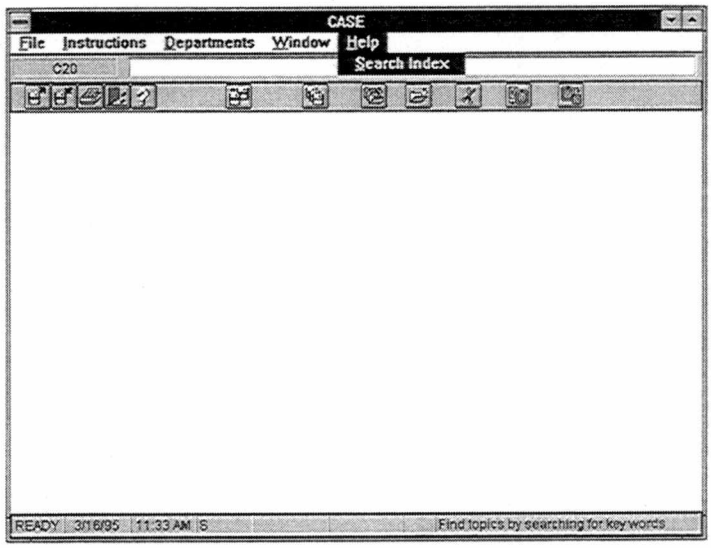


Figure 4.11. Help Pulldown Menu Screen

The Instructional Overlay

As stated above in the scenario the simulation places the student in a buyer's position of a department within the merchandising division of a department store. The complexity of the simulation is geared towards upper-division undergraduate students enrolled in a course concentrating on retail mathematics. The students must acquire a basic knowledge of retailing concepts before application of the simulation. The level of difficulty is directly related to the level of user involvement and on the users grasp of the

retail mathematical concepts including possible strategies. In other words, the simulation was developed to provide an outlet for knowledge gained throughout the course. The more involved the user is in learning the course principles the less complicated the simulation.

The design is presented in such a way as to allow the student to apply the concepts from class to a realistic situation via the six-month merchandising plan. This budget plan incorporates many typical elements of the retailing field. Thus, there will be relevancy with other related course work. In making the choices for the six-month plan, the users decision-making processes are exercised and improved upon.

The second part of the assignment requires the user to produce a written defense that contains rationale of the proposed plan. This activity is also a simulation device, since typically retail buyers propose their budget and goals for a season to a superior (i.e., merchandise manager) and must be in a position to defend its contents. Problem-solving skills were improved upon by requiring the user to incorporate external information and data to the specific task at hand. Assessment is given when (1) the user's numbers were generated and a "bottom line" is reached in which the user could compare with others and (2) when the users final grade for the finished report is assigned by the instructor (supervisor). The simulation will require either team and/or individual effort and allows the user to be in control of the pace.

CHAPTER V

PHASE III: STUDENT PARTICIPATION AND SIMULATION RESULTS

The third phase of the study was to evaluate the computer simulation with student participation. Included in this chapter are participant selection, development, administration and analysis of the attitude survey, and concluding remarks.

Participant Selection

Participants in this study were enrolled in an undergraduate upper-division retail and consumer sciences course entitled "Retail Buying" at the University of Tennessee in Knoxville. This course is a requirement for students with a major or minor in Retail and Consumer Sciences at the University.

There were a total of twenty-eight students enrolled in the Spring 1995 semester of this course. There was a gender mix of seventeen females and eleven males with an age range of 19-23 years old. Class lecture accounted for fifty minutes, three days a week coupled with a two-hour lab once a week for each student (lab did not meet every week throughout the semester). The two lab sections took place in the college computer lab classroom. The computer lab classroom has 21 computers linked via a local area network (LAN). The developed simulation program was put on the computer server connected via the network.

Development of the Attitude Survey

A literature search revealed several suitable attitude scales. The attitude scales used in this study were adapted from previous studies (Jolly, 1983; Sherrell & Burns, 1982). These scales were based on Greenblat's (1973) theoretical propositions concerning the effects of simulations. The propositions by Greenblat (1973), Sherrell and Burns (1982), and Jolly (1983) can be found in Appendix D.

Greenblat's (1973) propositions summarized the existing claims and evidence concerning the use and the effectiveness of simulation games. The numerous propositions were organized into six general categories, (1) motivation and interest, (2) cognitive learning, (3) changes in later course work, (4) affective learning regarding subject matter, (5) general affective learning, and (6) changes in classroom structure and relations.

Sherrell and Burns (1982) divided the above propositions into five factors and included thirty-one items on their instrument. The five factors are: (1) perceived knowledge, (2) enjoyment, (3) perceived benefits, (4) student/teacher relations, and (5) decision skills. Jolly (1983) included 34 questions on her instrument and divided them into seven groups. The groups are: (1) motivation and interest, (2) perceived learning, (3) changes in the character of later course work, (4) affective learning (subject matter), (5) affective learning (general), (6) change in classroom structure and relations, and (7) enjoyment.

The survey for this study (Appendix E) incorporated and modified the three studies listed above and resulted in six modules; (1) motivation and interest, (2)

enjoyment, (3) perceived knowledge, (4) affective learning (general), (5) affective and cognitive learning (retail specific), and (6) classroom relations. A total of 32 questions were included in the survey for this study. The thirty-two questions from the survey were organized into six modules; (1) motivation and interest, (2) enjoyment, (3) perceived knowledge, (4) affective learning (general), (5) affective and cognitive learning (retail specific), and (6) classroom relations.

Survey Administration

The survey was administered on the day the computer simulation assignment was due. The participants were informed that the results of their survey would in no way effect their grade on the project. The time to complete the survey was from 5-8 minutes. There were a total of twenty-four (N=24) usable surveys. Gender mix was nine males and fifteen females.

Results

The mean, standard deviation and minimum/maximum range were computed for each question using the Statistical Analysis System (SAS). The SAS results by individual item can be found in Appendix F.

The study examined the mean scores for each question. The survey scores (based on Likert Scale) corresponded with the degree in which the student agreed or disagreed with the proposed item. The scale was from 1 (Strongly Disagree) to 5 (Strongly Agree). Thus, the midpoint or neutral zone would be a score of three. For this study a score level

of above three would be considered a positive attitude and score level below three would be considered a negative attitude. There are three exceptions that will later be explored. Table 5.1 presents the six modules and the corresponding mean scores.

The two highest individual score levels are both found in Module 5: Affective and Cognitive Learning (Retail Specific). The statement "This exercise increased my awareness of difficulties involved in six-month planning" had a score of 4.42. Additionally, the statement "The exercise increased my insight into the ways in which retail store decisions are made" obtained a score of 4.38. These scores indicate that the simulation was extremely helpful in presenting material on the retail organizations and the procedures involved in retail decision making.

The lowest two individual scores were both found in Module 6: Classroom Relations. The lowest score was 2.79 for "An exercise such as this one help students see teachers in a more positive light." The second lowest score was 2.88 for "An exercise such as this one promotes better student-teacher relationships."

Three items on the survey were included for reverse scoring. In other words, the lower the score the more ideal. These three items were a test to assure that the respondent read each item carefully and did not randomly assign scores. In keeping with the measure above (and reversing), a score below three would be indicative of positive attitudes. The three items and their scores were "the exercise was boring" (2.29), "the exercise was too unstructured" (2.50) and "the exercise took too long" (2.38). The three low scores suggest that the students did **not** find the exercise boring, unstructured or lengthy. The scores from these three exceptions were omitted from the final overall score computation

TABLE 5.1. ATTITUDE SURVEY RESULTS

MODULES	(N=24) SCORE
MODULE 1: Motivation and Interest	
The exercise was interesting	3.67
The exercise was engaging	3.58
The exercise increased my interest in the topic	3.38
The exercise increased my interest in the course	3.29
The exercise increased my enthusiasm to learn in general	3.38
The exercise was too unstructured*	2.50
The exercise increased my commitment to learn in general	3.96
MODULE 2: Enjoyment	
This exercise was boring*	2.29
This exercise was fun	3.96
This exercise was enjoyable	3.17
This exercise took too long*	2.38
MODULE 3: Perceived Knowledge	
Better decision making skills	3.54
Gained actual information from this exercise	3.79
Will make other work in the course more meaningful	3.79
Will lead me to ask better questions	3.54
Will lead me to participate more in a class discussion on this topic	3.58
MODULE 4: Affective Learning (General)	
Helped me to increase my own self-awareness	3.71
Increased my sense of my personal abilities	3.17
Increased my awareness of my own potential	3.29

*reverse scoring

TABLE 5.1. (CONTINUED)

MODULES	(N=24) SCORE
MODULE 5: Affective & Cognitive Learning (Retail Specific)	
Changed my perspective of retail buying	4.04
Increased my awareness of difficulties involved in six-month planning	4.42
Insight into the pressures faced by those making six-month planning decisions	4.33
Increased my awareness of uncertainties faced by those making six-month planning decisions	4.29
Increased my appreciation for those problems involved in six-month planning	3.83
I learned the general principles involved in six-month planning	4.04
Increased my insight into the ways in which retail store decisions are made	4.38
MODULE 6: Classroom Relations	
Lead students to be more independent	3.08
Help students see teachers in a more positive light	2.79
Provided a more relaxed, natural exchange between student and teacher	2.96
Lead teachers to see students more positively	2.96
Promotes better student-teacher relationships	2.88
Provides greater freedom for students to explore ideas	3.96

because the low number score would pull down the other scores.

Composite Scores

The mean scores of the items in each module were combined to form six composite scores. In other words, the mean score for each item within a module was computed to get a score that would reflect the general attitude for each area. Table 5.2 presents the composite scores for each module.

TABLE 5.2. COMPOSITE SCORES

1	Motivation and Interest	3.54
2	Enjoyment	3.10
3	Perceived Knowledge	3.65
4	Affective Learning (General)	3.39
5	Affective and Cognitive Learning (Retail Specific)	4.19
6	Classroom Relations	3.11
	OVERALL SCORE	**3.50**

The module with the highest composite score (4.19) was Module 5: Affective and Cognitive Learning (Retail Specific). This score suggests that the simulation was useful in teaching concepts of projecting dollar seasonal goals, setting budgets and inventory levels, and manipulating them as hypothetical "actual" figures. Of the eight items in this

module only one was below 4.0. This is an extremely promising collection of scores that strongly imply that this simulation is perceived by the students to have helped them learn the retail topics that were introduced and presented in class.

The module with the lowest composite score (3.10) was Module 2: Enjoyment. This score suggests that the simulation was not perceived as amusing or entertaining by the students. The students scored this module close to neutral (3.0). The second lowest composite score (3.11) was Module 6: Classroom Relations. This score suggests that the students did not perceive the simulation to have altered or improved the classroom setting.

The overall score for the attitude survey was computed and resulted in a score of 3.50. By using the guideline ascribed above, the score level is above three and therefore produces a positive overall attitude towards the computer simulation on behalf of the students.

Conclusion

The three specific objectives of the simulation program were: (1) to develop a simulation that may be used in teams and/or individuals, (2) to increase problem-solving skills and decision-making skills, and (3) to focus on increasing exposure to strategies and financial concerns found in retail management.

The first objective was fulfilled purely by the design of the simulation. In this study the simulation was used in teams of two students. However, individual use is feasible and will not change the style of the simulation.

The second objective falls within the Module 3: Perceived Knowledge. The individual item "I gained better decision-making skills" scored 3.54. This score implies a positive agreement by the student and their perception of increased decision-making skills. The composite score for Module 3 was 3.6. This score indicates the students **believe** they gained better decision-making and problem-solving skills. Furthermore, the individual item "I gained actual information from this exercise" suggests an increase in knowledge as perceived by the student.

The last objective falls within Module 5: Affective and Cognitive Learning. This module scored the highest of all the modules with 4.2. Given the type of questions within this module, the high score strongly suggests that financial concerns and retail strategies were improved upon during the simulation.

In summary, the scores from the attitude survey suggest that the simulation was realistic in terms of attempting to duplicate the buyer's activities for this exercise.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

The study was conducted to develop and evaluate a computer simulation for teaching retail management concepts particular to a buying activity. Specific objectives of the study were to identify the extent simulations are used within the retailing areas, both academic and corporate; to create a computer simulation for application of retail mathematics that meets the criteria resulting from the questionnaires; and to use the simulation in a classroom and test the attitudes of the students regarding the simulation.

Summary of Procedural Steps

The study was conducted in three sequential phases. The first phase of the study included a questionnaire designed to identify uses of computer simulations in both the university retail curriculum and retail industry. Responses from twenty-five academics and thirteen retail executives from across the United States were analyzed. Results helped support the foundation in developing the simulation program.

The second phase, a computer simulation for application of retail management concepts, was developed. Specific objectives were to develop a simulation that may be used in teams and/or individuals; to increase problem-solving skills and decision-making skills; and to focus on increasing exposure to strategies and financial concerns found in

retail management. Storyboards were developed to specify where and what type of information will appear on the screen. Flowcharts were developed to represent the flow and logic of the lesson. The programming was done on an authoring system called Visual Baler 1.0.

The third phase included the testing and evaluation of the computer simulation on undergraduate students enrolled in a course aimed at teaching mathematics for retail buyers. A survey to measure attitudes was adapted from three previous studies (Greenblat, 1973; Jolly, 1983; Sherrell & Burns, 1982). The survey consisted of thirty-two questions. The data was then analyzed statistically. The questions were divided into six categories. All scores for each category rated better than average. The attitude score for the simulation as a whole was positive. Scores related to affective and cognitive learning specifically aimed at retailing scored extremely high thereby suggesting that the simulation was helpful in teaching retail management concepts. However, attitude scores on enjoyment rated the lowest, thus implying that users did not find the simulation "entertaining."

General Implications

Simulations offer many benefits for both the industry and academia. In the industry simulations can be used to orient and train new employees. New and inexperienced employees must be provided with some information on the company and given initial training. The use of simulations gives the new employee opportunities to gain decision-making experience without the risk of the consequences of a wrong

decision. Additionally, the use of simulations have been shown to reduce training time by 50 percent, produce better retention, offer more consistent training, and lower costs associated with training new employees (Robins, 1994). Simulations are also useful for ongoing management training programs. They allow experienced managers and employees the ability to sharpen and adjust their skills, correct bad habits, and gain insights into other aspects of the company's operations. Furthermore, simulations provide a means of screening current managers and employees.

Simulations implemented in the curriculum have many benefits. By using computer simulations, the student not only learns team work through group projects, but also problem solving and decision making under time pressure in a limited environment much like actual retail conditions faced in the global industry. Computer simulations require the students to apply the knowledge they have acquired in course work and act as a reinforcement to understanding the various intricacies affecting retailing. It is imperative that students preparing for careers in this industry are aware of the computer's role. Retailing educators need to incorporate the computer into the curriculum whenever and wherever possible.

Recommendations

Simulations specifically designed to teach aspects of retail management are few. Consequently, computer simulation usage in retail education is minimal. Retailing educators need to incorporate the computer into the curriculum whenever possible. New simulations need to be developed and researched. The following recommendations for

further research and development are suggested:

1. Conduct a similar study with a control group not using the computer simulation and test for differences in attitude and knowledge gained
2. Conduct a similar study to investigate any relationship between user learning style and attitude score of simulation.
3. Have retail professionals run the simulation and critique its usefulness.
4. Conduct a similar study to investigate previous computer usage by the user and correspond with attitude scores on simulation.
5. Conduct a focus group and in-depth interviews of retail professionals to gather information on computer usage in the present and future.
6. Contact retail companies using simulations to train employees and investigate their objectives for the simulation.
7. Develop an advanced instrument of measurement to accurately measure the effectiveness of simulation in the classroom.
8. Develop more simulations geared specifically to retailing concepts.
9. Develop more interactive/talking simulations.

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APPENDICES

APPENDIX A

SIMULATION QUESTIONNAIRES

CONTENTS -- APPENDIX A

A1. Academic Questionnaire
A2. Academic Questionnaire Results
A3. Industry Questionnaire
A4. Industry Questionnaire Results

ACADEMIC QUESTIONNAIRE

Dear Colleague,

I am interested in the integration of computers into the retailing education. As educators, we are concerned about preparing students to enter the retail industry. This preliminary survey asks the question of how important and helpful retailing computer simulation programs are for students entering the industry. Please take a moment to fill out the following questions.

1. Does your institution currently use a computer simulation program in the retailing curriculum?

   1. Yes 2. No

   If yes, what is the title_____

2. Do you believe that computer generated simulations are helpful in preparing the student for work in the retail industry?

   1. Yes 2. No

   Comments_____

3. Is there a need for more/better computer simulation programs in the retailing field?

   1. Yes 2. No

   Why?_____

4. What kind (if any) of computer software are your students required to learn before graduating. (Circle all that apply)

   1. Lotus 2. Excel 3. WordPerfect
   4. Word 5. Power Point 6. Harvard Graphics
   7. Some other? _____

5. What kind of software do you believe retailing employment recruiters expect the student to know? (Circle all that apply)

   1. Lotus 2. Excel 3. WordPerfect
   4. Word 5. Power Point 6. Harvard Graphics
   7. Some other? _____

One method of teaching, beyond textbooks and classroom lectures, is to use computers to simulate retail decisions. These computer simulations are only beneficial if they teach skills that are required by retailers. Thinking about your institution, if you could create your own computer game, would you: (Please circle number for response)

6. 1. Have students work in groups to make decisions.
   2. Have students work individually to make decisions.
   Comments_____

7. 1. Have students compete against pre-set retail standards.
   2. Have students compete against other students in class.
   Comments_____

8. What would be the objective of the game? (Please circle one)
   1. Highest sales of products
   2. Largest amount of customers
   3. Highest profit
   4. Problem solving decisions
   5. Some other factor_____

9. What kind of game would you create?
   1. Operating a small retail store
   2. Decisions confronting a department manager
   3. Decisions made by retail buyers
   4. Some other format_____

10. What kind of decisions would be required? (Please circle all that apply)
    1. Financial
    2. Marketing
    3. Employee Performance
    4. Customer Service
    5. Buyer/Vendor Relations
    6. Product Merchandising
    7. Retail Strategy
    8. Other_____

11. What is your position title?_____

12. Does your institution offer a retailing major? 1. Yes 2. No

13. Please feel free to comment on any question or topic we I not cover.

_____

_____

Thank you.

ACADEMIC QUESTIONNAIRE RESULTS

1)	76% YES	24% NO	Titles:	Buyer Workbook Merch Math Ezy Retail Pro Strategic Retail Management Kamans Fashion for Less Stores Spreadsheet
2)	100% YES	0% NO		
3)	95% YES	5% NO	Comments:	"Limited choice" "There are few" "More Needed" "Need to work with HiTech"

4)	Lotus	83%
	Excel	17%
	WordPerfect	61%
	Word	22%
	Harvard Graphics	28%
	PowerPoint	6%
	Other	Windows, Database, Quattro Pro, CAD

5)	Lotus	72%
	Excel	28%
	WordPerfect	44%
	Word	22%
	Harvard Graphics	17%
	PowerPoint	6%
	Other	Windows, some spreadsheet, familiar w/computers

6)	Groups	43%
	Individual	5%
	Both	52%

7)	Preset Standards	72%
	Other Students	28%
	Both	0%

8)	Objective:		
	High Sales	4%	
	Increase Customer Base/Service	4%	
	High Profit	25%	
	Problem Solving	67%	
	Other	0%	
9)	Format:		
	Small Retail Store	29%	
	Department Manager	37%	
	Retail Buyers	34%	
	Some Other	0%	
10)	Decisions Required:		
	Financial	14%	
	Marketing	15%	
	Employee Performance	15%	
	Customer Service	12%	
	Buyer/Vendor Relations	13%	
	Product Merchandising	15%	
	Retail Strategy	16%	
11)	Title:		
	Assistant Professor	35%	
	Associate Professor	15%	
	Professor	19%	
	Department Head	8%	
	Director	19%	
	Dean	4%	
12)	Offer Retailing Major	81% YES	19% NO

13) Comments:
"Would love to see more work in this area, Good Luck"
"Good group to survey would be recent retail graduates"
"This area is in desperate need of a good retail simulation"
"Are you working on a game? I would be very interested"

INDUSTRY QUESTIONNAIRE

We are interested in your thoughts on educating and hiring recent college graduates. Hiring educated employees is a crucial factor to the success of your business and we think its important to make sure retail programs in schools are adequately preparing students for employment.

1. When interviewing prospective employees, what are the most important factors you look for:

   1._____
   2._____
   3._____

2. Overall, after six months to a year of a person's employment how satisfied are you with your hiring decisions? (Please circle number representing your choice)

Very Satisfied 7 6 5 4 3 2 1 Not Satisfied

3. What is your biggest complaint regarding employee performance?

   Comment _____

4. Do you think its solution could be taught in schools?

   Comment _____

One method of teaching, beyond textbooks and classroom lectures, is to use computers to simulate retail decisions. These computer simulations are only beneficial if they teach skills that are required by retailers. Thinking about your institution, if you could create your own computer game, would you: (Please circle number for response)

5. 1. Have students work in groups to make decisions.
   2. Have students work individually to make decisions.
   Comments_____

6. 1. Have students compete against pre-set retail standards.
   2. Have students compete against other students in class.
   Comments _____

7. What would be the objective of the game? (Please circle one)
   1. Highest sales of products
   2. Largest amount of customers
   3. Highest profit
   4. Problem solving decisions
   5. Some other factor _____

8. What kind of game would you create?
   1. Operating a small retail store
   2. Decisions confronting a department manager
   3. Decisions made by retail buyers
   4. Some other format_____

9. What kind of decisions would be required? (Please circle all that apply)
   1. Financial
   2. Marketing
   3. Employee Performance
   4. Customer Service
   5. Buyer/Vendor Relations
   6. Product Merchandising
   7. Retail Strategy
   8. Other_____

10. Does your business/company provide a formalized program for new employees?
    1. Yes 2. No

11. Does your training program use computers to train employees?
    1. Yes, a lot 2. Some 3. No, not al all

12. What kind of software does your business/company use?

    Comment_____

13 Are new employees expected to know how to use the software prior to employment? 1. Yes 2. No

14. What is your position title?_____

15. What industry is your business/company in?_____

16. Please feel free to comment on any question or topic we did not cover.

Thank you.

INDUSTRY QUESTIONNAIRE RESULTS

1)

Attitude (x3)	History of Accomplishment
Personality Traits (x2)	Retail Management Interest
Experience (x5)	Dedication
Technical Skill Level	Academic Achievement (x2)
Initiative	Confidence
Retail Experience (x3)	Motivation
Communication Skills	(x3) Reliability
Leadership History	Trustworthiness
Outgoing	Good Listener
Honest	Retail geared coursework (x2)
Realistic Retail Attitude	Sales/Profit
Customer Service	Operations
Common Sense	Good work ethic

2)

Mean Score	5.6
Range	5 - 7

3)

"Have a glamorous view of retail"
"Lack thirst for knowledge"
"Misconception of academic vs. real world approach"
"Consistency"
"Laziness, tend to have to baby-sit"
"Having to tell them what to do, rather then have them do it on their own"
"Lack of understanding outside retail environment"
"Not enough forecasting knowledge"
"Not willing to be accountable for their results"
"Some have unrealistic expectations of salary increases and promotions"

4)

"Somewhat"
"No, should be instilled in upbringing, need sense of values"
"A semester of job experience"
"Yes" "No"
"Yes and No"
"Yes, but would require outside business people"
"Teaching differences of retail environment"

5)

Groups	56%
Individual	22%
Both	22%

6) Preset Standards 67%
Other Students 22%
Both 11%

7) Objective:
High Sales 17%
Increase Customer Base/Service 28%
High Profit 22%
Problem Solving 33%
Other 0%

8) Format:
Small Retail Store 44%
Department Manager 44%
Retail Buyers 0%
Some Other 11%

9) Decisions Required:
Financial 15%
Marketing 13%
Employee Performance 20%
Customer Service 20%
Buyer/Vendor Relations 4%
Product Merchandising 13%
Retail Strategy 15%

10) 73% YES 27% NO

11) 10% YES, a lot 45% Some 45% No, not at all

12) Lotus 26%
Excel 1%
WordPerfect 46%

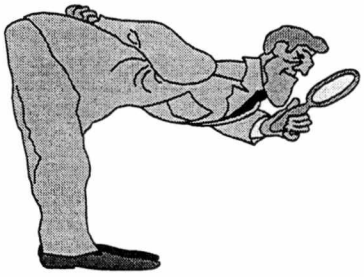
13) 27% YES 73% NO

14) Training 18% Recruiting/Human Resource 46%
Owner 18% Manager 18%

15) Specialty Store 20% Department Store 27%
Discount Stores 33% Off-Price Stores 13%
Catalog 7%

APPENDIX B

CASE INSTRUCTIONS



RCS 310
Spring 1995

Six-Month Merchandise Plan for Sherlock's Department Store

STORE BACKGROUND:

Sherlock's department store was founded in 1904 by two brothers, Xavier and Elliot Klein. The original store is located in the city center of Atlanta, Georgia. By 1950, despite wars, the Great Depression and various other economic hardships, *Sherlock's* grew to 15 stores in three neighboring states in the South. The brothers retired in 1955 and left their retail enterprise in the hands of their children. *Sherlock's* enjoyed rapid growth in the 1950's and 1960's. The operation expanded into suburban malls as well as town centers. By the mid 1980's *Sherlock's* became a dominant retailer in the southeast with a chain of 26 department stores operating in five neighboring states with an annual sales volume of $295,500,000. Current store locations and the number in each location are Georgia (8), South Carolina (5), Mississippi (2), Tennessee (6), and Alabama (5).

Current Data: *Sherlock's* is a moderately priced, promotional department store. It carries a full line of apparel for the entire family. The 'Home Store' includes bed and bath, tabletop, china, crystal, flatware and a very comprehensive kitchen/gourmet accessories department. While *Sherlock's* no longer carries furniture or large appliances, it is well known for its Home Store. Additionally, it is known for its Parisian-type cafe in every store. The cafe has become a very popular spot for "trend-setters."

Store Policies: Every department in *Sherlock's* contains from 10% to 40% of its own private label merchandise. They achieve their greatest markups on the private labels, anywhere from 52% to 66% of retail. Their labels include "Holmes" (all departments), "Dear Watson" (children's only), "221b Baker Street" (home store), and "Mysteries" (budget to low moderate price points). National branded goods are typically priced competitively with other department stores carrying the same brands. *Sherlock's* is known to focus on promotional activities. Every October *Sherlock's* participates in an Anniversary Event. Every store has special events, entertainment, and significant sales. Consumers in *Sherlock's* trading areas expect each Anniversary celebration to be better than the year before. It has become a landmark for consumers in the trading region.

Sherlock's is notorious for their promotional campaigns. Their slogans of "We Take the Mystery Out of Shopping", "We Have What You Are Looking For" and "It's Elementary My Dear Watson, Shop at Sherlock's" are popular culture favorites.

Store Mission Statement: "Our goal is to provide the customer with desirable, quality products at the most desirable prices. We aim to be an industry leader in customer satisfaction by offering our customers the quality goods and services they want, expect and deserve. Furthermore, to accomplish this we strive to be a leader in employee satisfaction by attracting, training and rewarding the best personnel in the industry."

ABOUT KNOXVILLE:

Knoxville is located in Knox County, Tennessee. The appendix contains demographic and lifestyle data pertaining to the Knoxville trading area which includes Knox county and six surrounding counties. In the appendix you will find such things as: a comparative cost of living index for major metropolitan areas in the United States, the effective buying income, comparative annual unemployment figures, and historical weather information. The population of the Knoxville trading area is stable and growing. Growth is due to the introduction of new business and industry, mostly high-tech. The Knoxville area was recently identified as one of the top 25 relocation sites nationally for business and industry. The major current employers are federal, state, and local governments, a large university , large public utilities suppliers and banking institutions. (Knoxville Chamber of Commerce provided this information compiled from numerous sources).

Knoxville Branch Store:

The Knoxville branch store is located in the north side of Knox County in the "Volunteer Plaza Mall", an old textile mill which was converted into a mostly enclosed shopping mall. The renovation received considerable national publicity due to the historic nature of the old mill. Upon opening the mall developers received a design innovation award for the combined renovation and restoration efforts. Traffic has not decreased as is usual a few months after a new center opens. The Volunteer Plaza Mall is not only a shopping destination, but has become a tourist attraction. It was developed as a shopping mall with a neighborhood feel.

Sherlock's is one of four anchors stores in the center of the mall with a prime location. The other anchors include a national department store chain, another regional department store aimed at the upscale customers and the latest prototype for a large grocery store chain. *Sherlock* executives were hesitant about this anchor mix, but the new concept grocery operation includes upscale, almost department store appearance. In addition to

typical groceries, bakery, butcher/seafood and gourmet shops, the store offers a catering service and a large assortment of fresh "ready-to-take-home-and-cook" meals. They also sell these foods in their Emporium restaurant which opens into the mall at the Food Court.

The mall consists of 85 specialty stores (national, regional, and local). Seventy percent are softgoods merchants, i.e., apparel and accessories. Ten percent are food service, both fast food and sit-down restaurants. The remainder sell books, cards, gifts, records and tapes, etc. There is a licensed child care/sitter service with a semi open air playground for use by shoppers with children ages 2 - 9. The service charges $3.50, is subsidized by the Merchant Association, has a three hour limit and a State set capacity.

On the periphery of the mall property is Little Mill Run. This is a small drive up strip center with a dry-cleaner/Laundromat, shoe repair shop, copy center, liquor store, beauty shop, bank, and ambulatory medical care center. A few fast foods stores and restaurants are located on the mall periphery at the back of the property. Traffic flows like a perimeter around the mall making access easy and safe.

The Knoxville branch store enjoys moderate to high retail sales in comparison to other like department stores in the same vicinity. *Sherlock's* target a wide assortment of customers. Middle class income families are its most prevalent consumers. It is known for its "Customer Comes First" store philosophy and therefore is popular among the senior citizens of Knoxville.

Local Competition:

There are two other malls in the same trading area. Oakwood Meadows is located in the affluent West Knoxville area. It is the largest with five anchors: three national chain department stores, and two regional stores. There are 112 specialty stores in this mall with the usual merchant mix. Many of the Limited portfolio are represented here. The University Heights Mall is located four miles from campus and six miles from the Knoxville central business district. Four of the anchors are the same as the Oakwood anchors. It is targeted toward the university community and middle class income families with children.

YOUR ASSIGNMENT:

Due to reorganization of the merchandising division of *Sherlock's*, you are now buying for a new department. You have little time to develop a Fall/Winter 1995-96 six-month merchandising plan for the Knoxville, Tennessee branch store.

Upon analysis of data made available, you must generate **five** six-month plans. Number each plan. Manipulate the forecasts for each plan. Of the five, select the ideal plan. Write a report that contains your rationale and defense for selecting the plan. Defense of your plan must be based on all trading area data available and pertinent to you department, i.e., demographics, economic environment and consumer buying power, location, competition, etc.. Physical visits to a similar department are imperative to gain insight and understanding for your new department. Check the calendar for holidays and other events that may impact your business. Plan for the anniversary event in October.

STEPS IN PREPARING THE MERCHANDISE PLAN

Phase One:

As part of your research, you must analyze the most current MOR Reports-Merchandising and Operating Results of the National Retail Federation. This trade publication is published annually and is a compilation of actual data and results from stores throughout the United States. Each department has a short history available and its product line. Demographic data is also given for

USE EVERYTHING THAT IS PROVIDED. After thinking through the possible influences that may affect your department, start projecting numbers to coordinate with the factors. Some suggested steps are outlined below:

1) Determine your planned sales increase for the season in percent of last season

2) Determine your planned reduction percent for the season

3) Determine planned sales percents for each month and enter into appropriate cells

4) Determine planned B.O.M. stock/sales ratio for each month and enter into appropriate cells

5) Determine planned reduction percents for each month and enter into the appropriate cells

6) Determine the E.O.M. amount for the last month of the season

Once you have entered all the appropriate data, choose the plan that your team agrees to be the most efficient. Write a three to five page paper defending your plan. **All pertinent data must be included** in your write-up. Each month's plan should be supported realistically. All external data is fair game. The stronger the defense in support of your plan the better.

Phase Two:

Due to unforeseen acts, your team will be required to alter and revise the six-month plan. Your teacher will provide the necessary facts and figures of the new information. Your job will be to correctly read and interpret the effect they may have on your plan. You will be required to generate a revised plan that your team agrees is the most efficient. A similar write-up is required stating the purpose for revisions.

Phase Three:

Your team will be required to present the plan to the Executive Officers of the Knoxville branch. A five to ten minute formal presentation stating your department figures and defense of reasoning is mandatory. There may be teams that generated a plan for the same department. A comparison of outcomes will be necessary. Class participation is essential.

Have Fun!

ECONOMIC STATISTICS - Knoxville, TN

Winter 1994

1) 1993 annual unemployment rate dropped below both state and national averages
2) Average weekly wages rose 4.8% between 1990 and 1991, but remained below the state avg.
3) 1991 per capita income estimate above the state average buy below the national average
4) Overall retail sales rose 6.8% during 1993, below the sales with reported an increase of 8.2%
5) Population growth is slightly above the state average
6) Total travel expenditures increased 6.0% between 1991 and 1992
7) Lodging receipts rose 8.8% during 1993 over 1992 levels, outpacing the state of 7.5%

QUARTERLY LABOR FORCE

	1992 Third Quarter	1992 Fourth Quarter	1993 First Quarter	1993 Second Quarter	1993 Third Quarter
Total Labor Force	299,693	301,880	311,250	320,589	330,816
Number Employed	284,303	288,676	293,299	305,240	316,513
Number Unemployed	15,390	14,180	17,951	15,349	14,303
Unemployment Rate	5.1	4.7	5.8	4.8	4.3
State Rate	6.3	5.8	6.3	5.9	5.7
National Rate	7.4	6.9	7.7	6.9	6.7

Source: Department of Employment Security

ANNUAL LABOR FORCE - 1990 - 1993

	1990	1991	1992	1993	% Change 1990-1993
Total Labor Force	279,149	286,806	296,913	322,757	15.4
Number Employed	265,655	271,004	280,667	307,499	15.8
Number Unemployed	13,494	15,802	16,246	15,258	13.1
Unemployment Rate	4.8	5.5	5.5	4.7	
State Rate	5.3	6.7	6.4	5.7	
National Rate	5.6	6.8	7.4	6.9	

Source: Department of Employment Security

ANNUAL RETAIL SALES

1991 to 1993 in 1000's of Dollars

	1991	1992	% Change 1991-1992	1993	% Change 1992-1993
Building Supplies	332,858	386,136	16.0	438,342	13.5
General Merchandise	699,340	778,575	11.3	831,748	6.8
Food Stores	953,948	962,000	0.8	1,031,394	7.2
Autos, Boats, Planes	811,050	934,976	15.3	1,096,618	17.3

Apparel	295,715	329,309	11.4	354,291	7.6
Furniture	220,899	232,692	5.3	246,076	5.8
Eating Places	573,829	618,312	7.8	666,942	7.9
Service Stations	545,593	584,752	7.2	536,140	-8.3
Miscellaneous	743,547	854,448	14.9	865,572	1.3
Area Total	5,176,819	5,681,210	9.7	6,066,126	6.8

POPULATION ESTIMATES - 1990 and 2000

1990	1996	1997	1998	1999	2000
585,960	609,078	613,072	617,099	621,021	624,888

The percentage change in population for the State was 6.2 for the same period.
NOTE: The 1990 figures are based on actual Census counts.

APARTMENT SURVEY - 1993

Type of Unit	Number Of Units	Average Monthly Rate	Number Vacant	Vacancy Rate
Efficiency	250	$284	21	8.4
One Bedroom	2,006	$327	68	3.4
Two Bedroom	2,702	$424	123	4.6
Three Bedroom	289	$457	20	6.9
Four Bedroom	8	$519	0	0.0
Total	5,255	$382	232	4.4

ANNUAL HOUSING ADDITIONS - 1990 TO 1992

1990	1991	% Change	1992	% Change
5,656	5,602	-1.0	5,515	-1.6

AVERAGE MONTHLY EMPLOYMENT BY INDUSTRY - 1991 TO 1993

Item	1991	1992	% Change 1991-1992	Jan - Dec 1993	% Change Same Months 1992-1993
Total Employment	271,017	285,250	5.3	295,650	3.6
Manufacturing	48,892	49,683	1.6	50,350	1.3
Construction/Mining	12,208	13,025	6.7	14,633	12.3
Trans, Com., Until	10,133	10,267	1.3	11,092	8.0
Trade	71,850	73,383	2.1	73,100	-0.4
Finance, Ins. & Real Est	9,933	10,567	6.4	10,567	0.0
Services	66,650	74,858	12.3	80,500	7.5
Government	51,308	53,467	4.2	55,408	3.6

AVERAGE WEEKLY WAGES BY INDUSTRY - 1990 AND 1991

	1990	1991	% Change 1990-1991

Total Firms Reporting	14,519	15,191	4.7
Wages, All Industries	384	402	4.8
Manufacturing, Total	463	480	3.8
Durable Goods	508	532	4.9
Non-Durable Goods	395	404	2.3
Mining & Quarrying	573	587	2.5
Construction	408	412	1.2
Transportation & Utilities	466	519	11.5
Trade	278	288	3.7
Finance, Insurance & Real Estate	413	427	3.3
Services	355	372	5.1
Government	401	416	3.8
Other	478	508	6.3

PER CAPITA INCOME ESTIMATES

	1987	1988	1989	1990	1991
Knoxville	13,639	14,594	15,414	16,337	16,846
State	13,277	14,156	14,992	15,869	16,478
Nation	15,638	16,615	17,696	18,635	19,091

Source: Bureau of Economic Analysis, U.S. Department of Commerce

QUARTERLY SALES TAX

Quarter/Year	Amount	Quarter/Yr	Amount	% Change
1st/1992	85,280,563	1st/1993	93,509,904	9.6
2nd/1992	92,971,760	2nd/1993	95,540,160	2.8
3rd/1992	104,331,253	3rd/1993	107,479,726	3.0
4th/1992	98,696,067	4th/1993	107,358,786	8.8

EFFECTIVE BUYING INCOME 1982-1992

Area	Population	Households	Median Age of opulation	Effective Buying Income E.B.I.	Median Household E.B.I.	Average Household E.B.I.
KNOXVILLE TRADING AREA						
12/31/82	587,200	219,400	31.8	$4,988,086,000	$18,379	$22,735
12/31/83	583,700	218,100	32.1	$5,233,248,000	$20,180	$23,995
12/31/84	591,300	224,000	32.4	$5,776,177,000	$21,625	$25,786
12/31/85	599,000	229,900	32.6	$6,097,300,000	$19,760	$26,522
12/31/86	599,300	231,100	32.9	$6,401,113,000	$20,471	$27,698
12/31/87	601,800	233,800	33.3	$6,852,491,000	$21,624	$29,309
12/31/88	605,700	237,300	33.4	$6,686,223,000	$20,914	$28,176
12/31/89	609,700	240,100	33.7	$7,175,505,000	$22,187	$29,885
12/31/90	608,400	239,300	34.6	$7,601,304,000	$23,564	$31,765
12/31/91	614,700	242,400	35.0	$8,375,174,000	$27,281	$34,551
12/31/92	602,800	239,000	35.3	$8,855,443,000	$29,074	$37,052
KNOX COUNTY						
12/31/82	329,300	125,000	31.2	$2,928,439,000	$19,449	$25,427
12/31/83	323,800	123,900	31.5	$3,094,974,000	$20,740	$24,979
12/31/84	327,300	127,000	31.8	$3,362,578,000	$21,979	$26,477
12/31/85	331,400	130,200	32.0	$3,551,217,000	$20,013	$27,275
12/31/86	331,700	130,700	32.3	$3,752,694,000	$20,897	$28,712
12/31/87	331,800	131,800	32.5	$4,035,844,000	$22,238	$30,621
12/31/88	333,000	133,400	32.8	$3,907,066,000	$21,430	$29,292
12/31/89	334,400	134,000	33.0	$4,201,512,000	$22,824	$31,354
12/31/90	337,200	134,200	33.8	$4,452,400,000	$24,277	$33,177
12/31/91	339,000	135,600	34.1	$4,970,182,000	$28,239	$36,653
12/31/92	342,600	137,000	34.3	$5,321,991,000	$29,727	$38,847
% chang	1.06%	1.03%	0.59%	7.08%	5.27%	5.98%
KNOXVILLE CITY						
12/31/82	177,600	71,700	31.0	$1,471,251,000	$16,018	$20,519
12/31/83	175,700	71,500	31.3	$1,563,806,000	$17,075	$21,871
12/31/84	173,100	71,400	31.6	$1,655,228,000	$18,099	$23,182
12/31/85	175,300	73,300	31.9	$1,750,404,000	$16,437	$23,880
12/31/86	175,500	73,700	32.2	$1,852,744,000	$17,177	$25,139
12/31/87	175,200	74,200	32.4	$1,989,154,000	$18,235	$26,808
12/31/88	175,400	74,900	32.7	$1,920,436,000	$17,553	$25,640
12/31/89	175,200	75,400	32.9	$2,058,872,000	$18,688	$27,306
12/31/90	165,800	70,300	32.7	$2,041,723,000	$19,879	$29,043
12/31/91	167,100	71,000	33.0	$2,137,313,000	$21,945	$30,103
12/31/92	170,000	72,200	33.2	$2,301,808,000	$22,982	$31,881
% chang	1.74%	1.69%	0.61%	7.70%	4.73%	5.91%

Source: Sales and Marketing Management; Survey of Buying Power: 1983-1993

In comparison, the composite index for Knoxville was 93.3 or 6.53% below the nationwide average for the quarter.

The composite index is based on six components. In comparison the composite index figures for Knoxville were 93.8 for grocery items, 85.7 for housing, 98.3 for utilities, 91.0 for transportation, 92.4 for health care, and 98.8 for miscellaneous goods and services.

ACCRA COST OF LIVING INDEX
METROPOLITAN AREAS OVER 1.5 MILLION POPULATION
FIRST QUARTER 1994

	Composite	Grocery Items	Housing	Utilites	Trans-porta-tion
Boston MA	135.6	118.6	163.4	180	125.9
Philadelphia PA-NJ	129.7	116.5	148.1	175.6	113
San Diego CA	127.5	110.4	174.1	72.7	133.4
Los Angeles-Long Beach CA	125.2	106.7	158.2	90	108.5
Chicago IL	121.6	110.3	147	108.7	107.9
Pillsburgh PA	113.3	101.2	107.3	158.2	114.9
Miami FL	109.8	96.6	107.3	125	125.6
Portland OR	108.5	104.1	124.6	68.5	111.5
Denver CO	107.8	99.6	123.5	92.3	105.5
Minneapolis-Saint Paul MN	105.8	103.7	99.4	90	121.8
Cleveland OH	105.2	101.5	109.6	123.9	111.8
Dallas TX	104.9	101.3	99.6	117.1	106.6
Baltimore MD	103.8	100.6	108.6	92.5	110.2
Cincinnati OH	103.8	95.7	105.8	109.3	104.3
Phoenix-Mesa AZ	102.5	101.9	90.3	102.9	120.3
Atlanta GA	100.6	103.5	100.8	110.8	101.1
Houston TX	98.8	100.9	91.4	100.7	113
Tampa-St. Petersburg FL	98.2	99.7	95.4	102.8	99.3
Kansas City MO-KS	97.5	100.1	94	108.5	93.3
St Louis MO-IL	97	98.9	98.1	109.7	91

KNOXVILLE TRADING AREA

DEMOGRAPHICS

Base Index US = 100

Occupation	Population	%	Index
Administrative	58,601	7.2	71
Blue Collar	96,855	11.9	125
Clerical	61,857	7.6	93
Homemaker	144,875	17.8	116
Professional/Technical	170,106	20.9	83
Retired	186,384	22.9	114
Sales/Marketing	41,509	5.1	91
Self Employed	28,487	3.5	97
Student	24,417	3.0	120

Education (1990 Census)			
Elementary (0-8)	131,894	19.7	189
High School (1-3 years)	109,130	16.3	113
High School (4 years)	201,523	30.1	100
College (1-3 years)	126,538	18.9	76
College (4+ years)	100,427	15.0	74

Race/Ethnicity			
White	768,326	94.4	125
Black	34,998	4.3	38
Asian	4,883	0.6	21
Hispanic	4,070	0.5	5
American Indian	1,628	0.2	29
Other	0	0.0	0
Total Households	**420,001**		

Age of Head of Household	Households	%	Index
18-24 years old	21,840	5.2	104
25-34 years old	73,920	17.6	88
35-44 years old	91,140	21.7	95
45-54 years old	75,600	18.0	106
55-64 years old	58,800	14.0	107
65-74 years old	56,280	13.4	107
75 years and older	42,420	10.1	103
Median Age	**48.0 years**		

Sex/Marital Status			
Single/Male	74,340	17.7	87
Single/Female	96,180	22.9	93
Married	249,481	59.4	108

Children At Home			
At Least One Child	119,700	28.5	97
Child Age Under 2	12,600	3.0	83
Child Age 2-4	28,140	6.7	87
Child Age 5-7	26,460	6.3	85
Child Age 8-10	29,400	7.0	91
Child Age 11-12	22,260	5.3	95
Child Age 13-15	31,080	7.4	95
Child Age 16-18	31,080	7.4	103

Stage in Family Lifecycle	Population	%	Index
Single, 18-34, No Children	43,260	10.3	83
Single, 35-44 "	23,100	5.5	86
Single 45-64 "	36,120	8.6	96
Single, 65+, "	42,840	10.2	97
Married, 18-34 "	20,160	4.8	104
Married, 35-44 "	15,960	3.8	112
Married 45-64, "	69,720	16.6	116
Married, 65+, "	49,140	11.7	115
Single, Any Child at Home	25,200	6.0	91
Married, Child Age Under 13	52,920	12.6	96
Married, Child Age 13-18	41,580	9.9	103

Household Income			
Under $20,000	169,260	40.3	142
$20,000-$29,999	76,440	18.2	112
$30,000-$39,999	57,540	13.7	97
$40,000-$49,999	39,480	9.4	82
$50,000-$74,999	50,820	12.1	70
$75,000-$99,999	15,960	3.8	56
$100,000 and over	10,920	2.6	45
Median Income	**25,314**		

Income Earners			
Married, One Income	143,220	34.1	121
Married, two Incomes	106,260	25.3	93
Single	170,520	40.6	91

Dual Income Households			
Children Age Under 13 years	26,880	6.4	86
Children Age 13-18 years	23,520	5.6	90
No Children	55,440	13.2	98

Age By Income			
18-34, Income under $30,000	63,840	15.2	122
35-44 "	39,060	9.3	145
45-64 "	65,520	15.6	158
65+ "	77,280	18.4	116
18-34 Income $30,000-$49,999	20,580	4.9	73
35-44 "	27,300	6.5	92
45-64 "	34,440	8.2	101
65+ "	14,280	3.4	94
18-34 Income $50,000-$74,999	8,400	2.0	54
35-44 "	16,380	3.9	72
45-64 "	21,420	5.1	78
65+ "	4,620	1.1	69
18-34 Income $75,000 and over	2,940	0.7	37
35-44 "	8,400	2.0	51
45-64 "	13,020	3.1	55
65+ "	2,520	0.6	50

Home Ownership			
Owner	299,461	71.3	110
Renter	120,540	28.7	82

Credit Card Usage			
Travel/Entertainment	47,040	11.2	74
Bank Card	259,981	61.9	86
Gas/Department Store	142,380	33.9	96
No Credit Cards	118,440	28.2	140

LIFESTYLES - Base Index US = 100

THE TOP TEN LIFESTYLES RANKED BY INDEX

Bible/Devotional Reading	179	Automotive Work	117
Vegetable Gardening	123	Sewing	117
Own a Dog	121	Entering Sweeptstakes	116
Camping/Hiking	120	Flower Gardening	113
Fishing Frequently	119	Grandchildren	113

Home Life	Households	%	Index	Rank
Avid Book Reader	149,940	35.7	94	130
Bible/Devotional Reading	132,720	31.6	179	24
Flower/Gardening	158,760	37.8	113	56
Grandchildren	102,480	24.4	113	86
Home Furnishing/Decorating	82,320	19.6	101	64
House Plants	149,940	35.7	106	107
Own a Cat	118,860	28.3	111	76
Own a Dog	169,260	40.3	121	68
Subscribe to Cable TV	274,681	65.4	103	91
Vegetable Gardening	120,120	28.6	123	84
Good Life				
Attend Cultural/Arts Events	41,160	9.8	68	161
Fashion Clothing	52,920	12.6	92	105
Fine Art/Antiques	36,540	8.7	84	167
Foreign Travel	36,960	8.8	60	133
Frequent Flyer	56,700	13.5	67	106
Gourmet Cooking/Fine Foods	50,820	12.1	72	145
Travel in USA	128,520	30.6	85	171
Wines	34,020	8.1	70	111
Investing & Money				
Casino Gambling	15,960	3.8	37	194
Entering Sweepstakes	68,460	16.3	116	61
Money Making Opportunities	43,680	10.4	99	101
Real Estate Investments	20,160	4.8	77	135
Stock/Bond Investments	46,200	11.0	73	181
High Tech Activities				
Electronics	41,160	9.8	100	70
Home Video Games	52,500	12.5	108	65
Listen to Records/Tapes/CD's	181,020	43.1	93	138
Own a CD Player	155,400	37.0	84	128
Personal/Home Computers	112,560	26.8	82	133
Photography	78,120	18.6	102	56
Science Fiction	34,860	8.3	95	94
Science/New Technology	32,340	7.7	90	90

Great Outdoors	Households	%	Index	Rank
Boating/Sailing	44,100	10.5	95	88
Camping/Hiking	106,680	25.4	120	57
Fishing Frequently	114,240	27.2	119	118
Hunting/Shooting	70,140	16.7	112	140
Motorcyles	29,820	7.1	106	113
Recreational Vehicles	32,340	7.7	99	134
Wildlife/Environmental	69,720	16.6	102	80
Hobbies & Interests				
Automotive Work	72,240	17.2	117	57
Buy Pre-Recorded Videos	58,380	13.9	93	143
Career-Oriented Activities	32,760	7.8	86	113
Coin/Stamp Collecting	32,340	7.7	104	74
Collectibles/Collections	49,140	11.7	103	94
Crafts	126,000	30.0	112	84
Current Affairs/Polictics	63,840	15.2	94	101
Home Workshop	100,380	23.9	106	94
Military Veteran in Household	110,040	26.2	104	112
Needlework/Knitting	80,220	19.1	107	107
Our Nation's Heritage	21,420	5.1	106	56
Self-Improvement	70,980	16.9	92	146
Sewing	96,600	23.0	117	85
Suports Health Charities	62,580	14.9	83	125
Sports, Fitness & Health				
Bicycling Frequently	40,740	9.7	56	190
Dieting/Weight Control	89,460	21.3	101	77
Golf	63,000	15.0	77	155
Health/Natural Foods	55,860	13.3	91	105
Physical Fitness/Exercise	121,800	29.0	84	166
Running/Jogging	41,580	9.9	85	114
Snow Skiing Frequently	12,600	3.0	39	158
Tennis Frequently	22,680	5.4	84	86
Walking for Health	154,560	36.8	104	68
Watching Sports on TV	162,960	38.8	103	61

KNOXVILLE AREA WEATHER

Average Temperature - (1940 - 1992)

Month	Normal Daily Maximum	Normal Daily Minimum	Record High	Record Low	Average
January	46.9	29.5	77	-24	38.2
February	51.2	31.7	83	-2	41.5
March	60.1	39.3	86	1	49.7
April	71.0	48.2	92	22	59.6
May	78.3	56.5	94	32	67.4
June	84.6	64.0	102	43	74.3
July	87.2	68.0	103	49	77.6
August	86.9	67.1	102	49	77.0
September	81.7	61.2	103	36	71.5
October	70.9	48.1	91	25	59.5
November	59.1	38.4	84	5	48.8
December	50.3	31.9	80	-6	41.1

Maximum temperature recorded in the past 140 years: 103 in July 1952 and September 1954
Minimum temperature recorded in the past 140 years: -24 in January 1985

AVERAGE RAINFALL, SNOWFALL AND SUNSHINE - 1940 - 1992

Month	Normal Rainfall (in inches)	Maximum Rainfall (in inches)	Average Snowfall (in inches)	Average Sunshine (% Possible)
January	4.65	11.74	4.0	40
February	4.18	9.38	3.6	46
March	5.49	10.42	1.5	53
April	3.87	7.20	0.4	62
May	3.71	10.98	trace	64
June	3.95	8.21	0	64
July	4.33	10.09	0	63
August	3.02	8.88	0	63
September	2.99	9.19	0	60
October	2.73	6.67	trace	61
November	3.78	10.36	0.6	49
December	4.59	11.63	1.6	40
Annual Averages	47.29	11.74	11.7	55

Total Amount of Yearly Rainfall: 47.29 inches

The snow season is from January to February. The maximum snowfall recorded in a twenty four (24) hour period was 18.2 inches in November 1952.

AVERAGE RELATIVE HUMIDITY (1940 - 1992)

Month	Maximum 1941-1991 7:00 a.m.	Minimum 1941-1991 1:00 p.m.	Average 1941-1991 7:00 p.m.	1941-1991 1:00 a.m.
January	81	63	66	77
February	80	59	60	74
March	80	54	56	72
April	81	51	53	72
May	87	57	61	82
June	88	59	63	86
July	90	61	66	88
August	92	61	67	88
September	92	60	68	88
October	90	55	65	85
November	84	59	66	80
December	82	64	69	78

AVERAGE WIND CONDITIONS - (1940 - 1992)

Month	Wind Direction	Maximum Wind Velocity	Mean Wind Velocity
January	NE	35	7.8
February	NE	37	8.2
March	NE	36	8.6
April	WSW	39	8.5
May	SW	31	6.9
June	SW	35	6.4
July	WSW	35	6.1
August	NE	29	5.6
September	NE	26	5.7
October	NE	28	5.7
November	NE	40	6.9
December	NE	39	7.3

Prevailing wind direction -- Northeast. Average wind speed is 7.0 mph.
Peak gust was 64 mph in November 1988.

AVERAGE SUNSHINE CONDITIONS (1940 - 1992)

	Vernal Equinox March 20	Summer Solstice June 21	Autumnal Equinox Sept. 23	Winter Solstice Dec. 22
Sunrise	7:45 a.m.	6:20 a.m.	7:25 a.m.	7:43 a.m.
Sunset	7:47 p.m.	8:55 p.m.	7:32 p.m.	5:26 p.m.

There are an average of 96.6 clear days per year, 126.4 rainy days per year, 161.8 cloudy days per year, and 106.8 partly cloudy days per year.
Sunshine comes predominantly from the South.

AVERAGE FOG CONDITIONS (1940 - 1992)

Month	Visibility 1/4 mile or less
January	2.9 days
February	1.8 days
March	1.5 days
April	1.1 days
May	2.3 days
June	2.1 days
July	2.1 days
August	3.5 days
September	4.0 days
October	4.6 days
November	3.2 days
December	2.7 days

Average fog per year is 31.8 days.

AVERAGE THUNDERSTORMS (1940 - 1992)

Month	Average per month
January	0.7
February	1.4
March	3.3
April	4.3
May	6.7
June	8.1
July	9.7
August	6.9
September	3.1
October	1.3
November	1.0
December	0.6

There are an average 47.2 thunderstorms per year.

UNEMPLOYMENT ANNUAL AVERAGES

Year	County	Knoxville	State	United States
1970	2.8	3.1	4.3	4.9
1971	3.0	3.3	4.7	5.9
1972	3.1	3.4	3.7	5.6
1973	3.0	3.1	3.9	4.9
1974	3.9	4.1	5.1	5.6
1975	6.1	6.6	8.3	8.5
1976	5.0	5.0	6.0	7.7
1977	4.8	5.1	6.3	7.1
1978	4.6	4.9	5.8	6.1
1979	4.5	4.7	5.8	5.8
1980	6.0	6.9	7.3	7.1
1981	7.7	8.5	9.1	7.6
1982	8.7	10.2	11.8	9.7
1983	10.4	11.8	11.5	9.6
1984	7.6	8.8	8.6	7.5
1985	6.1	7.6	8.0	7.2
1986	5.9	7.8	8.0	7.0
1987	5.3	6.4	6.6	6.2
1988	4.7	5.5	5.8	5.5
1989	4.4	5.4	5.1	5.3
1990	4.0	4.9	5.2	6.7
1991	4.6	5.7	6.6	6.7
1992	4.9	5.6	5.7	7.0
1993	3.9	4.7	5.7	6.8
January 1993	5.0	7.4	6.6	7.1
February 1993	4.3	6.5	5.9	7.0
March 1993	4.3	6.4	6.2	7.0
April 1993	4.7	6.0	6.8	7.0
May 1993	4.8	5.5	6.1	6.9
June 1993	5.1	5.8	6.0	7.0
July 1993	3.8	4.7	5.6	6.8
August 1993	4.2	4.7	5.3	6.5
September 1993	3.8	4.5	5.3	6.4
October 1993	3.3	4.0	4.6	6.3
November 1993	3.1	4.1	4.4	6.1
December 1993	2.8	3.9	4.3	6.0
January 1994	3.6	5.6	6.1	7.3
February 1994	3.6	5.8	6.1	7.1
March 1994	3.3	5.2	5.6	6.8

Source: Knoxville Chamber of Commerce, 1994

ACCRA COST OF LIVING INDEX

First Quarter 1994

The ACCRA Cost of Living Index measures differences between areas in the cost of consumer goods and services, excluding taxes and nonconsumer expenditures. It is based on 59 items, for which prices are collected quarterly by the chamber of commerce, economic development organization, or some similar organization in each participating urban area.

Among 20 U.S. metropolitan areas with more than 1.5 million population represented in the first quarter 1994 ACCRA Cost of Living Index, the after-taxes cost for a midmanagement standard of living ranged from roughly 36% above the nationwide average in Boston to 3% below the average in St. Louis and Kansas City. The ACCRA Cost of Living Index is compiled and published by ACCRA, the national association of community and economic development research professionals.

Sixteen of the 30 major metros registered living costs above nationwide average, which was based on price data collected for 298 urban areas of all sizes throughout the country. Among the four major metro areas with lower-than average index readings, none differed appreciably from the nationwide average; neither did Atlanta or Phoenix, with marginally higher-than-average indexes. The report includes data for 214 places in 190 Metropolitan Areas.

ACCRA COST OF LIVING INDEX
First Quarter 1994

Metropolitan Area	ACCRA Cost of Living Index (U.S. Average = 100)
Boston MA	135.6
Philadelphia PA-NJ	129.7
San Diego CA	127.5
Los Angeles-Long Beach CA	125.2
Chicago IL	121.6
Pittsburg PA	113.3
Miami FL	109.8
Portland OR	108.5
Denver CO	107.8
Minneapolis-Saint Paul MN	105.8
Cleveland OH	105.2
Dallas TX	104.9
Baltimore MD	103.8
Cincinnati OH	103.8
Phoenix-Mesa AZ	102.5
Atlanta GA	100.6
Houston TX	98.8
Tampa-St. Petersburg-Clearwater FL	98.2
Kansas City MO-KS	97.5
St. Louis MO-IL	97

APPENDIX C

DEPARTMENT PRODUCT LINES AND WORKSHEETS

CONTENTS -- APPENDIX C

C.1 Candy, Food and Beverage Product Line
C.2 Candy, Food and Beverage Worksheet
C.3 Infants and Toddlers Product Line
C.4 Infants and Toddlers Worksheet
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C.6 Linens and Domestics Worksheet
C.7 Men's Product Line
C.8. Men's Worksheet
C.9 Misses Sportswear Product Line
C.10 Misses Sportswear Worksheet

Candy, Food & Beverages Department Line

Coffee, Teas, etc.	Store Brand Packaged Name Brand Imports
Chocolate	Store brand Packaged Name Brand Imports
Pastries	Store bakery Packaged Name Brand
Candies	Store brand Packaged Name Brand Holiday Imports
Bottled Water	Plain Sparkling Flavor Sparking flavor
Bread/Crackers	Store Bakery Packaged Name Brand
Wine	Local United States Imports
Cheese	Slice Spreads

Cafe Setting for in-store dining

Candies

Pastries

Bread

Wine

Chocolates

Cheese & Crackers

Water, Soda, Milk

Coffee, Tea, Caffe Latte, Expresso, Cappuccino, etc.

Dept. Name:	Candy, Food & Beverages	Dept. #	9011
		Plan #	

Six-Month Merchandising Plan

Planned Sales Increase % for this Season	
Planned Sales for this Season	$48,330
Planned Markdowns for this Season	

Total Sales for Same Six Months Last Year	$48,330
Markdowns for Same Six Months Last Year	$8,565

	Plan (This Year)	Actual Plan (Last Year)
Gross Margin		42.21%
Cash Discount %		2.40%
Stock Turnover		2.67
Shortage %		3.30%
Average Stock		18,133
Markdown %		17.7%

Spring		February	March	April	May	June	July	Season
Fall		August	September	October	November	December	January	Season
Sales $	Last Year	4,495	3,963	9,183	11,599	14,644	4,446	48,330
	Last Year %	9.30%	8.20%	19.00%	24.00%	30.30%	9.20%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Retail Stock (BOM)	Last Year	11,686	9,908	19,284	26,678	26,359	12,894	106,809
	Last Year S/S	2.60	2.50	2.10	2.30	1.80	2.90	
	Plan							
	Plan S/S							
	% of Change							
	Revised							
	Actual							
Markdowns $	Last Year	600	514	1,285	1,799	1,542	2,826	8,566
	Last Year %	7.00%	6.00%	15.00%	21.00%	18.00%	33.00%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Purchases at Retail	Last Year	3,316	13,853	17,862	13,079	2,721	14,498	65,329
	Plan							
	Revised							
	Actual							
	On Order							
Retail Stock (EOM)	Last Year	9,908	19,284	26,678	26,359	12,894	20,120	
	Plan							
	% of Change							
	Revised							
	Actual							

Comment

Merchandise Manager

Buyer

Controller

Infants and Toddlers Department Line

Dress Clothes	Dresses/Pinafores
	Suits
	Dress pants
	Dress shirts
Casual Clothes	Overalls
	Rompers
	Shorts
	Shirts (short Sleeve)
	Shirts (Long Sleeve)
	Pants
	Knit Tops
	Jeans
Sweaters	Wool
	Blend
Accessories	Hats, caps, and bonnets
	Ties
	Tights
	Purses/wallets
	Suspenders
	Bibs
	Hair pieces
Underwear/Socks	Bloomers
	Training
	Underwear (Store Brand)
	Underwear (National Brand)
	Socks (Store Brand)
	Socks (National Brand)
	Bathing suits
Coats/Jackets	Dress
	Casual
	Play
Pajamas	Kimonos
	Sleepers
	Gowns
	Two-Piece Short
	Two-Piece Long
FOOTNOTE:	Shoes are in the Shoe Department

Dept. Name:	Infants & Toddlers	Dept. #	4011
		Plan #	

Six-Month Merchandising Plan

Planned Sales Increase % for this Season	
Planned Sales for this Season	$745,416
Planned Markdowns for this Season	

Total Sales for Same Six Months Last Year	$745,416
Markdowns for Same Six Months Last Year	$236,146

	Plan (This Year)	Actual Plan (Last Year)
Gross Margin		42.21%
Cash Discount %		5.60%
Stock Turnover		2.16
Shortage %		1.70%
Average Stock		344,687
Markdown %		31.7%

Spring / Fall		February / August	March / September	April / October	May / November	June / December	July / January	Season / Season
Sales $	Last Year	117,030	102,122	114,049	130,448	207,226	74,542	745,417
	Last Year %	15.70%	13.70%	15.30%	17.50%	27.80%	10.00%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Retail Stock (BOM)	Last Year	362,794	347,215	364,956	365,254	497,342	268,350	2,205,911
	Last Year S/S	3.10	3.40	3.20	2.80	2.40	3.60	
	Plan							
	Plan S/S							
	% of Change							
	Revised							
	Actual							
Markdowns $	Last Year	40,381	26,684	32,588	34,241	30,227	72,025	236,146
	Last Year %	17.10%	11.30%	13.80%	14.50%	12.80%	30.50%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Purchases at Retail	Last Year	141,832	146,547	146,935	296,777	8,461	85,116	825,668
	Plan							
	Revised							
	Actual							
	On Order							
Retail Stock (EOM)	Last Year	347,215	364,956	365,254	497,342	268,350	206,900	
	Plan							
	% of Change							
	Revised							
	Actual							

Comment

Merchandise Manager

Buyer

Controller

Linens and Domestics Department Line

Towels	Solid (blend) Solid (cotton) Print (blend) Print (cotton) Holiday
Sheets and Pillowcases	Solid (blend) Solid (cotton) Print (blend) Print (cotton) Holiday
Blankets	Cotton Wool Blend
Comforters/Bedspreads	Tailored Down-filled Quilted Comforter Covers
Table Linens/Coverings	Solid Print Napkins Napkin holders Placemats Holiday
Mattress Pads & Covers	Store Brand National Brand
Bath Shop	Shower Curtains and Accessories Bathroom Rugs/Sets Tub Mats Toiletry Accessories
Bedding Accessories	Shams Pillow Covers Pillows Dust Ruffles

FOOTNOTE:

Holiday consists of any event thru the year, i.e., Easter, Valentines Day, Holloween, Christmas, 4th of July, ect.

Dept. Name:	Linens and Domestics	Dept. #	7051
		Plan #	

Six-Month Merchandising Plan

Planned Sales Increase % for this Season	
Planned Sales for this Season	$467,712
Planned Markdowns for this Season	

Total Sales for Same Six Months Last Year	$467,712
Markdowns for Same Six Months Last Year	$137,731

	Plan (This Year)	Actual Plan (Last Year)
Gross Margin		34.0
Cash Discount %		7.80%
Stock Turnover		2.03
Shortage %		2.10%
Average Stock		230,485
Markdown %		29.4%

Spring		February	March	April	May	June	July	Season
Fall		August	September	October	November	December	January	Season
Sales $	Last Year	43,263	59,867	45,976	114,028	156,450	48,128	467,712
	Last Year %	9.25%	12.80%	9.83%	24.38%	33.45%	10.29%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Retail Stock (BOM)	Last Year	142,769	182,595	182,985	339,804	373,915	197,323	1,419,391
	Last Year S/S	3.30	3.05	3.98	2.98	2.39	4.10	
	Plan							
	Plan S/S							
	% of Change							
	Revised							
	Actual							
Markdowns $	Last Year	17,698	11,487	9,958	22,588	30,383	45,617	137,731
	Last Year %	12.85%	8.34%	7.23%	16.40%	22.06%	33.12%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Purchases at Retail	Last Year	100,787	71,744	212,753	170,727	10,241	90,423	656,675
	Plan							
	Revised							
	Actual							
	On Order							
Retail Stock (EOM)	Last Year	182,595	182,985	339,804	373,915	197,323	194,002	
	Plan							
	% of Change							
	Revised							
	Actual							

Comment

Merchandise Manager

Buyer

Controller

Men's Department Line

Suits/Formal Wear	Tuxedos (wool) Tuxedos (blend) Suits (wool) Suits (blend) Sportcoats
Pants	Dress Slacks Casual Slacks Jeans Shorts
Coats	Overcoats Topcoats Rain Coats Dual Purpose Coats
Sport Shirts	Short Sleeve (cotton & cotton blend) Short Sleeve (blend) Long Sleeve (cotton & cotton blend) Long Sleeve (blend)
Dress Shirts	Short Sleeve Button Down (cotton & cotton blend) Short Sleeve Button Down (blend) Short Sleeve (cotton & cotton blend) Short Sleeve (blend) Long Sleeve Button Down (cotton & cotton blend) Long Sleeve Button Down (blend) Long Sleeve (cotton & cotton blend) Long Sleeve (blend)
Sweaters	Cardigan (wool) Cardigan (cotton & cotton blend) Cardigan (blend) Pullover (wool) Pullover (cotton & cotton blend) Pullover (blend) Vests (wool) Vests (cotton & cotton blend) Vests (blend)

FOOTNOTE:

Men's Furnishings Department carries all underwear, socks, pajamas, bathing suits, ties, gloves, mufflers, small leather goods, handkerchiefs, hats, caps, jewelry, etc.

Dept. Name:	Men's Department	Dept. #	3011
		Plan #	

Six-Month Merchandising Plan

Planned Sales Increase % for this Season	
Planned Sales for this Season	$710,644
Planned Markdowns for this Season	

Total Sales for Same Six Months Last Year	$710,644
Markdowns for Same Six Months Last Year	$153,007

	Plan (This Year)	Actual Plan (Last Year)
Gross Margin		34%
Cash Discount %		5.60%
Stock Turnover		1.27
Shortage %		2.10%
Average Stock		557,548
Markdown %		21.53%

Spring / Fall		February / August	March / September	April / October	May / November	June / December	July / January	Season / Season
Sales $	Last Year	96,648	95,937	110,150	118,678	200,402	88,831	710,646
	Last Year %	13.60%	13.50%	15.50%	16.70%	28.20%	12.50%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Retail Stock (BOM)	Last Year	318,938	292,608	438,397	367,902	501,005	364,207	2,283,057
	Last Year S/S	3.30	3.05	3.98	3.10	2.50	4.10	
	Plan							
	Plan S/S							
	% of Change							
	Revised							
	Actual							
Markdowns $	Last Year	26,317	22,951	15,454	24,787	22,186	41,312	153,007
	Last Year %	17.20%	15.00%	10.10%	16.20%	14.50%	27.00%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Purchases at Retail	Last Year	96,634	264,677	55,109	276,568	85,790	206,986	985,764
	Plan							
	Revised							
	Actual							
	On Order							
Retail Stock (EOM)	Last Year	292,608	438,397	397,902	501,005	364,207	441,050	
	Plan							
	% of Change							
	Revised							
	Actual							

Comment

Merchandise Manager

Buyer

Controller

Misses Sportswear Department Line

Blouses	Short Sleeve (silk) Short Sleeve (cotton & cotton blend) Short Sleeve (blend) Long Sleeve (silk) Long Sleeve (cotton & cotton blend) Long Sleeve (blend)
Knit Tops	Short Sleeve (cotton & cotton blend) Short Sleeve (blend) Long Sleeve (cotton & cotton blend) Long Sleeve (blend) Sleeveless
Sweaters	Cardigans (wool) Cardigans (blend) Cardigans (cotton & cotton blend) Pullover (wool) Pullover (blend) Pullover (cotton & cotton blend)
Pants	Tailored (wool) Tailored (cotton & cotton blend) Tailored (blend) Casual Slacks Jeans Shorts
Skirts	Tailored Long Tailored Short Casual Long Casual Short
Dresses	Tailored Casual
Swimwear/Beachwear	One-piece Two-piece Cover-ups Beach Towels
Active Sportswear	Two-Piece Sets Zipper (silk) Two-Piece Sets Zipper (blend) Sweatsuits two-piece (cotton) Sweatsuits two-piece (blend)

FOOTNOTE:

Tailored refers to a classic style that is oriented toward the workplace, but not formal.

Turtle necks, cowl necks are included in Knit Tops.

Dept. Name:	Misses Sportswear	Dept. #	1045
		Plan #	

Six-Month Merchandising Plan

Planned Sales Increase % for this Season	
Planned Sales for this Season	$1,183,896
Planned Markdowns for this Season	

Total Sales for Same Six Months Last Year	$1,183,896
Markdowns for Same Six Months Last Year	$311,022

	Plan (This Year)	Actual Plan (Last Year)
Gross Margin		35.1
Cash Discount %		7.80%
Stock Turnover		1.20
Shortage %		2.40%
Average Stock		982,571
Markdown %		26.7%

Spring		February	March	April	May	June	July	Season
Fall		August	September	October	November	December	January	Season
Sales $	Last Year	181,136	174,033	187,056	200,078	298,342	143,251	1,183,896
	Last Year %	15.30%	14.70%	15.80%	16.90%	25.20%	12.10%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Retail Stock (BOM)	Last Year	1,014,362	871,904	1,167,227	1,054,413	1,050,163	916,809	6,074,878
	Last Year S/S	5.60	5.01	6.24	5.27	3.52	6.40	
	Plan							
	Plan S/S							
	% of Change							
	Revised							
	Actual							
Markdowns $	Last Year	50,697	45,720	45,098	44,476	51,008	74,023	311,022
	Last Year %	16.30%	14.70%	14.50%	14.30%	16.40%	23.80%	100.00%
	Plan							
	Plan %							
	% of Change							
	Revised							
	Actual							
Purchases at Retail	Last Year	89,375	515,076	119,340	240,304	215,996	103,584	1,283,675
	Plan							
	Revised							
	Actual							
	On Order							
Retail Stock (EOM)	Last Year	871,904	1,167,227	1,054,413	1,050,163	916,809	803,119	
	Plan							
	% of Change							
	Revised							
	Actual							

Comment

Merchandise Manager

Buyer

Controller

APPENDIX D

PROPOSITIONS OF SIMULATION EFFECTIVENESS GREENBLAT, (1973), SHERRELL & BURNS, (1982) AND JOLLY, (1983)

CONTENTS -- APPENDIX D

D.1 Greenblat's Propositions
D.2 Sherrell and Burns Propositions
D.3 Jolly's Propositions

Greenblat's (1973) Propositions on Pedagogical Effects of Simulations

1) Motivation and Interest

   a) Participation in simulation games is itself interesting and involving
   b) Participation in simulation games increases interest in the topics simulated
   c) Participation in simulation games increases interest in the course in which the simulation is employed
   d) Participation in simulation games increases interest, enthusiasm, and commitment to learning in general

2) Cognitive Learning

   a) Participants in simulations games gain factual information
   b) Participants in simulation games acquire concrete meaning for abstract concepts
   c) Participants in simulation games learn procedural sequences
   d) Participants in simulation games learn general principles of the subject matter simulated
   e) Simulation games provide simplified worlds from which students can understand the structure of the "real" world
   f) Participants in simulation games gain in explicitness
   g) Participants in simulation games learn a systematic analytical approach
   h) Participants in simulation games learn better decision-making skills
   i) Participants in simulation games learn "winning strategies"

3) Changes in Later Course Work

   a) Participation in simulation games makes later work more meaningful
   b) Participation in simulation games leads students to more sophisticated and relevant inquiry
   c) Class discussion following a simulation will involve greater participation by class members

4) Affective Learning Regarding Subject Matter

   a) Participation in simulation games leads to changed perspectives and orientations
   b) Participation in simulation games leads to increased empathy for others

c) Participation in simulation games leads to increased insight into the predicament, pressures, uncertainties and intellectual difficulties of others

5) General Affective Learning

a) Participation in simulation games gain increased self-awareness
b) Participation in simulation games gain a greater sense of personal efficacy and potency

6) Changes in Classroom Structure and Relations

a) Use of simulation games promotes better student-teacher relations
b) Use of simulation games leads students to perceive greater freedom to explore ideas
c) Use of simulation games lead students' becoming more autonomous, thus changing teacher-student relationship
d) Use of simulation games leads to student perceiving teachers more positively
e) Use of simulation games produces more relaxed, natural exchange between students and teachers
f) Use of simulation games leads to increased knowledge of other students (by students) and greater peer acceptance
g) Use of simulation games involves a diminishing of the teacher's role as judge and jury
h) Use of simulation games leads to teacher perceiving students more positively

Sherrell and Burns (1982) Factors for Attitude Scale Analysis

Factor 1 - Perceived Knowledge

- Gained insight into decision problem
- Increased awareness of difficulties involved
- Gained insight into pressures faced by decision makers
- Learned the procedures of location decision elements
- Aided understanding of location decision elements
- Increased appreciation of problems faced
- Learned general principles involved
- Increased awareness of uncertainties faced
- Gained actual information from exercise

Factor 2 - Enjoyment

- Exercise was interesting
- Exercise was fun
- Exercise increased my interest
- Exercise enjoyable
- Exercise increased my enthusiasm to learn
- Exercise will make other course work enjoyable
- Exercise was boring
- Exercise increased my interest in course
- Exercise leads to more student independence
- Exercise leads to more relaxed exchange between students and teachers

Factor 3 - Perceived Benefits

- Increased my sense of my personal abilities
- Increased my awareness of my own potential
- Helped increase my own self-awareness
- Would lead me to participate more in related class discussion
- Increased my interest in learning in general

Factor 4 - Student/Teacher Relations

- Leads teachers to perceive students more positively in general
- Promotes better student/teacher relationships
- Leads to greater peer acceptance
- Helps students perceive teachers more positively

Factor 5 - Decision Skills

- Exercise was too low-level
- Changed my perspective on some parts of marketing
- Gained better decision skills

Jolly (1983) Survey Instrument Categories

Motivation and Interest

- Exercise was interesting
- Exercise was involving
- Exercise increased my interest in the topic
- Exercise increased my interest in course
- Exercise increased my interest in learning
- Exercise increased my enthusiasm to learn
- Exercise increased my commitment to learn

Perceived Learning

- Gained better decision skills
- Helped learn "winning strategies"
- gained actual information
- Learned general principals involved
- helped understand structure of "real world"
- helped identify elements in six-month planning
- Learned systematic and analytical approach

Changes in the Character of Later Course Work

- Believe will make other work in the course more meaningful
- Will lead me to asking better questions
- Will lead me to participate more in class discussion on this topic

Affective Learning re Subject Matter

- Changed perspective on some part of retailing
- Increased appreciation for those problems involved in six-month planning
- Increased insight into the ways in which people who make retail decisions see the world
- Gave insight into the pressures faced by those making six-month planning decisions
- Increased awareness of the uncertainties faced by those involved in six-month planning decisions
- Increased awareness of the difficulties in general of those involved with six-month planning

Affective Learning in General

- Increased my sense of my personal abilities
- Increased my awareness of my own potential
- Helped increase my own self-awareness

Change in Classroom Structure and Relations

- Lead students to be more independent, thus changing student-teacher relationships
- Provides a relaxed, natural exchange between students and teachers
- Provides greater freedom for students to explore ideas
- Leads teachers to perceive students more positively in general
- Promotes better student/teacher relationships
- Leads to greater peer acceptance
- Helps students perceive teachers more positively

Enjoyment

- Exercise was enjoyable
- Exercise was fun
- Exercise made me feel uncomfortable
- Exercise took too long
- Exercise was boring
- Exercise was too low level
- Exercise was too unstructured

APPENDIX E

SIMULATION SURVEY

Name:_____

Six-Month Plan
Exercise Rating Scale

Instructions: For each of the following, please indicate the degree to which you agree by circling the appropriate number. Please think only in terms of the exercise which you have just completed.

Strongly Agree					Strongly Disagree
The exercise was interesting	1	2	3	4	5
The exercise increased my enthusiasm to learn in general	1	2	3	4	5
The exercise helped me to increase my own self-awareness	1	2	3	4	5
An exercise such as this one lead students to be more independent	1	2	3	4	5
The exercise increased my insight into the ways in which retail store decisions are made	1	2	3	4	5
The exercise was engaging	1	2	3	4	5
I gained better decision-making skills	1	2	3	4	5
The exercise was boring	1	2	3	4	5
This exercise increased my appreciation for those problems involved in six-month planning	1	2	3	4	5
An exercise such as this one lead teachers to see students more positively	1	2	3	4	5
The exercise increased my interest in the course	1	2	3	4	5
The exercise was enjoyable	1	2	3	4	5
I gained actual information from this exercise	1	2	3	4	5

This exercise increased my sense of my personal abilities	1	2	3	4	5
This exercise changed my perspective of retail buying	1	2	3	4	5
An exercise such as this one provides greater freedom for students to explore ideas	1	2	3	4	5
I learned the general principles involved in six-month planning	1	2	3	4	5
The exercise increased my commitment to learn in general	1	2	3	4	5
The exercise was too unstructured	1	2	3	4	5
I believe the exercise will make other work in the course more meaningful	1	2	3	4	5
The exercise gave me insight into the pressures faced by those making six month planning decisions	1	2	3	4	5
An exercise such as this one help students see teachers in a more positive light	1	2	3	4	5
This exercise increased my awareness of my own potential	1	2	3	4	5
The exercise increased my interest in the topic	1	2	3	4	5
The exercise was fun	1	2	3	4	5
I believe this exercise would lead me to ask better questions	1	2	3	4	5
An exercise such as this one provided a more relaxed, natural exchange between student and teacher	1	2	3	4	5
This exercise increased my awareness of uncertainties faced by those making six-month planning decisions	1	2	3	4	5
An exercise such as this one promotes better student-teacher relationships	1	2	3	4	5
This exercise took too long	1	2	3	4	5
This exercise increased my awareness of difficulties involved six-month planning	1	2	3	4	5
I believe the exercise would lead me to participate more in a class discussion on this topic	1	2	3	4	5

APPENDIX F

SURVEY SAS RESULTS

	ITEM	MEAN	STANDARD DEVIATION	MIN	MAX
1	The exercise was interesting	3.667	0.4815	3.00	4.00
2	The exercise increased my enthusiasm to learn in general	3.375	0.6468	2.00	4.00
3	The exercise helped me to increase my own self-awareness	3.708	0.7506	2.00	5.00
4	An exercise such as this one lead students to be more independent	3.083	0.8297	1.00	4.00
5	The exercise increased my insight into the ways in which retail store decisions are made	4.375	0.8753	1.00	5.00
6	The exercise was engaging	3.583	0.6538	2.00	5.00
7	I gained better decision-making skills	3.542	0.7210	2.00	5.00
8	The exercise was boring	2.292	0.7506	1.00	3.00
9	This exercise increased my appreciation for those problems involved in six-month planning	3.833	0.5646	3.00	5.00
10	An exercise such as this one lead teachers to see students more positively	2.957	0.4745	2.00	4.00
11	The exercise increased my interest in the course	3.292	0.6240	2.00	4.00
12	The exercise was enjoyable	3.167	0.6370	2.00	4.00
13	I gained actual information from this exercise	3.792	0.8329	2.00	5.00
14	This exercise increased my sense of my personal abilities	3.167	0.7613	2.00	5.00
15	This exercise changed my perspective of retail buying	4.042	0.9990	2.00	5.00
16	An exercise such as this one provides greater freedom for students to explore ideas	3.958	0.6902	3.00	5.00
17	I learned the general principles involved in six-month planning	4.042	0.8060	3.00	5.00
18	The exercise increased my commitment to learn in general	2.958	0.6240	2.00	4.00
19	The exercise was too unstructured	2.500	1.1795	1.00	5.00
20	I believe the exercise will make other work in the course more meaningful	3.792	0.5882	3.00	5.00
21	The exercise gave me insight into the pressures faced by those making six month planning decisions	4.333	0.6370	3.00	5.00
22	An exercise such as this one help students see teachers in a more positive light	2.792	0.6580	1.00	4.00
23	This exercise increased my awareness of my own potential	3.292	0.6240	2.00	4.00
24	The exercise increased my interest in the topic	3.375	0.8753	1.00	5.00
25	The exercise was fun	2.958	0.8586	1.00	4.00
26	I believe this exercise would lead me to ask better questions	3.542	1.0623	1.00	5.00
27	An exercise such as this one provided a more relaxed, natural exchange between student and teacher	2.958	1.9078	1.00	5.00
28	This exercise increased my awareness of uncertainties faced by those making six-month planning decisions	4.292	0.5500	3.00	5.00
29	An exercise such as this one promotes better student-teacher relationships	2.875	0.7974	1.00	4.00
30	This exercise took too long	2.375	0.8242	1.00	4.00
31	This exercise increased my awareness of difficulties involved six-month planning	4.417	0.5835	3.00	5.00
32	I believe the exercise would lead me to participate more in a class discussion on this topic	3.583	1.0179	2.00	5.00

VITA

Tanya Dix was born in Greenbrae, California on March 12, 1968. She attended schools in the public system of Novato, California, the Marin County Public School System, where she graduated from Novato High School in June, 1986. She entered the University of California at Davis during September of 1986 where in June, 1991 she received the Bachelor of Science in Agriculture and Managerial Economics with a minor in Medieval History. After working for two years in the private sector, she entered the Master's program in Textiles, Retailing and Consumer Sciences at the University of Tennessee, Knoxville in August of 1993. The master's degree was received May, 1995.