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James Hogg  
*University of Central Florida*



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DESIGNING AN EXPERIENTIAL WEB-BASED LEARNING MODEL TO DELIVER  
THE ACQUISITION AND APPLICATION OF KNOWLEDGE TO HOSPITALITY  
EVENT MANAGEMENT STUDENTS' USING ROLE-PLAY SIMULATIONS

by

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A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy in the Department  
of Educational Research, Technology, and Leadership  
in the College of Education at the  
University of Central Florida  
Orlando, Florida

Spring Term  
2010

Major Professors: Dr. Glenda Gunter  
Dr. Haiyan Bai

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## ABSTRACT

Most hospitality institutions have increasingly moved classes online but are concerned about migrating classes and instructional content online. The concern is most Web-based models are designed to deliver the acquisition of knowledge but lack the ability to transform that knowledge into applied career skills for practical use in the industry.

The purpose of this study was to test a new Web-based instructional model. The model supported delivering both the acquisition and application of knowledge. Educators, researchers, and practitioners can utilize the new model to enhance the application of career skills and enhance organizational objectives by providing just-in-time training. The new Web-based instructional model can be delivered through multiple platforms including computers, electronic devices, wireless devices and mobile devices.

The application of knowledge was delivered through experiential role-play exercises delivered live to the comparison group and virtual, inside Second Life, to the treatment group. An Analysis of Co-Variance (ANCOVA) revealed a significant difference between groups with higher application scores for the students who received the role-play live compared to virtual. In addition, an analysis was conducted to explore factors to consider when examining the cost effectiveness of Web-based instructional content. Factors determined to be important were developmental costs, delivery costs, and reusability of the Web-based instruction.

This dissertation is dedicated to my family, friends and God.

The death of my father, David P. Hogg caused me to reflect on my life and pursue my PhD. It was a dream we both shared, and he consistently encouraged and challenged me to exceed my own expectations and to always strive for excellence. To my mother, Bertha Hogg, whose strength and determination in life has shined as a beautiful star for me to follow through the process of obtaining my dreams. Without her constant love, support, and heart, I would not be the man I am today. To my brothers, John and David Hogg, who remind me of loyalty, family and commitment while showing me the importance of love and family.

To all of my friends in my support group: Nick, Roy, Nan, Shauna, Clint, Gloria, Alan, Chrissie, Johnny, Paul, Jon-Michael, Dr. David, Chablis and so many others who reminded me to maintain balance in all aspects of my life to include mental, physical, emotional, and spiritual balance. And most important, to God who, through Him, all things are possible.

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To Dr. Atsusi Hirumi, my mentor, professor and friend. Thank you for guiding me throughout the instructional technology program and helping me during the dissertation process. I greatly appreciate all the help and guidance you have provided and respect you as a scholar, researcher, and professor.

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To Gloria Nelson, Certified Special Events Professional (CSEP), of Gloria Nelson Event Design, LLC, words cannot describe the gratitude and joy I have in my heart for you, your skills, your talent and your friendship. I am truly blessed to have you in my life your strength and determination in your career and life has been a beacon for me to follow not only today, but for the rest of my life.

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## CHAPTER 1 THE PROBLEM AND ITS CLARIFYING COMPONENTS

### Introduction

Information technology has been integrated into everyday life and the new students who have entered college expect to learn about technology and learn with technology (Lowry & Flohr, 2004). In order to address these changes in societal needs and remain competitive, universities have pushed to increase the use of technology in teaching and learning. Faculty have grappled with the academic paradigm shift as well as the need to learn and use new technologies (Lowry & Flohr). Universities across the United States have begun to use four basic modes of instructional delivery to provide course materials to include: (a) traditional, (b) Web-facilitated (c) blended/hybrid, and (d) online (Allen & Seaman, 2008). In traditional course delivery methods the course is delivered with no online technology and content is delivered in writing or orally (Allen & Seaman). In Web-facilitated, the course uses Web-based technology to facilitate what is essentially a face-to-face course, but materials are supplemented using web pages or a course management system (Allen & Seaman). In blended or hybrid, the course content is delivered both face-to-face and online. This typically involves online discussions and a reduced number of face-to-face meetings (Allen & Seaman). In online, all or most of the course content is delivered online with typically no face-to-face meetings (Allen & Seaman).

Traditional, web facilitated, blended/hybrid, and online modes of hospitality education have focused on the acquisition of fundamental knowledge and have also provided extra exercises to enhance learners' abilities to apply that fundamental knowledge (Zemke & Zemke, 1984). Many different tracks have been offered within hospitality management that help develop specific fundamental hospitality Knowledge with one of the main areas being Meetings, Incentives, Conventions, and Events (MICE) track (Phelan, Kavanaugh, Mills, & SooCheong, 2009).

To enhance learners' ability to apply MICE knowledge, hospitality education has used five instructional methods, which include: (a) lecture, (b) problem-based learning (PBL), (c) case study (d) experiential exercise, and (e) guest speakers (Phelan et al., 2009). In lectures, the instructor, in most cases delivers the materials to the students by presenting various topics through speech and visual cues (Phelan et al.). In problem-based learning (PBL), students are placed in teams and then are provided with realistic scenarios that they must analyze and develop recommendations regarding a course of action (Phelan et al.). In case studies, theoretical examples are used to recount actual events in real business. These are valuable for students because they provide real life business problems (Phelan et al.). In experiential exercises techniques provide students the opportunity to gain work experiences through on-campus restaurants or hotels, or by executing meetings and events. Off-campus experiential exercises may include field trips, internships, or part time or volunteer work (Phelan et al.).

### Problem Statement

The basic problem addressed by this dissertation was that more hospitality institutions with MICE tracks and programs were moving classes online and more students were looking at Web-based technology driven courses. At the same time, faculty and program administrators were resistant to adopt these new technologies into the classroom and the curriculum (Lowrey & Fowler, 2004). While these Web-based technology driven classes have been successful in delivering the acquisition of MICE knowledge, it takes extra effort, resources, and time for faculty and program administrators to design interactions for learners' ability to apply MICE knowledge (Lowrey & Fowler). In order to support the application of MICE knowledge, the use of the five instructional methods, which include: (a) lecture, (b) problem-based learning (PBL), (c) case study (d) experiential exercise, and (e) guest speakers, must be integrated as interactions into the Web-based instruction (Phelan et al., 2009).

### Purpose of the Study

The purpose of this study was to investigate and test the integration of experiential exercises in a Web-based model for the acquisition and application of MICE students' knowledge. The study investigated and tested role-play simulations linked with a Web-based learning management system to deliver the acquisition and application of knowledge to hospitality event management students using role-play simulations.



## Research Questions and Hypothesis

The following research questions and null hypothesis were used to guide this study:

1. Does it make a difference if role-play simulations are delivered virtual versus live for hospitality event management students' application of knowledge?  
 $H_0$  There is no statistically significant difference between hospitality event management students' application of knowledge when comparing virtual versus live role-play simulations.
  
2. Is there a difference in the cost effectiveness of Web-based instructional content when examining the developmental costs, delivery costs, and the reusability of the Web-based instruction?

To examine Research Question 2, a comparative financial analysis was conducted and empirical research was examined to determine the developmental costs, delivery costs, and the reusability of the Web-based instruction.

To examine Research Question 2, a financial analysis was conducted for the general developmental cost of Web-based instruction. Empirical data on cost effectiveness were explored, and a second financial analysis was conducted for delivery systems to examine the difference between virtual and live role-play simulations.

In order to support the application of MICE knowledge, role-play simulations were integrated into the e-learning instruction. For the purpose of this study, the

fundamental knowledge that was measured was hospitality students' MICE technology knowledge and the ability to apply that knowledge in event management.

In order to test the two research questions and null hypothesis, a true experimental post-test only design was used. Two groups that were similar to each other were compared (Shadish, Cook, & Campbell, 2002). The independent variable was the role-play (Treatment), and the dependent variable was the knowledge application test scores (TotalAppScore). The groups were randomly assigned to two groups, a comparison group and the other as the treatment group. The groups were randomized into the two groups for three separate classes, which created a clustered sample. The students from all three classes were combined based on their random assignment into treatment or comparison to create the entire test population. The population was comprised of hospitality event management students from a major metropolitan research university. The comparison group (R O<sub>1</sub> X<sub>1</sub> O<sub>3</sub>) received a scripted, discrete role-play live. The treatment group (R O<sub>2</sub> X<sub>2</sub> O<sub>4</sub>) received the same scripted, discrete role-play in a multi-user virtual environment (MUVE). In order to test Research Question 2, a financial analysis was conducted.

### Conceptual Framework

A conceptual framework identifies and illustrates the relationship between key variables under study, predicts the results, informs the design of the study, informs the design of the treatment, and helps explain the results in light of current and past research.

The conceptual framework for this study was based on both theory and empirical research.

### Theoretical Foundations

The theoretical foundations of this research were grounded in Jarvis' experiential learning theory. Jarvis (1995) tried to show there are a number of responses to a potential learning situation. He tested Kolb's experiential model on various groups of adult students and based his model on their own experience of learning. The variables in Jarvis' model are: (a) the person, (b) the situation, (c) experience, (d) the person: reinforced but relatively unchanged, (e) practice experimentation, (f) memorization, (g) reasoning and reflecting, (h) evaluation, and (i) the person: changed and more experienced.

For the purposes of the present research, Jarvis' experiential learning theory was modified to design an experiential Web-based model to deliver the acquisition and application of knowledge to hospitality event management students' using role-play simulations. Jarvis' model was modified to link certain variables together to illustrate the Web-based instructionally designed unit and the role-play simulations. The model was also modified to show the variables for the acquisition and application of knowledge.

## Empirical Foundations

The following section provides an overview of the empirical research that contributed to the conceptual framework and the design of the study. The empirical foundations focused on (a) hospitality education, (b) event management (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory. The study was also intended to contribute to the literature related to (a) hospitality education, (b) event management (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory. Throughout the review of the literature, a focus was maintained on the evolution of research methods used for developing hospitality event management students' fundamental knowledge competencies. More detail on empirical foundations is presented in the review of the literature.

## Significance of the Study

The significance of the study was related to the opportunity to build on and contribute to work in the application of hospitality event management students' fundamental knowledge. As such, this study was conducted to provide additional insight into the areas of (a) hospitality education, (b) event management (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory. The study was also intended to contribute to the literature related to these areas. This study was viewed as important to both researchers and practitioners in that it had the potential, through the review of the literature and the research, to increase the general body of

research knowledge related to the acquisition and application of hospitality event management students' fundamental competencies.

This study was important to researchers in that a modification to Jarvis' experiential learning model was proposed. Jarvis' model provides a detailed example of Kolb's (1984) experiential learning theory and explains how participants may or may not change from the experience. In the present research, Jarvis' model was modified. It was theorized that by modifying Jarvis' model to develop a Web-based learning model the model would be capable of delivering the acquisition and application of fundamental hospitality MICE knowledge.

The results of this study were intended to assist future researchers to determine if the modified model better explains the variables posed in Jarvis' original model for the acquisition and the application of hospitality MICE students' fundamental competencies. The study was also intended to demonstrate for practitioners and researchers the feasibility of an experiential exercise that enhances the acquisition and application of hospitality students' fundamental MICE competencies that can be delivered over distance, time, anyplace, and anywhere through linking experiential exercises into a Web-based model.

Finally, this study was important in assisting hospitality educators and instructional designers in their consideration of alternative instructional methods for facilitating the acquisition and application of fundamental hospitality MICE

competencies by providing just-in-time education that can be delivered over a distance at anyplace anytime.

### Operational Definitions

The following terms, treatments, and definitions were proposed to conduct this study.

ADDIE Model: The ADDIE model is an Instructional Systems Design (ISD) model traditionally used by instructional designers. The five phases are (a) Analysis, (b) Design, (c) Development, (d) Implementation, and (e) Evaluation (Dick, Carey, & Carey, 2005).

Discrete role-play: Is a role-play where the variables do not change throughout the simulation. This ensures that the discrete simulation remains the same between test groups. (Feinstein & Parks, 2002).

E-learning: The use of the term e-learning has grown rapidly and is frequently used interchangeably with terms such as: online education, virtual learning, distributed learning, networked learning, Web-based learning, and also open and distance learning. Despite their unique attributes, each of these terms fundamentally refers to educational processes that utilize information and communications technology to mediate asynchronous as well as synchronous learning and teaching activities (Naidu, 2002).

Experiential Learning: Experiential learning is the process of making meaning from direct experience. Kolb helped to popularize the idea of experiential learning drawing heavily on the work of Dewey and Piaget. (Kolb, 1984)

Experiential Learning Theory (ELT): This theory provides a model of the learning and of adult development, both of which are consistent with what we know about how people learn, grow, and develop. The theory is called “Experiential Learning” to emphasize the central role that experience plays in the learning process. Another reason the theory is called “experiential” is its intellectual origins in the experiential works of Dewey, Lewin, and Piaget. Taken together they form a unique perspective on learning and development. (Kolb, 1984)

Event Management: Event management is the process by which an event is planned, prepared, and produced. As with any other form of management, it encompasses the assessment, definition, acquisition, allocation, direction, control, and analysis of time, finances, people, products, services, and other resources to achieve objectives (Silvers, 2005). An event manager’s job is to oversee and arrange every aspect of an event, including researching, planning, organizing, implementing, controlling, and evaluating an event’s design, activities, and production. (Silvers, 2005)

Instructional Design (ID): In the field of instructional technology, instructional design (ID) is a central intellectual process that guides the design and development of successful learning environments (Nelson, Magliaro, & Sherman, 1987). ID models have been depicted in a range of visual representations. Perhaps the most frequently seen is a

linear row of boxes that depicts ID as a step-by-step, invariant procedure, a strategy used to teach ID novices (Dick et al., 2005). Other models represent the ID process with circles, curved intersecting lines, or no lines at all trying to illustrate a more dynamic, interactive approach to the design of instruction (Morrison, Ross, & Kemp, 2004).

Instructional Systems Design (ISD): Instructional systems design is the systematic approach to training and the application of proven learning processes to determine the what, where, when, and how of training (U.S. Army Field Artillery School, 1984).

Learning Management Systems (LMS): Are Web-based *systems* that allow instructors and/or students to share materials, submit and return assignments, and communicate online (Lonn & Teasley, 2009).

MICE: Meetings, Incentives, Conventions, and Exhibitions. (Ladkin, Weber, & Kye-Sung 2002).

Multi-user Virtual Environments (MUVES): This term refers to online, multi-user virtual environments. The term was first used in Chip Morningstar's 1990 paper *The Lessons of Lucasfilm's Habitat*. (Morningstar & Farmer, 1990). The MUVE utilized for this study was *Second Life*, which is a MUVE platform, created by Linden Labs and can be found at [www.secondlife.com](http://www.secondlife.com)

Reusable Learning Objects (RLOs): Reusable learning objects are any entity, digital or non-digital, that can be used, reused, or referenced during technology-supported learning. This includes computer-based training systems, interactive learning



environments, intelligent computer-aided instructional systems, distance learning systems, and collaborative learning environments (Barritt & Alderman, 2004).

Role-play: This term is defined as to enact (a situation or scenario) through role-play; to assume the part of or portray (a person or character) or to take on (a role) through role-playing or in a role-playing game. (Role-play, N.D.)

LRP: refers to a live role-play that is delivered face-to-face.

VRP: refers to a virtual role-play that is delivered inside a MUVE.

Simulation: Simulations has been defined as “the dynamic execution or manipulation of a model of an object system for some purpose” (Barton, 1970, p.6)

Iconic Simulation: Simulations that are used as an analytical tool (Feinstein & Parks, 2002).

Symbolic Simulations: Simulations that are used as learning environments (Feinstein & Parks, 2002).

Discrete Simulation: Uses “blocks of time during which no changes to the simulation state occur” (McHaney & White, 1998, p. 193)

Virtual Learning Environments (VLEs): There are a number of definitions of a VLE, but the common elements that are used to describe it are that the environment is computer-based, and it involves sharing of information between other students and instructors. Further to this, a VLE has the potential to improve communication and offer support to students (Leese, 2009)

Wiki: A wiki is a Web-based software that allows all viewers of a page to change content by editing the page online in a browser. This makes the wiki a simple and easy-to-use platform for cooperative work on texts and hypertexts (Ebersbach, Glaser, & Heigl, 2006).

Web-based learning: In Web-based learning the course uses Web-based technology to facilitate what is essentially a face-to-face course but materials are supplemented using Web pages or a course management system (Allen and Seaman, 2008).

### Organization of the Study

The basic problem addressed in this study and its clarifying components has been presented in this chapter. Chapter 2 contains a review of the literature and related research. Chapter 3 focuses on the methods and procedures used to conduct the research. Chapter 4 presents the findings of the research. Chapter 5 contains a summary and discussion of the findings, conclusions, and recommendations for future research.

## CHAPTER 2 REVIEW OF THE LITERATURE AND RELATED RESEARCH

### Introduction

The review of literature has been organized using the conceptual framework that identifies and illustrates the relationship between key variables under study. The framework was also used to predict the results for the study, to inform the design of the study and the treatment, and has been helpful in explaining the results in light of current and past research. The conceptual framework for this study was based on both theory and empirical research.

### Theoretical Foundations

The theoretical foundations of this research were grounded in Jarvis' experiential learning model. Jarvis (1995) tried to show that there a number of responses to potential learning situations. He used Kolb's experiential model and tested it on various groups of adult students to explore and base his own model on experiential learning. Figure 1 shows Jarvis' experiential learning model which consists of nine variables, including (a) the person, (b) situation, (c) experience, (d) the person: reinforced but relatively unchanged, (e) practice experimentation, (f) memorization, (g) reasoning and reflecting, (h) evaluation, and (i) the person: changed and more experienced.

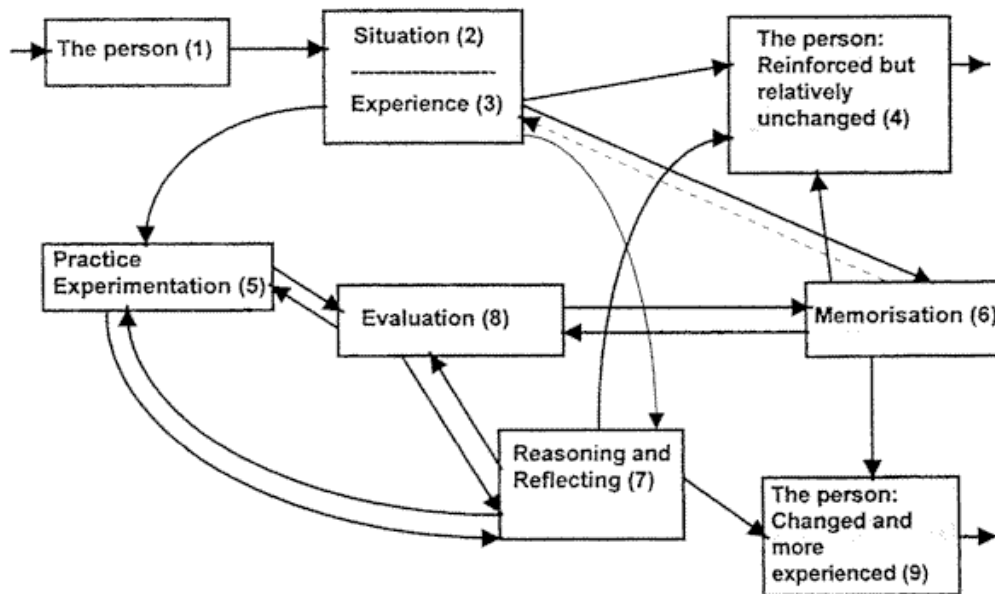


Figure 1. Jarvis Experiential Learning Model.

### Empirical Foundations

The following section provides an overview of the empirical research that contributed to the conceptual framework and the design of this study. The empirical foundations focus on (a) hospitality education, (b) event management (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory. Figure 2 provides a Venn diagram of the empirical foundations reviewed for the study.

For this study, Jarvis' experiential learning model was used in creating the conceptual framework so as to relate key variables for the acquisition and application of hospitality event management knowledge and role-play simulations. Figure 2 shows the conceptual framework for the acquisition and application of knowledge.

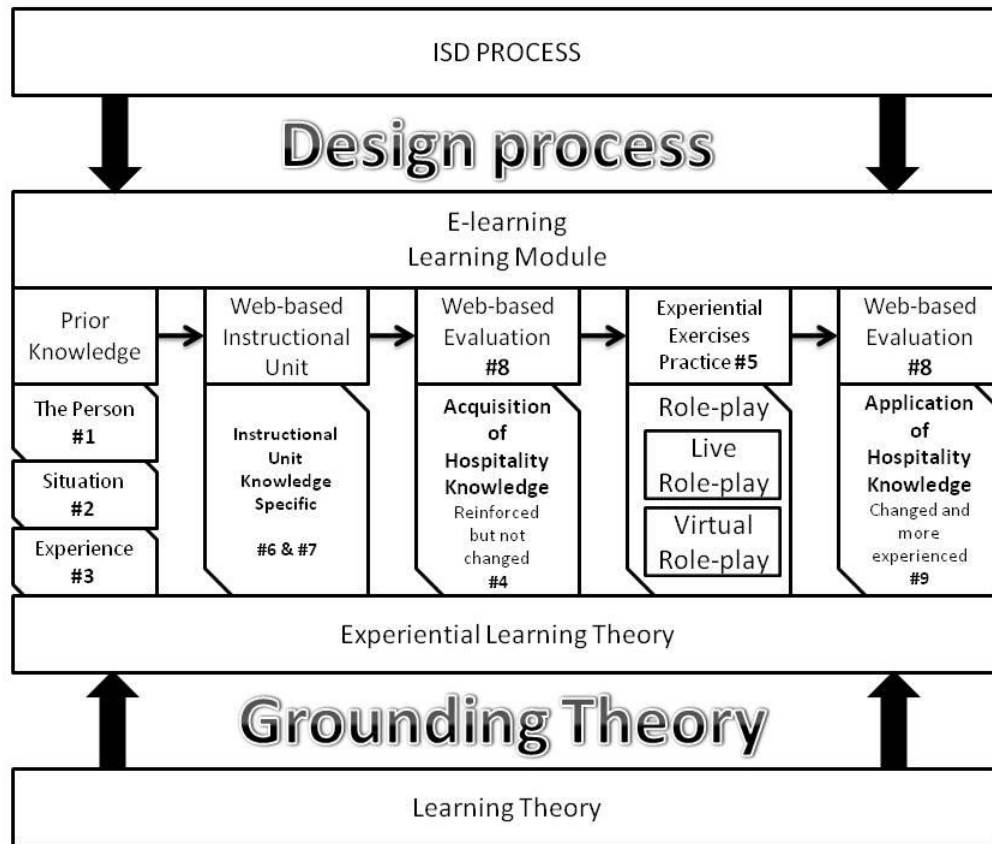


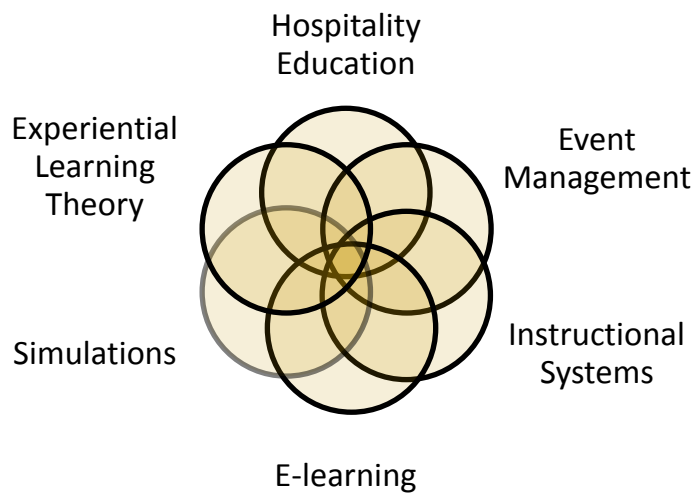
Figure 2. Conceptual framework.

The conceptual framework depicts the relationship between four key areas of the study, including (a) instructional systems, (b) e-learning, (c) simulations, and (d) experiential learning theory. The conceptual framework also depicts all the elements of Jarvis' experiential learning model. The conceptual framework begins with the instructional design process. Prior knowledge is represented in Figure 3 by #1 the person, #2 the situation, and #3 the experience, all of which relate back to Jarvis' model. The e-learning continues to include the instructional unit including #6 memorization, #7

reasoning and reflecting, and #8 evaluation. This portion of the study was used to measure any variance in the subject's prior knowledge. The e-learning utilized an instructional unit in hospitality event management and illustrates the two types of simulation that were used in this study. The two types of simulations were Live Role-play (LRP) and Virtual Role-play (VRP). The final component of the conceptual framework was evaluation. The first evaluation tested for the acquisition of fundamental hospitality knowledge and the second evaluation tested for the application of knowledge. The net result is a model that illustrates the ISD process and the key variables of the study. It better illustrates how the conceptual framework supports both the acquisition and application of fundamental hospitality knowledge. The base of Figure 2 is used to show how the conceptual framework is supported by learning theory and grounded in experiential learning theory.

The review of empirical studies examined (a) hospitality education, (b) event management, (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory. The empirical foundations of the study are illustrated in Figure 3. Hospitality Education is a broad topic covering many niches, functional areas, and disciplines. In the hospitality education section, the histories of general hospitality education were examined. Another functional area in hospitality education is event management. In the event management section of this review, the histories of the evolution of event management were explored. When developing hospitality education it is critical to understand the principles that help guide the development and

implementation of instruction using instructional systems. In the instructional systems section, the histories of types of instructional systems that have been used in developing hospitality students' fundamental competencies were examined. The histories of types of e-learning systems used to develop hospitality students' fundamental competencies were also detailed. Simulation exercises that have been used for developing hospitality students' fundamental competencies were also explored. Various types of simulations have been utilized when developing fundamental hospitality students' knowledge. The simulation section addressed the sub-categories of both role-play and Multi-user Virtual Environments (MUVES). The reason many simulations are used is because they provide an experiential learning exercise that helps to enhance the application of hospitality students' knowledge.



*Figure 3.* Empirical foundations of the study, illustrated.

To examine the extent to which experiential learning had been used in Web-based systems and instructional strategies to develop hospitality students' knowledge, the experiential learning theory section was focused on how learning theory has been applied in developing hospitality students' fundamental knowledge.

### Hospitality Education

The field of hospitality management has been taught at higher education institutions since the 1940s (Walker, 2008). The field has gone through a variety of changes from apprenticeship to a transition into programs that have become more theoretical in nature. The industry has matured, and there is now a need to blend both the theoretical nature of hospitality education with the practical experiences of apprenticeships (Barrows & Bosselman, 1999). The main ways that institutions have tried to blend the theoretical with experiential is through experiential exercises that represent the real world (Barrows & Bosselman). The five major instructional methods that have been utilized in the industry include: (a) lecture, (b) problem-based learning (PBL), (c) case study (d) experiential exercise, and (e) guest speakers, must be integrated as interactions into the Web-based instruction (Phelan et al., 2009).

### History of Hospitality Education

Hospitality education has been in existence for hundreds of years going back to the very first small inns and taverns (Walker, 2008). When it came to showing someone



the task of working in a tavern or inn it was the owner that had to illustrate and model how to perform the individual tasks. Overall, the industry started to grow; and there was a greater need to have a formalized process to training people who possessed basic knowledge about the industry (Walker, 2008). The industry needed a way to have the knowledge developed experientially for enhanced application and performance (Barrows & Bosselman, 1999). The need for training and the desire for development created early apprenticeship programs.

Early apprenticeship programs often were several years in duration and required numerous hours in both the front and back of the “house” to develop the full set of their knowledge (Fletcher, 1991). This suited the hospitality industry perfectly at the time, as the need was primarily for people having specific skills training (Fletcher, 1991). The hospitality industry and need for apprentice skill development continued to grow until the industry recognized the need for a more formal process to staff their facilities and provide specific skills training for staff (Fletcher, 1991). The need for a more formalized process training gave birth to the present-day hospitality management programs (Walker, 2008). Hospitality educational programs were created that focused on preparing students to be managers and leaders in the hospitality industry, and the industry started to move away from the apprentice model (Fletcher, 1991). The first four-year program, the Hotel School at Cornell University, was created in 1922. The first two-year program, the City College of San Francisco, was created in 1935 (Barrows & Bosselman, 1999). The

growth continued over the next 40 years until the industry had a greater need for managers who possessed a more complex set of applied knowledge.

Some of the skills that have been taught across hospitality education programs are (a) coaching, (b) mentoring, (c) problem solving, (d) conflict resolution, (e) time management, and (f) technology skills (Walker, 2008). These core competencies have then been applied into functional areas such as (a) leadership and strategic management, (b) human resources, (c) sales and marketing, (d) accounting and finance, and (e) organizational development. Walker (2008) discusses how these fundamental competencies have also been applied across hospitality fragmented niches, including (a) food and beverage, (b) lodging, (c) conventions, (d) theme parks, (e) airlines, (f) cruise lines, (g) casinos, (h) club and golf management, and (i) events.

Event management, which represents just one of the fragmented niches in the Meetings, Incentives, Conventions and Exhibitions (MICE) portion of the hospitality industry, was explored. This study illustrated the importance of implementing the ISD process so that curriculum and training by domain structure can be explored while applying learning theories and models that help to support the individual knowledge of the particular fragmented niche.

By utilizing the ADDIE model, researchers can continuously (a) analyze, (d) design, (e) develop, (f) implement and (g) evaluate instruction as to its alignment with the needs of the learner and the organization (Dick et al., 2005). The new paradigm shift has emerged along with a new framework that includes e-learning (enhanced, mixed-mode,

and totally online), mobile learning, and virtual learning environments (VLEs). The new framework will allow researchers to create education and training models that contain reusable learning objects (RLOs) and reach more traditional and non-traditional learners (Barritt & Alderman, 2004). The RLO's also make the development of Web-based learning more cost-effective by allowing the content to be used multiple times in various courses to large amount of learners. By migrating into the new framework, the industry will continue to grow in size, research, and reputation. Developing and migrating into the new framework will permit the development of content and instruction that provides just-in-time education and training for both hospitality programs and organizations across multiple platforms, domains, and fragmented niches. One of the newest niches of the hospitality industry that is presently being developed by hospitality programs, organizations and associations is event management.

Hospitality education curriculum in event management has been growing continuously, particularly since the beginning of the 21st century (Nelson & Silvers, 2009). This is especially true for hospitality and tourism programs. The Rosen College of Hospitality Management at the University of Central Florida introduced a Bachelor of Science in Event Management in 2007 (Nelson & Silvers). The University of Nevada at Las Vegas' Williams Harrah College of Hotel Administration introduced a Bachelors of Science in Hotel Administration with a major in Event Management in 2004 (Nelson & Silvers).

Though prior to 2004, there were some programs that provided minors, tracks, or certificate programs for event management, it was found that only 15 higher education institutions in the United States and the United Kingdom were offering courses related to event management (Nelson et al., 2004). By 2004 that number had increased to over 200 (Nelson et al.). It was also during this time that post graduate work was starting to be offered in event management. Event management, like hospitality management, had an increase in growth coupled with the fragmentation of the event management industry (Nelson et al.). This created a new set of challenges when designing training and developing curriculum. These challenges have required employees, managers, leaders, and researchers to develop specific training to work effectively in functional areas of a highly fragmented niche industry (Silvers, 2004). Compiling information on event management has been critical in determining the scope of the industry and the ability to map knowledge into domains to provide a framework for event management. In order to address compiling information on event management, Silvers, created The Silvers Taxonomy to classify the knowledge domains.

### The Silvers Taxonomy

Silvers (2004) created the Silvers taxonomy. The taxonomy was comprised of five major knowledge domains that included (a) administration, (b) operations, (c) marketing, (d) management, and (e) risk management. Appendix A contains the taxonomies for the

five domains. Each of the knowledge domains are categorized by functional areas linked to specific knowledge domains.

Once the knowledge domains were clearly defined, they were applied to the five phases of executing an event (Figure 4). As with any project, the management of an event passes through a series of phases. Decisions underline all aspects of event management. The event is the deadline for most of the management. However the event management does not end with the event. There remains the shutdown or closure phase. After much discussion, the names for the phases were (a) initiation, (b) planning, (c) implementation, (d) event, and (e) closure (Silvers, 2004). The five phases associated with executing an event are presented in Figure 4.

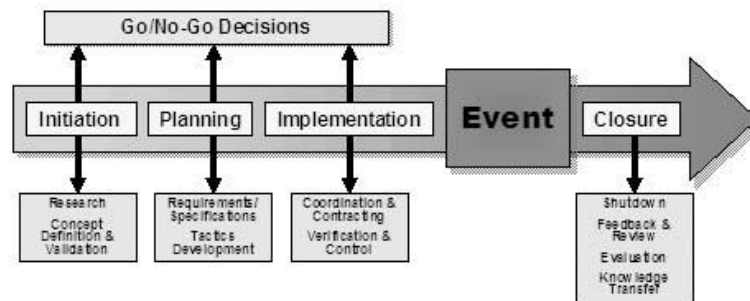


Figure 4. The five phases of executing an event.

Note: From Towards an International Event Management Body of Knowledge (EMBOK). *Event Management*, by Silvers et al., 2006, Cognizant Communications. Vol. 9 (4), 185-198. Copyright 2009 by Julia Rutherford Silvers, CSEP. Reprinted with permission.

Silvers, Bowdin, O’Toole, & Nelson (2006) explained that during each phase the event team undertakes different tasks. The combination of knowledge and processes is different dependent on the phase of the event. During the initiation, for example, the

event manager is studying the feasibility of the event (Silvers et al., 2006). Once the event is found to be feasible, the planning phase is entered. The event and the closure phases may be regarded as part of the implementation (Silvers et al.). For the purpose of this study the five phases of executing an event were grouped together into three categories to include pre-event, during event, and post-event.

In designing the Event Management Body of Knowledge (EMBOK) model, there were core values of the EMBOK framework that permeated all aspects of the event management process. The five main core values represented in Figure 5 illustrate the EMBOK framework core values of (a) creativity, (b) strategic thinking, (c) continuous improvement, (e) ethics, and (f) integration (see Figure 5).



*Figure 5.* The five core values that permeate the event management process.

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Silvers et al. (2006) described a process as a series of step by step tasks or activities that are repeated in the management of an event. These actions can be regarded as the components in the overall process to deliver the event. Each action contributes

towards the completion of a main task and the processes include (a) management, (b) analysis, (c) communications, (d) decision optimization, (e) scheduling, and (f) risk analysis (Silvers et al.). When integrating all knowledge domains across the event management process and embedding the core values across the entire process Silvers et al. designed the International EMBOK Model. Figure 6 represents the integration of the knowledge domains, the core values and the business management processes that were used to create the International EMBOK Model.

The development of the International EMBOK model and its use in this study was of critical importance because it linked elements of instructional systems, knowledge domains, core values, and business processes while applying them to the phases of events (Silvers et al., 2006). The researcher found no literature in event management that incorporated instructional systems using experiential Web-based role-play simulations. This study was conducted to examine and test the design of an experiential Web-based model to deliver the acquisition and application of knowledge to hospitality event management students' using role-play simulation. In this study, technology skills, as illustrated in the administration domain of the Silvers Taxonomy, were applied across the three categories of pre-event, during event, and post-event representing the phases of implementing an event.

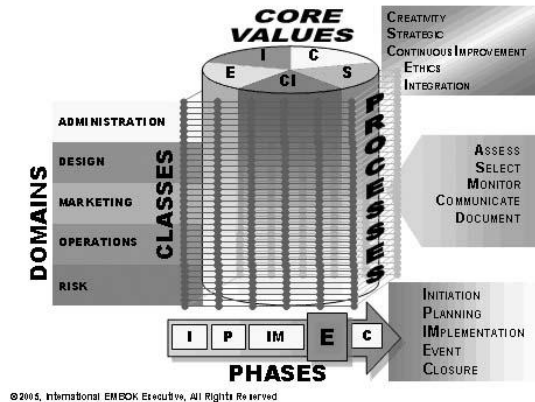


Figure 6. The EMBOK model.

Note: From Towards an International Event Management Body of Knowledge (EMBOK). *Event Management*, by Silvers et al., 2006, Cognizant Communications. Vol. 9 (4), 185-198. Copyright 2009 by Julia Rutherford Silvers, CSEP. Reprinted with permission.

Role-play was an appropriate instructional strategy to use for event management skills development. Errington (1997) outlines a range of reasons for adopting role-play in hospitality education related to learning outcomes the main reason being that role-play is the demonstration of acquired knowledge from a course of study. Role-play is also effective because it helps to bridge the gap between academic knowledge and professional development (Maddrell, 1994). Armstrong (2003) reported that role-play had a great potential in tourism and hospitality teaching and was a reasonable tool that could be used frequently.

### Instructional Systems Design

Instructional systems design is the practice of helping learners and teachers transfer knowledge most effectively through the use of learning theories and models. Collectively, these design models and the processes they represent have been defined as



Instructional Systems Development (Dick et al., 2005). The design is driven by learning theories and models and could take place in a student only, teacher led or community based environments. The instructional design process gained its foundation during World War II when the United States needed to train large numbers of people in a short period of time (Dick et al.). One of the first initial designs was Bloom's Taxonomy of Educational Objectives (Bloom, 1956). Instructional design theory was advanced in Sweller's (1988) Cognitive Load Theory when he based his theory on historical foundations in cognitive psychology and instructional design. One of the main models in instructional systems design is the ADDIE model (Dick et al.). The ADDIE model stands for (a) analyze, (b) design, (c) develop, (d) implement, and (e) evaluate. Designers analyze learner characteristics and tasks to be learned. During the design stage, designers develop learning objectives and choose instructional approaches. During the develop stage, designers create instructional and/or training materials. During the implement stage, designers deliver or distribute the instructional materials; and during the evaluate stage designers make sure the materials achieve the desired learner outcomes (Dick et al.).

### Instructional Systems Design for Hospitality Education

In this section, a few of the major principals, concepts and design considerations related to instructional systems in general are reviewed in order to describe the nature of the instructional systems and related approaches to instructional systems design and

development in Hospitality. A major study that was identified was that of Feinstein, Rabb and Stefanelli (2005) who performed a review of the literature on instructional systems research in the hospitality Industry. For the present literature review, the search was refined to eliminate studies completed prior to 1990 and many of those that were not reported in peer-reviewed journals.

One of the first studies in hospitality instructional systems relevant to this study was that of Smith, Umbreit, Umbreit, & Umbrei (1990) that used drama to enhance and measure service quality. This study was directly related to the role-play of this study and found that the use of drama was an effective instructional technique that enhanced the learning outcomes. This study focused on qualitative and descriptive statistics.

The next study on instructional systems was in conducted by Gilmore (1992). He studied the effectiveness of class discussion using the case method of instruction, applying the Evaluation Management Decision (EMD) scale, and concluded that the case method increased the scores of the EMD. He failed to prove that the case study method was effective in increasing problem solving, decision making, or critical thinking. The study utilized T-tests with a small sample size.

Another study was conducted by Breiter (1993) who performed an exploratory study to determine cross cultural training practices and found most students believed that experiential learning assignments assisted them in understanding. The study utilized descriptive statistics. Iverson (1994) offered a schema for measuring the learning outcomes of students' live group projects from their own perspectives using descriptive

statistics. He found that students became aware of both the customers' needs and the educational purpose of group projects. Hsu and Hsu (1999) focused on the assessment of hospitality programs, the attraction of students with certain learning styles and whether the chosen major changed the students' learning styles. It was determined that the hospitality program attracted more "convergers" than any other learning style. The study utilized descriptive statistics, paired t-tests and analysis of variance (ANOVA), and results were not generalizable beyond the study's population (Hsu).

### E-learning

The use of the term e-learning has grown rapidly and has frequently been used interchangeably with terms such as: online education, virtual learning, distributed learning, networked learning, Web-based learning, and also open and distance learning. Despite their unique attributes, each of these terms fundamentally refers to educational processes that utilize information and communications technology to mediate asynchronous as well as synchronous learning and teaching activities (Naidu, 2002).

The benefits of e-learning are numerous in comparison to face-to-face learning. Nelson (2003) analyzed twelve major benefits to e-learning: (a) cost saving and focused streamlined content which increases the speed of delivery; (b) efficiencies in data recording and tracking; (c) efficiencies in delivery of educational material; (d) higher rates of course completion; (e) ability to meet the needs of individual learners; (f) increased ability for management resources; (g) a decrease in time to complete system

wide educational initiatives; (h) the creation of automatic and accurate tracking system of all educational activities; (i) an increase in the accuracy and timely reporting of all state regulations; (j) increased participation and access of students and staff to educational offerings; (k) the promotion of educational and organizational strategies that can create synergy among educators, knowledge managers, performance improvements and management practices; and (l) proactive assessment of learning needs.

Some of the limitations described by Nelson (2003) included cheating and the verification of the student's identity. There are also safety and security issues to deal with when using Web-based learning systems. Another limitation is the use of technology when the systems are down and the technology is not available (Nelson). It is important for facilities to provide computer labs for student so that there is no issue with students who do not possess the technology necessary to access the course and content (Nelson). It is also important to give training to educators on the use of the technology and to provide extra time for training, the development of course content, and transition from face-to-face to a Web-based environment. If these limitations are not addressed, educators and learners alike will be frustrated and lose confidence in Web-based learning as an effective learning tool (Nelson).

E-learning can provide a different collaborative learning environment compared to a face-to-face learning environment (Ellis, 2001). There are differences in communications including synchronous versus asynchronous, written communications, participation and group community and collaborative learning development (Ellis). There

also needs to be a paradigm shift from traditional face-to-face to an e-learning setting. In a conventional classroom setting, the role of the educator is to instruct. In an e-learning setting, the educator must be both an instructor and an instructional designer. (Lee & Hirumi, 2004).

In contrast, during e-learning most of the interactions such as elaborations, clarification, discussions and feedback occur asynchronously by reading and writing (Hirumi, 2005). Part of the challenge in e-learning is related to poorly developed materials. Facilitators may be required to spend inordinate amounts of time clarifying expectations for the learners, solving and correcting errors, and compensating for gaps created by poor design. (Hirumi)

Structural differences of e-learning technology dramatically alter interpersonal relationships that develop as well as the nature of the intellectual discussions that occur online. Berge (1995a, 1995b) addressed differences in terms of the instructor and student relationship changes as a result of an increase in self directedness on the part of the student.

When transforming materials from face-to-face to e-learning, one should consider how online communications and interactions will occur (Yu & Brandenburg, 2006). Determine how the students' learning and performance will change when in the e-learning environment and how they will collaborate online. It is critical to also look at hardware and software issues based on the e-learning systems or content management system being used and the type of administrative support available (Yu & Brandenburg).

As instructional designers it is important to remember some of the essentials when moving from face-to-face content to e-learning content (Hirumi, 2005). Hirumi discussed five primary points in designing course materials (a) the alignment of objectives and assessments, (b) the alignment of the objectives to the instructional events, (c) the nature of feedback and how it is vital to e-learning, (d) the designing and sequencing of e-learning interactions and (e) the creation of a motivational design.

### E-learning for Hospitality Education

This section of the literature review has been used to describe the nature of e-learning and related approaches to e-learning design and development in hospitality. One of the first studies to evaluate the use of e-learning was conducted by Iverson (1996). The study examined students' interest in distance education using descriptive analysis and analysis of variance (ANOVA). The results showed that students were only moderately interested in distance education compared to traditional delivery methods. Harris (1996) also looked into the applications of using the Internet for student learning. The study examined the use of the Net and a project named "interweave" to connect students in a virtual learning environment. At the time of the report, the project was still underway and data was still being collected (Harris). The study utilized Multivariate analysis of variance (MANOVA) and multiple regression analysis. Four years later the next e-learning study was conducted by Hubbard and Popovich (2002) who looked at hospitality master's degree programs delivered via distance education. The findings of the study

showed that distance education was starting to be the preferred method for working professionals seeking an advanced degree. This started a huge growth in Learning Management Systems (LMSs) which helped Getty and Getty (2003) evaluate hospitality students' experiences with WebCT and the impact on their performance in class. The study utilized path analysis. In the same year there was a need to determine, from an administrative perspective, how to incorporate the Internet into the classroom (Getty & Getty). Sigala and Christou (2002) looked at factors that influenced hospitality educators' decisions to incorporate Internet tools in their classroom. They showed that hospitality educators included Internet resources into their courses when three main elements were present: (a) There must be clear learning advantages for the students, (b) there must be IT resources available, and (c) there must be Internet tools that are easy to use (Sigala & Christou). The study utilized aspects of the TAM model and utilized descriptive analysis and Chi Square.

In this section of the literature review, gaps in the literature illustrated the need for the present research in examining Web-based learning systems that utilized experiential exercises for the application of knowledge in event management and the need to clearly applying ISD principles when developing Web-based content and interactions. When exploring experiential exercises the literature supported the use of simulations.

## Simulations

In this section of the literature review, major principals, concepts and design considerations related to training simulations in general have been reported in an effort to describe the nature of the simulations and related approaches to simulation design and development. In looking at the major principles of simulation and design consideration one must first look at the different types of simulation. Simulations generally fall into two categories (a) iconic simulations use a simulation model as an analytical tool, and (b) symbolic simulations in which an instructional system or learning environment is created (Feinstein & Parks, 2002). Symbolic simulations are further divided into three specific types: discrete, continuous, and combined event. By differentiating these two types of simulations, rubrics and constructs can be created to assess the effectiveness of using simulations (Feinstein & Parks).

Lierman (1994) categorized simulations as (a) simulations that help participants learn the psychomotor and perceptual aspects of a task as it is performed in real world situations, (b) cognitive-task simulations where trainees learn concepts and abstractions that underlie the rules and principles governing their work environment, (c) simulations for tasks involving communications and coordination, (d) simulations still in their infancy as training tools using virtual-reality technology.

Hawley and Duffy (1998) identified six primary design criteria for the development of simulations. They are: (a) The problem needs to be authentic; (b) the cognitive demand in learning is authentic; (c) scaffolding supports a focused effort



relevant to the learning goal; (d) coaching promotes learning rather than directing or correcting performance; (e) the use of reflection supports abstracting, synthesizing, and extending the learning; and (f) the environment needs to be engaging (Hawley & Duffy).

### Simulations for Hospitality Education

Ferreira (1992) looked at the benefits of case study and simulation effectiveness in marketing education. Miller's (1989) investigation was focused on the use of simulations to develop students' understanding of how hotels are managed in a competitive environment and was conducted using computer simulations (Miller & Petrillose, 1992). Mann (1993) looked at using simulators as virtual educational tools in foodservice operations and analyzed the hypothetical and futuristic perception of simulations uses in the hospitality industry. As simulations continued, there was a need to bridge the gap between the theory and practice. Burbidge and Schachter (1994) proposed a model to help bridge this gap using non-computer human simulation. Ferreira (1997) studied students and their ability to increase performance to be able to forecast market conditions using simulation. The purpose of the study was to look at students' test performance and their decision making abilities (Ferreira, 1997).

The first discussion regarding the use of simulation to teach food service operations was conducted using both the SIMAN and ARENA simulators by Feinstein and Mann (1999). Thompson and Verma (2003) addressed the use of simulation in hospitality teaching using two computer-based models. The final study that was reviewed

concerned the use of games in simulations. Zapalska, Brozik and Niewiadomska-Bugaj (2006) studied the decision making process through a game-based simulation for hospitality education.

The research methodology information regarding simulations was very limited. Most of the simulation software generates reports based on the interaction during the simulation. The methods listed for most of the studies were simply references to the simulations. Simulations that were used were (a) Monte Carlo, (b) AREAN, (c) SLAMSYSTEM, (d) SIMAN. The last study reviewed did use a self administered questionnaire. Baker & Collier (1999) used a Tukey multiple comparison approach and Thompson (1999) used the Poisson distribution. Feinstein and Mann (1999) used SIMAN and ARENA. Ferreira (1992) employed case study methodology. Thompson & Verna (2003) used TableMix and Service Model. All of the remaining studies in hospitality education that were reviewed used basic reports generated from the simulation software. Very little statistical analysis was used which supports the contention of Chou and Liu (1999) who reported on the need for and importance of simulation validation and reporting to increase validity of the studies using the software.

Overall, simulations in the hospitality industry have largely been computer-based and focused on forecasting and financial models which integrated information technology, service and quality (Durocher & Niman, 1993). Most of the early simulation designs and development initiatives used computer based simulators such as Monte Carlo Simulation, ARENA, SLAMSYSTEM, and SIMAN--a limited selection of many

computer-based simulation and modeling programs. Most of the data were gathered from the simulation software. The simulation designs in education used SIMAN and ARENA and a few computer-based simulation games. Feinstein and Mann (1999) used both the SIMAN and ARENA simulators. Most of the simulations in hospitality education have been designed to teach operational skills and decision making skills as opposed to leadership development skills, and most were developed for hotels and food and beverage operations. Limited articles have been published on simulation design using virtual environments and role-play. Only three articles located in the hospitality and tourism complete database made any reference to Second Life or multi-user virtual environments (MUVEs) and their use in hospitality education.

MUVEs have been used among educators across the world. There are more than 500 educational institutions experimenting with, or offering classes inside the MUVE, Second Life. Virtual worlds present many challenges for students, educator, and administrators. At the time of the present study, Second Life was being used by the School of Hotel and Tourism Management at Hong Kong Polytechnic University (Penfold, 2008). In 2007, the School of Hotel and Tourism Management created a virtual campus in Second Life with the following objectives to (a) provide a cost-effective platform to explore teaching and learning in a virtual world, (b) provide a flexible environment for the freshman student orientation program, (c) provide a virtual campus for other departments to test the use of virtual worlds, (d) encourage innovation and research in educational technology, and (e) support the University's outcome-based

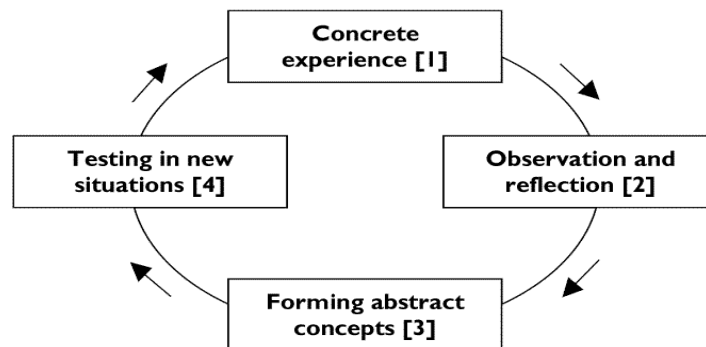
education by offering “real-world” scenarios for teaching and learning in hospitality and tourism subjects (Penfold). MUVES have gained in acceptance as instructional tools for courses looking to enhance student involvement and the ability of higher order thinking in students (Altinay & Paraskevas, 2007). Hospitality students' perceptions on using Second Life at Hong Kong Polytechnic University have been favorable. Singh & Myong Jae (2008) studied students at Hong Kong Polytechnic University perceptions of using the MUVES Second Life as an instructional system simulation. They utilized regression analysis to examine students' attitudes toward Second Life and their intention to use Second Life and found that the students' reaction to the use of MUVES was favorable.

In measuring the reliability and validity of role-play scenarios, or interactive drama there are four main design factors that are suggested (a) design each scene based on a learning objective, (b) use trained actors, (c) design the scenes in a way to minimize the acting needed from the students, and (d) facilitate a discussion that is closely related to the scenes of the role-play and will bring out the topics that have been embedded into each scene (Boggs, Mickel, & Holtrom, 2007). Despite the fact that role-play scenarios and treatments have been utilized in dozens of studies over the past 30 years, some fundamental questions about the psychometric properties of the instruments and how to measure role-play effectiveness have not been answered. Bellack, Brown and Thomas-Lohrman (2006) have stated that psychometric properties should address such issues as (a) the number of necessary scenes, (b) the number of behaviors that are measured and coded in each scene, (c) how scores should be combined for analysis, (d) interrater

reliability for the role-play scenes assessment analysis, and (e) which statistical methods for analysis are necessary. According to Bellack et al., the number of scenes administered should be determined by face validity and cost with four to eight scenes being modal. The typical practice has been to combine scores across all scenes and across face valid subscales.

### Experiential Learning Theory

The present study was grounded on experiential learning theory which was identified by Kolb and Fry (1975). Experiential learning theory is comprised of four elements (a) concrete experience (CE), (b) reflective observation (RO), (c) abstract conceptualization (AC), and (d) active experimentation (AE). Concrete experience deals with feeling, reflective observation deals with watching, abstract conceptualization deals with thinking and active experimentation deals with the doing. Figure 7 illustrates Kolb's Experiential Learning Theory.



*Figure 7.* Kolb's experiential Learning Theory.

The theory went on to elaborate four different types of learning styles each representing a combination of two of the elements (a) diverging (CE/RO), (b) assimilating (AC/RO), (c) converging (AC/AE), and (d) accommodating (CE/AE). Diverging deals with both feeling and watching; assimilating deals with both watching and thinking; converging deals with both doing and thinking, and accommodating deals with doing and feeling.

The theoretical foundations of the present study were grounded in Jarvis' experiential learning theory which is a modification of Kolb's experiential learning theory. Jarvis (1995) tried to show that there were a number of responses to the potential learning situation. He used Kolb's experiential model and tested it on various groups of adult students to explore and based his model on their own experience of learning. The variables in Jarvis' model are (a) the person, (b) situation, (c) experience, (d) the person: reinforced but relatively unchanged, (e) practice experimentation, (f) memorization, (g) reasoning and reflecting, (h) evaluation, and (i) the person: changed and more experienced (Jarvis).

### Experiential Learning in Hospitality Education

Hsu, Finley, Smith, Hsu, & Finley, (1991) used Kolb's Learning Style Inventory to study district restaurant managers. The main results of the study showed that 78% of unit managers and 76% of district managers displayed convergent learning styles; however, there was no statistical significant difference (Hsu et al.). The study utilized T-

tests, Pearson correlations and cross-tab analysis. Another study that relied on experiential learning theory was that of McCleary and Weaver (1990) who discussed students' level of achievement with experiential learning objectives. McCleary and Weaver found that experiential learning objectives improved learning and leadership skills but the results were not generalizable. Another experiential learning study was conducted by Breiter, Cargill, and Fried-Kline (1995) who evaluated the merits of experiential learning theory from the hospitality industry point of view. Using descriptive statistics, they reported that executives rated skills such as relationship management, guest registration and reservations, and conflict resolution as the most important experiential skills (Breiter et al.).

Young, Corsun, Muller and Inman (1998) conducted an assessment of the effectiveness of experiential learning. They analyzed the role of behavior modeling in experiential learning and found that students who took an experiential restaurant management course believed that it prepared them for restaurant management and that experiential learning was an effective tool because it combined learned materials with situational application (Yung et al.). The study utilized descriptive statistics, Pearson correlations, t-tests, and multivariate analysis of variance (MANOVA).

### Summary

In this chapter, the literature and research related to the present study has been reviewed. It was organized to address the conceptual framework and its theoretical

foundation grounded in the Jarvis experiential learning model (1995). The Jarvis model was used to link certain key variables together to illustrate the acquisition and application of fundamental hospitality knowledge. Literature and related research were also reviewed in the following four empirical research areas (a) instructional systems, (b) e-learning, (c) simulations, and (d) experiential learning theory. The conceptual framework was also supported by empirical foundations which contributed to the design of the study. The empirical foundations reviewed were: (a) hospitality education, (b) event management, (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory. For each of the categories, a broad overview of the literature was presented followed by a more specific focus on hospitality education and a brief summary of research methods employed in the studies reviewed. In regard to empirical foundations, there was no study that has linked (a) hospitality education, (b) event management, (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory.

Chapter 3 presents the methods and procedures used to conduct the study. The design of the study, instrumentation and research methods are also discussed.



## CHAPTER 3 METHODS

### Introduction

The research design and procedures used in the study are presented in this chapter. The chapter has been organized to address: (a) research questions, hypotheses, and research procedures; (b) design of the study; (c) study population; (d) sample selection; (e) study procedures; (f) instrumentation; (g) ethical considerations; and (h) limitations of the study.

### Research Questions, Hypothesis, and Procedures

#### Research Question 1

Does it make a difference if role-play simulations are delivered virtually versus live for hospitality event management students' application of knowledge?

$H_0$  There is no statistically significant difference between hospitality event management students' application of knowledge when comparing virtual versus live role-play simulations.

To answer Research Question 1,  $H_0$  was tested using an Analysis of Covariance (ANCOVA) to test for significant differences, if any, between the comparison group and treatment group when looking at the two groups' scores for the variable total application of knowledge while utilizing the variable total acquisition of knowledge as the covariate. The covariate total acquisition of knowledge was coded into SPSS 17 as TotalAcqScore

and was utilized to measure the prior knowledge of subjects and remove possible variations in the subjects' prior knowledge between groups. TotalAcqScore was coded to represent the variable total acquisition score of knowledge that was obtained from the knowledge acquisition assessment. The independent variable (IV) Treatment was coded into SPSS 17 as (1, 2) to represent the two treatment groups, where 1 represented the live role-play and 2 represented the virtual role-play. The dependent variable (DV) total acquisition score was used to represent the mean score of the total application score.

#### Research Question 2

Is there a difference in the cost effectiveness of Web-based instructional content when examining the developmental costs, delivery costs, and the reusability of the Web-based instruction?

To examine Research Question 2, a comparative financial analysis was conducted and empirical research was examined to determine the developmental costs, delivery costs, and the reusability of the Web-based instruction.

#### Design of the Study

The study utilized a randomly clustered sample post-test design using two groups. The total application scores for the two groups, comparison (LRP) and a treatment (VRP) were studied to determine if there was a significant difference between groups. Table 1 illustrates the research design.

Table 1  
*Research Design*

Group	Random Assignment	Total Acquisition Score	Intervention	Total Application Score
Comparison	R	O <sub>1</sub>	X <sub>1</sub>	O <sub>2</sub>
Treatment	R	O <sub>1</sub>	X <sub>2</sub>	O <sub>2</sub>

The comparison group (R O<sub>1</sub> X<sub>1</sub> O<sub>1</sub>) received a scripted, discrete role-play live. The treatment group (R O<sub>2</sub> X<sub>2</sub> O<sub>2</sub>) received the same scripted, discrete role-play in a multi-user virtual environment (MUVE). The symbol R represents the random assignment between groups. The variable O<sub>1</sub> represents the outcomes of group 1 and group 2 for the total acquisition score of knowledge. The variable X<sub>1</sub> illustrates the live role-play simulation, while the variable X<sub>2</sub> illustrates the virtual role-play simulations. The variable O<sub>2</sub> represents the outcomes of group 1 and group 2, for the total acquisition score of knowledge,. The raw scores for the application of knowledge were used to test for significant differences between groups. The completed dataset was imported and analyzed using The Statistical Package for the Social Sciences (SPSS, v.17) for Windows.

#### Study Population

The target population for the present research were students in undergraduate hospitality programs in the United States. The accessible population was comprised of

the undergraduate students in hospitality event management from a large university in the Southeast of the United States.

### Sample Selection

The sample consisted of 153 undergraduate students randomly assigned to two groups with 80 students in the comparison group and 73 students in the treatment group.

The comparison group received a live role-play (LRP), while the treatment group received a virtual role-play (VRP) simulation. Since the role-plays were presented during class time for all three classes, there was a need to have a total of six role-play sessions (two role-play sessions for each class). The role-play sessions were conducted by student actors from the university. The same actors conducted both the live role-play and the virtual role-play scenarios to minimize the variation in role-play.

### Research Procedures

All instructional material and assessments were delivered using Blackboard, a Learning Management System. The live role-play was delivered face-to-face, and the virtual role-play was delivered using Second Life, a multi-user virtual environment. In all three classes, the students were randomly assigned between comparison and treatment groups. The students were randomly assigned using the website [www.random.org](http://www.random.org). The minimum number in the model was a one and the maximum number in the model was a 2. Each class roster was printed and [random.org](http://www.random.org) assigned a random value of one or two

for every individual on the roster. Every student who received a one was assigned to the comparison group and every student who received a two was assigned to the treatment group. The actors started the live role-play simulation in a computer lab and then moved to a remote location in an executive meeting room where they logged in on one laptop as an avatar, a virtual character in Second Life, and conducted the virtual role-play for the second group in a different computer lab. The actors were logged in as one of the virtual actors in the role-play, and the avatar was controlled by a research assistant. This controlled the variance in role-play by removing any required technology skills of the actors and allowed them to solely focus on the discrete scripted role-play. The lecturer in the different computer lab was logged into Second Life, and the researcher was logged in as another avatar that represented one of the three actors involved in the role-play. Virtualis is owned by Dan Parks, President of Corporate Planners Unlimited, Inc. Virtualis is a convention and learning center created, designed, and managed by event professionals. Virtualis was used, and one of the boardrooms was specifically designed and branded for the role-play. Table 2 illustrates the design intervention of the study. The table illustrates equal amounts of time. The only variable that was changed between the comparison and treatment groups was role-play.

Table 2  
*Design Intervention for Role Play Comparison*

Minutes	Comparison Group (Live Role-Play)	Treatment Group (Virtual Role-Play)
5	Pre-survey of demographics	Pre-survey of demographics
15	Web-based instructional unit	Web-based instructional unit
5	Reasoning and reflecting	Reasoning and reflecting
10	Knowledge Acquisition Instrument	Knowledge Acquisition Instrument
10	Live role play	Virtual Role-Play
5	Reasoning and reflecting	Reasoning and Reflecting
10	Knowledge Application Instrument	Knowledge Application Instrument
60	Total minutes	Total minutes

In each of the three classes, the two different types of role-play were implemented with the comparison group receiving the live role-play and the treatment group receiving the virtual role-play. All elements of the research study occurred during class time. The role-play sessions consisted of a total of three virtual and three live role-plays. The three classes combined comprised the total stratified sample. All subjects took a five minute pre-survey (Appendix B) and were requested to provide demographic information. They immediately received a fifteen minute e-learning instructional unit on the use of technology for event managers. The students were permitted to take notes during the e-learning instructional unit. The students' were given five minutes to reflect on the instructional unit before taking a ten minute hospitality e-learning assessment for the acquisition of knowledge (Appendix C). All instructional content and e-learning assessments were delivered through Blackboard Learning Management System.

In the next phase of the intervention, two different types of an identical role-play were presented (Appendix D). The comparison group received a live role-play (LRP) while the Treatment group received a virtual role-play (VRP) in a multi-user virtual environment, using Second Life. The role-play consisted of three scenes (a) pre-event, (b) during event, and (c) post-event and illustrated how to apply technology skills to the three different scenes. Students were allowed to take notes during the role-play.

Students were given five minutes to reflect on the role-play they had viewed before concluding the intervention by completing a ten minute hospitality technology role-play assessment to test for the application of knowledge. The role-play assessment consisted of three short essays (Appendix E). The first essay required the learners to list the items that could be utilized pre-event and then required the learners to apply those items to participants, clients, and the organization. The second essay required learners to list items that could be utilized during the event and then required the learners to apply those items to participants, clients, and the organization. The third and last essay required learners to list items that could be utilized during the post-event and then required the learners to apply those items to participants, clients, and the organization.

The same actors were involved in both the live (LRP) and (MUVE) role plays. The comparison and treatment groups received the role plays on the same day, fifteen minutes apart to ensure that no variance occurred in actors performing the role-play while allowing them to move and log into Second Life from the remote location.

Since the sample was drawn from three classes, each seventy five minutes in length, the sixty minutes required for the various activities in the intervention were administered within one scheduled class period. The intervention was conducted three times during the treatment period. The comparison group consisted of 80 subjects and the treatment group consisted of 73 subjects. A detailed overview of the assignment timeline is presented in Appendix F.

### Instrumentation

Three researcher-created instruments were used to gather data for this study to include a Pre-survey Instrument, a Knowledge Acquisition Instrument, and a Knowledge Application Instrument.

All instruments were tested for validity in a pilot study to determine the effectiveness of the instruments and make minor changes before the research study. The only changes, from the pilot study, was to the knowledge acquisition instrument and the role-play scenario. The changes clarified the wording, but maintained the content, in the knowledge acquisition instrument and the scripted role-play. The pilot test instrumentation was tested from the same sample population represented in the research study. No members of the pilot study were included in the research study. Initially, a Pre-survey Instrument was administered to gather demographic information. Next a knowledge acquisition instrument was administered to test for the acquisition of knowledge. This assessment was directly related to the learning objectives and an



instructional unit which was delivered to the subjects as part of the intervention. The knowledge acquisition instrument was utilized to measure the prior knowledge of subjects which was used as a covariate in the analysis to partial out any existing differences in the subjects' prior knowledge between groups.

The third and final instrument was a knowledge application instrument. The instrument was administered to test for the application of knowledge. This was directly related to the instructional unit, the learning objectives and the role-play. The instructional unit, the knowledge acquisition assessment, the role-play script, and the knowledge application assessment were designed using the ADDIE model. The five phases of the ADDIE model consist of (a) analyze, (b) design, (c) develop, (d) implement, and (e) evaluate, which is a systemic approach for designing instruction. The ADDIE model was utilized prior to and during the pilot test to design the instructional units (including role-play), the instruments, and the assessments.

Expert review, item analysis, and Pearson's correlation were also utilized during the pilot study. Expert review was conducted by the dissertation committee members, faculty members at the Rosen College of Hospitality Management, feedback from students who participated in the pilot study, and actors from the research university. The expert review helped to evaluate the instructional unit and role-play, the instruments, and the assessments.

Validity of the knowledge acquisition instrument and the knowledge application instrument are discussed under each individual instrument. The knowledge acquisition

instrument was tested for validity during the pilot study and found a difficulty index of .632 making it a valid instrument. The instrument was only changed in the clarity of the wording of the instrument not in the content of the instrument so it was not necessary to conduct another difficulty index for the actual study.

The knowledge application instrument needed to have a high amount of interrater reliability so it was necessary to conduct validity between raters for both the pilot study and the actual study. During the discussion of the knowledge application instrument the validity of interrater reliability is first discussed in the pilot study and then discussed in the actual study.

#### Pre-survey Instrument

The pre-survey instrument was used to gather demographics of the participants. The pre-survey instrument was hyperlinked from the instructional unit in the Blackboard Learning Management System. The pre-survey took five minutes for students to complete and was used to gain information on age, income, ethnicity, and gender.

#### Knowledge Acquisition Instrument

The hospitality technology knowledge acquisition instrument, which was able to be completed in ten minutes, was aligned directly with the instruction unit and the learning objectives and was utilized to test for the acquisition of hospitality technology skills. The instrument was designed and tested by the researcher and was subjected to a

pilot study and expert review. The instrument was validated by an item difficulty analysis. Face validity was obtained through expert review by the dissertation committee members, faculty members at the university, and feedback was obtained from students who participated in the pilot study. The assessment consisted of twenty multiple choice items that were hyperlinked from the instructional unit in Blackboard to a multiple choice testing instrument also delivered in Blackboard. Table 3 illustrates the item difficulty analysis on the knowledge acquisition instrument using pilot data.

Table 3  
*Pilot Study Item Analysis: Knowledge Acquisition Instrument Analysis*

Item	n	Correct Responses	Difficulty Index (p)
1	149	138	.926
2	149	113	.758
3	149	94	.631
4	149	136	.913
5	149	106	.711
6	149	134	.899
7	148	131	.885
8	149	105	.705
9	149	78	.523
10	147	75	.510
11	149	116	.779
12	149	49	.329
13	149	62	.416
14	148	90	.608
15	148	94	.635
16	149	104	.698
17	149	58	.389
18	149	109	.732
19	149	67	.450
20	148	22	.149
Total	2974	1881	.632

The ideal difficulty level for multiple choice items in terms of the discrimination power was 70% for assessments with five-response multiple-choice questions or a difficulty level of .70 (Lord, 1952). The pilot test for the Knowledge Acquisition Assessment had a six-response multiple-choice format; thus, the ideal difficulty level was slightly lower than .70. The difficulty level of the pilot study was .632. The difficulty level was ideal to obtain sufficient item discrimination power so as to increase the validity of the instrument.

#### Knowledge Application Instrument (Role-play)

The hospitality knowledge application instrument (Appendix G) was able to be administered in ten minutes. It was aligned directly with the instructional unit, role-play and the learning objectives so as to test for the application of knowledge. The assessment consisted of an essay that was hyperlinked from the instructional unit in Blackboard to a short essay assessment using Blackboard. The short essay assessment consisted of a detailed checklist rubric assessment on the application of technology skills for pre-event, during event, and post-event. The role-play assessment consisted of three short essays.

The first essay required the learners to list the items that could be utilized pre-event and then required the learners to apply those items to participants, clients, and the organization. The second essay required learners to list items that could be utilized during the event and then required the learners to apply those items to participants, clients, and the organization. The third and final essay required learners to list items that could be

utilized post-event and then required the learners to apply those items to participants, clients, and the organization. The role-play consisted of three scenes (a) pre-event, (b) during event, and (c) post-event. The role-play illustrated how to apply technology skills to the three different scenes.

The instrument was designed and tested by the researcher. It was also pilot tested and reviewed by a panel of experts. The instrument was validated using Pearson's Correlation for interrater reliability. Expert review was conducted by dissertation committee members, faculty members at the Rosen College of Hospitality Management. Feedback was also obtained from students, and university actors who participated in the study. The knowledge application instrument section is broken down into pilot study instrument validity and actual study instrument validity.

#### Pilot Study Instrument Validity

Pearson's correlations were run using SPSS 17 on the pilot data of the knowledge application assessment to determine the effectiveness of the interrater reliability for all three scenes of the role-play.

Table 4 displays the interrater reliability for the pre-, during and post-event scenes of the pilot study of the knowledge application assessment. The Pearson's correlation for Pre-event (scene 1) was  $p = .89$  which represents an interrater reliability of 89% showing a high amount of agreement between raters. The Pearson's correlation for the During event (scene 2) was  $p = .767$  showing a low amount of agreement between raters. The

Pearson's correlation for the Post-event (scene 3) was  $p = .997$  which represented an extremely high amount of agreement between raters.

The total interrater reliability for the entire pilot study of the knowledge application instrument involved combining results of the three scenes for a total interrater reliability of .89. The interrater reliability of .89 showed an extremely high amount of agreement between raters for the knowledge application assessment. It was determined that more clarification was needed on instructions using the specific terminology regarding the individual, client and the organization prior to the administration of the application essay assessments. This allowed both inter-raters to be more accurate when determining the level of application applied for the individual, the client, and the organization across all three scenes of the role-play.

Table 4  
*Pilot Study: Interrater Reliability for Pre-, During and Post-Event*

Interrater Reliability	Rater 1	Rater 2
Pre-event (Scene 1)		
Rater 1 vs. Rater 2 $r$	1	.890
$p$		<.001
N	149	149
During Event (Scene 2)		
Rater 1 vs. Rater 2 $r$	1	.767
$p$		<.001
N	149	149
Post-event (Scene 3)		
Rater 1 vs. Rater 2 $r$	1	.997
$p$		<.001
N	149	149

### Actual Study Interrater Reliability

An inter-rater reliability was performed based on the data from the study sample for all three scenes of the role-play simulation to verify validity and reliability for all three scenes and the sub scale items embedded in each scene of the role-play. The raw total application scores from all three scenes were combined into one raw score for each rater, and a Pearson's correlation was utilized to determine the overall inter-rater reliability for the entire study for reliability and validity of the data.

Pearson's correlations were performed for the Pre-event, During event, Post-event, and Total. The results, which showed an extremely high amount of agreement between raters, are displayed in Table 5. For the Pre-event, the inter-rater reliability was determined to be .982. Results for During event indicated inter-rater reliability .992. For the Post-event, the inter-rater reliability was .995. The Total inter-rater reliability was .994. These results indicated that the instruments were valid and reliable with an inter-rater reliability greater than .95. Once the inter-rater reliability showed an agreement between raters greater than .95 across all three scenes and greater than .95 for the total role-play simulation, it was determined that the data set was valid and reliable for analysis.

Table 5  
*Correlations for Pre-, During and Post-Event Inter-rater Reliability*

Inter-rater Reliability	Rater 1	Rater 2
Pre-Event (Scene 1)		
Rater 1 vs. Rater 2 <i>r</i>	1	.982
<i>p</i>		<.001
N	153	153
During Event (Scene 2)		
Rater 1 vs. Rater 2 <i>r</i>	1	.992
<i>p</i>		<.001
N	153	153
Post-event (scene 3)		
Rater 1 vs. Rater 2 <i>r</i>	1	.995
<i>p</i>		<.001
N	153	153
Total Rater Correlation (scenes 1-3)		
Rater 1 vs. Rater 2 <i>r</i>	1	.994
<i>p</i>		<.001
N	153	153

#### Ethical Considerations

The university's Institutional Review Board (Appendix H) approval was obtained before the data collection. The study was completely voluntary, and the participants were given informed consent forms (Appendix I) that explained their rights as participants. The data were analyzed and maintained so that no individual subject could be identified. All record data was secured to be retained for a minimum of five years. Participants were informed that no one was required to participate, that the session was voluntary, and that there was no compensation, no school credit, or any type of retaliation for not participating. Those that did not wish to participate received the live role-play for the instructional unit and their data were not collected. For the purpose of this study, the roles



for the role-play were played by paid university actors. The only ways in which students participated in the role-play were to sit in on the board meeting role-play and to provide structured feedback that represented an interview for an internship for the company. The structured feedback interview was derived and captured in Blackboard and represented the answers for all three scenes of the knowledge application assessment, and both inter-raters utilized the assessment rubric in a blind review.

#### Limitations of the Study

There were a number of limitations to the study.

1. Participation in this study was voluntary
2. The research was limited to a one-hour class period
3. The one hour intervention did not allow for enough time for instructor guided reflection related to each scene in the role-play.
4. The reflection time was structured to occur after the entire role-play had been completed, not after each individual scene.
5. The study utilized a randomly clustered sample.
6. The sample consisted of classes that utilized different delivery modes.
7. Two of the classes were mixed-mode courses, and the third class was a face-to-face (f2f) class.
8. Classes occurred at different times of the day.

9. The study utilized a true experimental post-test only research design with a comparison group and treatment group.
10. More statistical analysis and rigor could have been incorporated if a true experimental pre-test, post-test research design with control, comparison, and treatment groups had been used.
11. Generalization of this study is limited due to specific population and specific content.

### Summary

In this chapter, the methodology and procedures used in conducting the research have been presented. The problem of the study was that though more hospitality institutions with MICE tracks and programs were moving classes online and more students were considering Web-based technology driven courses, faculty and program administrators were resistant to adopt these new technologies into the classroom and the curriculum (Lowrey & Flohr, 2004). These Web-based technology driven classes have been successful in delivering the acquisition of MICE Knowledge. Extra effort, resources, and time for faculty and program administrators to design interactions for learners' ability to apply MICE knowledge has been required (Lowrey & Flohr). The study was a true experimental post-test only with stratified randomly assigned comparison and treatment groups. Data obtained from three instruments were analyzed to determine significant differences between the comparison group subjected to live role-

play (LRP) and treatment group that received virtual role-play (VRP). The analyses of the data for the research questions are contained in Chapter 4. Conclusions drawn from the data analysis and resulting recommendations are presented in Chapter 5.

## CHAPTER 4 RESULTS

### Introduction

Chapter 4 presents the results of the data analysis for the two research questions. For Research Question 1, the null hypothesis was tested using quantitative methods. A financial analysis was performed to respond to Research Question 2. The chapter has been divided into five main sections including (a) overview of the study, (b) the statistical power of the study, (c) demographics of the study sample, (d) results of the analysis for Research Question 1 and (e) results of the analysis for Research Question 2.

### Overview of the Study

The study tested a new Web-based instructional model for delivering both the acquisition and application of knowledge. The application of knowledge enhances career skills which are job, role or task specific. Educators, researchers, and practitioners can utilize the new model to deliver the acquisition of knowledge and integrate experiential exercises to enhance the application of career skills and enhance organizational objectives by providing just-in-time training.

To test the new Web-based instructional model two research questions were formulated. Research Question 1 asked if there was a difference if role-play simulations are delivered virtually versus live for hospitality event management students' application of knowledge? Research Question 2 asked if there was a difference in the cost

effectiveness of Web-based instructional content when examining the developmental costs, delivery costs, and the reusability of the Web-based instruction?

The application of knowledge was delivered through experiential role-play exercises delivered live to the comparison group and virtual, inside Second Life, to the treatment group. An Analysis of Co-Variance (ANCOVA) found a significant difference between groups with higher application scores for the students who received the role-play live compared to virtual. In addition, an analysis was conducted to explore factors to consider when examining the cost effectiveness of Web-based instructional content. The study found the importance of examining developmental costs, delivery costs, and reusability of the Web-based instruction.

#### The Statistical Power of the Study

The statistical power for the study was .875 (see Table 6) which is larger than .80. Table 6 presents the observed power based on the ANCOVA analysis the dependent variable, total application score, as the covariate, and treatment as the independent variable.

Table 6  
*Univariate Tests for Observed Power: Dependent Variable (TotalAppScore) (N=153)*

Variables	Noncent.Parameter	Observed Power <sup>a</sup>
Contrast	9.798	.875

Note. <sup>a</sup>. Computed using  $p = .05$ . The F test tests the effect of treatment. This test is based on the linearly independent comparisons among the estimated marginal means.

### Subject Demographics

The demographics for the study participants were gathered using a pre-survey from Blackboard and were imported into SPSS 17 for data analysis. The demographic variables included: (a) ethnicity, (b) gender, (c) age, and (d) income. Table 7 illustrates the overall demographic statistics. The demographics in Table 7 illustrate that the 95.4% of the students were female, 82.9 % of the students were Caucasian with 69% under 21 years of age and 91.5% of the students made less than 20,000 dollars a year.

Table 7  
*Demographics of Participating Students (N = 132)*

Demographics	Percentage
Gender	
Male	4.6
Female	95.4
Ethnicity	
Caucasian	82.9
African American	4.6
Hispanic	7.2
Asian	3.3
Other	2.0
Age	
18-19	15.1
20-21	53.9
22-23	18.4
24-26	5.9
26-27	3.3
Over 27	3.3
Income	
Less than 15,000	5.3
15,001-20,000	75.7
20,001-25,000	10.5
25,001-30,000	5.9
30,001-35,000	1.3
More than 35,000	1.3

Results: Research Question 1

Does it make a difference if role-play simulations are delivered virtually versus live for hospitality event management students' application of knowledge?

The data analysis and results of the ANCOVA used to respond to Research Question 1 and test the null hypothesis are presented in this section. The ANCOVA was used as the statistical test in comparison to a t-test or an ANOVA to control for the

subjects prior knowledge, enhance the rigor of the statistics, and to remove an extra variable not controlled through random assignment since the study utilized human subjects. Table 8 illustrates Levene’s Test of Equality which tested for the equality of variances. The test shows  $p = .175$  so equal variances were assumed.

Table 8  
*Levene's Test of Equality of Error Variances: Dependent Variable (TotalAppScore)*

<i>F</i>	<i>df1</i>	<i>df2</i>	<i>p</i>
1.855	1	150	.175

Note. TotalAppScore = Total Application Score

Total acquisition score between treatment groups, illustrated in Table 9, was statistically significant ( $F [1,149] = 7.320, p = .008 < .05, \eta^2 = .047$ ) in TotalAcqScore between the comparison and treatment groups. This accounted for 4.7% of the variance in score. The covariate did not have to be removed.

The main effect, illustrated in Table 9, represents the subjects’ total application scores based on the treatment group and shows a statistically significant ( $F [1,149] = 9.798, p = .002 < .05, \eta^2 = .062$ ). The null hypothesis that there was no significant difference between those who received a live role- play versus those that received a virtual role-play was rejected.



Table 9  
*Test of Between-Subject Effects: Dependent Variable (TotalAppScore)*

Source	Type III Sum of Square	df	Mean Square	F	<i>p</i>	$\eta^2$
Corrected Model	1270.243 <sup>a</sup>	2	635.121	7.424	.001	.091
Intercept	651.511	1	651.511	7.616	.007	.049
TotalAcqScore	626.168	1	626.168	7.320	.008	.047
Treatment	838.144	1	838.144	9.798	.002	.062

a. R squared = .091 (Adjusted R Squared = .078)  
 Note. TotalAppScore = Total Application Score. The F tests the effect of Treatment. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

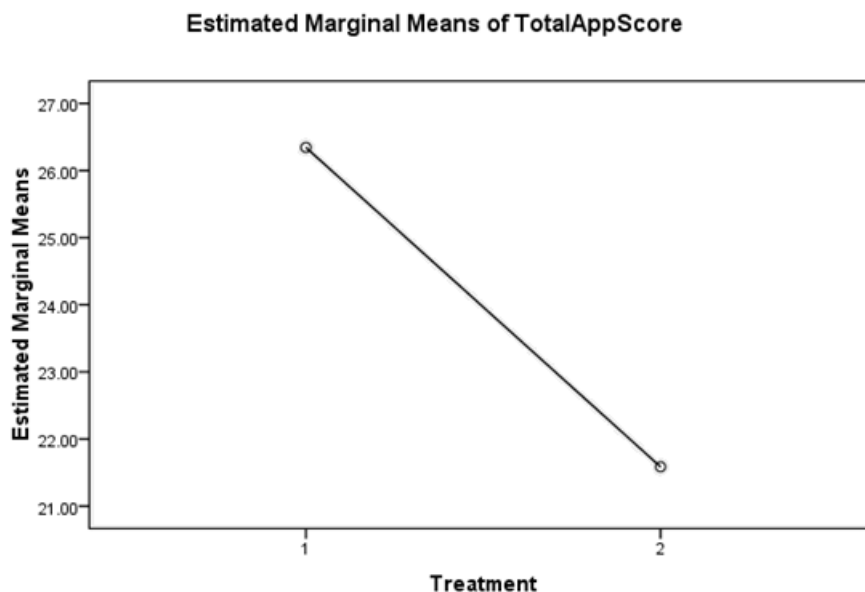
The results revealed that, with controlling the differences from the total acquisition scores, the two groups had statistically significant differences between subjects in the comparison group (LRP), who received live role-play with a statistically significant higher total application score (M = 26.34, SE = 1.047, SD = 8.968) compared to the subjects in treatment group (VRP), who received virtual role-play, with a total application score (M = 21.58, SE = 1.089, SD = 9.936). Results are displayed in Table 10.

Table 10  
*Estimated Marginal Means: Dependent Variable (Treatment Estimates)*

Treatment	Mean	Std. Error	Std. Deviation	95% Confidence Interval	
				Lower Bound	Upper Bound
Comparison	26.34	1.047	8.968	24.276	28.412
Treatment	21.58	1.089	9.936	19.434	23.739

Note. Covariates appearing in the model are evaluated at the following values: TotalAcqScore = 14.28.

The ANCOVA results revealed a statistically significant difference in the application of hospitality students' technology competencies when role-play simulations were delivered live (LRP) and virtually (VRP). The live role-play (LRP) comparison group had statistically higher total application scores compared to the virtual role-play (VRP) treatment group. The ANCOVA tests rejected the null hypothesis that there is no statistically significant difference between hospitality event management students' total application of knowledge when comparing live versus virtual role-play simulations within a 95% confidence interval as represented in Table 10 and Figure 8.



*Figure 8.* Estimated Marginal Means Profile Plot

Note. Covariates appearing in the model are evaluated at the following values: TotalAcqScore = 14.28

## Results: Research Question 2

Is there a difference in the cost effectiveness of Web-based instructional content when examining the developmental costs, delivery costs, and the reusability of the Web-based instruction?

To examine Research Question 2, a comparative financial analysis was conducted and empirical research was examined to determine the developmental costs, delivery costs, and the reusability of the Web-based instruction.

In order to conduct the financial analysis, the question was divided into three sub questions that included: (a) developmental cost analysis, (b) factors to consider for cost effectiveness, and (c) a financial analysis to determine the difference between virtual versus live role-play simulations.

### Developmental Cost Analysis

In order to answer this question, a developmental costs analysis was performed for the delivery of traditional learning compared to that of Web-based learning. When examining the developmental costs, the financial analysis needed to explore direct cost and indirect costs and analysis between traditional learning and Web-based learning.

Table 11 presents the costs for training in the industry and is modeled on creating a 40 hour training session. The assumptions for the analysis were: (a) 500 trainees who each experience a week training; (b) travel costs; and (c) 3-month developmental roll out for the training (Kurtus, 2002).

The financial analysis in Table 11 determined the one week training for 500 people had a total cost of \$875,500 for traditional learning and \$763,000 for Web-based learning. In this scenario it would be more cost effective to deliver the training on the Web with a cost savings of \$94,500.

Table 11  
*Comparative Analysis: Traditional Learning vs. E-Learning*

Cost Descriptors	Fixed Costs	
	Traditional Learning	E-Learning
<b>Direct Costs</b>		
Wages of Trainers	\$400,000	*\$30,000
Materials, development	\$160,000	\$400,000
Materials, distribution	\$10,000	*0
Hardware	*0	\$75,000
Software	*0	\$15,000
Travel Expenses	\$47,500	*0
<b>Indirect Costs</b>		
Learners' compensation	\$240,000	\$240,000
<b>Total Costs</b>	<b>\$857,500</b>	<b>\$763,000</b>

\*Indicates that these costs are likely to be smaller in comparison

\*\* The table is based on estimates

The table was designed with industry average estimates for developmental costs of traditional and Web-based learning (Kurtus, 2002). Kurtus illustrated industry costs and examples of ROI calculations in comparing traditional training to Web-based training, but the analysis was not generalizable due to the nature of the cost variations

when applied to other learning scenarios, number of students, costs and reusability. While Web-based learning can remove some of the direct costs and reduce the indirect costs, the fixed costs can be very expensive. Developing and designing Web-based learning is an expensive process. When exploring the financial developmental costs of Web-based learning one needs to determine the number of learners involved and the number of times the Web-based unit can be reused to determine the economies of scale for cost effective Web-delivery (Bassi, 2000).

#### Cost Effectiveness Considerations

To answer this question, empirical studies were examined to identify those factors that should be considered in determining the cost effectiveness of e-learning. Scarafiotti (2004) had identified five important lessons about the costs of e-learning. Scarafiotti stressed the importance to: (a) identify e-learning costs, (b) explore ways to maximize human resources, (c) implement policies to help contain course development and production cost, (d) consider scale and scalability, and (e) redesign large-enrollment courses to reduce cost and improve learning. Weller (2004) explored the importance of using Reusable Learning Objects (RLO's) in Virtual Learning Environments (VLEs). Weller found that by using RLOs, some of the issues of the high fixed cost of production would be removed through: (a) reuse, (b) rapid production, (c) ease of updating, and (d) cost of effective pedagogy. Bassi (2000) found that the economies of e-learning were highly dependent on the number of learners involved. The greater the numbers of

learners, the greater the probability that economies of scale would make e-learning a cost effective solution.

### Interview with Senior Instructional Systems Designers

Three industry senior instructional designers were interviewed as asked to respond to the cost analysis conducted by Kurtus (2002) and Bassi (2000). They were also asked to respond to the cost effectiveness considerations of Scarafiotti (2004) and Weller (2004). The first two interviews were from defense training contractors and they asked that their names and the names of their companies be confidential due to the nature of the sensitivity of their clients. The third interviewer asked that his name be confidential but the name of his company could be disclosed for the study.

The first interview was with a Senior Instructional Systems Designer with a Defense Training Contractor (Small-sized business). The interviewer added to the analysis by stating while Kurtus' analysis includes many of the major factors involved in developing traditional and e-learning, several additional considerations may also impact the analysis of the difference in their costs, especially when considering experiential learning events. Many of the cost benefits of Web-based training are realized on asynchronous events which may reduce the need for travel time and expense, reduce the costs associated with renting or maintaining facilities, reduce printing and distribution costs, and increase rates of student throughput. Experiential events involving live actors, are however, synchronous events which may or may not yield some of the cost

efficiencies of asynchronous events. Virtual synchronous events may still yield savings in that one group of role players may be able to deliver the event to far more students without having either the role players or the students' travel to participate. The cost of maintaining and revising (updating) the instruction is another factor which may be reduced by the centralization and version-control possible with Web-delivered materials, where the addition of new scenarios, case studies, industry data, etc., can be instantly propagated to all instructors, role players, students, and training administrators.

The second interview was with a Senior Instructional Systems Designer with a Defense Training Contractor (Medium-sized business). The interviewer added to the analysis by stating while Kurtus' analysis demonstrates some of the limitations of making "dollars-only" comparisons of training delivery methods. Since real-world business analysis must differentiate between the options available, anyone considering live versus virtual training should attempt to account for as many factors as possible. A more robust cost analysis may be provided by Return On Investment (ROI) model which looks at many factors including nature of the training objectives, existing levels of technology infrastructure and employee technology expertise, employee satisfaction with existing versus selected training model, overall "fit" of the selected model with the existing corporate culture, required levels of interactivity, criticality of the training task, and nature of training revision cycles and processes.

The third interview was a Senior Instructional Systems Designer with Twenty First Century Solutions in Orlando Florida a Education and Corporate Training Contractor (Medium-sized business). The interviewer acknowledges that while categories of costs used in Kurtus model are valid, they do not take into account significant variation in costs resulting from the very wide range of media types and complexities which may be developed as part of e-learning. Media development factors such as levels of simulation programming, live video development and editing, 3-D modeling and animation, audio development and editing, and visual sophistication can radically alter the per hour cost of e-learning development. Given the extreme variation possible in production techniques (e.g., instructor-developed vs. professionally produced), levels of required realism, involvement of subject matter experts, need for specialized hardware and software, generalizing to an “industry-standard” figure must be done with clearly identified assumptions. In addition, all cost analysis techniques must constantly reassess currently held notions of “must haves” or best practices. Current rates of technology change and the constantly-evolving profile of learners themselves require constant revalidation of any factors used to compare costs of one training delivery method over another.

The three interviewers support the theoretical model provided by Kurtus (2002) and support the considerations of exploring financial developmental cost provided by Bassi (2000). However all three stress that there are too many variables to examine and consider when looking at the cost effectiveness of developing Web-based instructional



content and experiential exercises to help support the instructional content for the development of applied knowledge.

### Financial Analysis of Delivery of Role-play Simulations

In order to answer this second research question, a financial analysis was prepared comparing the costs of the two delivery modes. Table 12 provides a line item analysis of the comparative cost of conducting a live role-play versus a virtual role-play. The table displays the costs associated with executing the simulation in the MUVE of Second Life at the Virtual Convention Center Virtualis. The costs were generated by Gloria Nelson, CSEP of Gloria Nelson Event Design, a meeting professional and a Certified Special Events Professional (CSEP). All the costs associated with transportation, housing, food and beverage were calculated at an average (median) level for travel costs and expenses. The financial analysis shows a savings of \$1,980 using a virtual role-play when compared to a live role-play. To verify the cost analysis the table was presented to top meeting and event professionals in the United States. The table was shared with the administrative team of the MeCo list ([Meetingscommunity.org](http://Meetingscommunity.org)), meeting professionals with Train2Meet ([Train2meet.com](http://Train2meet.com)), and independent planners. Thirteen respondents commented on the costs in the table and confirmed that the numbers represented industry averages for travel, room rentals and financials that are covered in a basic meeting planner contract. The two main points that meeting and event professionals discussed was the cost of the airfare and cost of the printed materials for live meeting. The main discussion on the cost of airfare

assumed that the actors traveled in coach, however many actors and high level speakers for live meetings will only fly first class and it is embedded into their contracts. The second main point was that most of the materials for live meetings for postage and marketing are now being conducted viral through online tools and platforms. With the feedback from the additional event professionals the cost are still more effective using virtual role-play. If the live meeting printed materials were reduced the cost saving is not as great but is still more cost effective when the role-play is conducted virtually. If the cost of airfare is increased due to the actors or participants traveling in first class there would be a greater cost of travel and virtual would still be more cost effective. Using the proposed model and extra feedback from thirteen meeting and event professionals the data would indicate that a virtual role-play could make for considerable financial savings over the role-play in a live environment. Further cost information documenting the cost associated with resources provided by Second Life and the Virtualis Center for the Research on Virtual Role-play Simulations is provided in Appendix J.

Table 12  
*Comparative Costs of Conducting Live vs. Virtual Role Play*

Cost Center Code	Virtual Meeting	Live Meeting	Variance
100 - Income/Budget Allocation \$300			
Total Budget Allocation \$3000.00	\$3,000	\$3,000	
200 - Expenses			
201 - Travel - Air @ \$350 for (3).	\$- 0 -	\$1,050	(\$1,050)
202 - Travel - Ground Transport @ \$60/RT for (3)	\$- 0 -	\$180	(\$180)
203 - Travel - Baggage Check @ \$50 for (3)	\$ - 0 -	\$150	(\$150)
203 - Meeting Space Room Rental	\$250	\$500	(\$250)
204 - Food & Beverage @ \$40.00 for (6)	\$ - 0 -	\$240	(\$240)
205 - Food & Beverage - Travel @ \$75per diem for (3)		\$225	(\$225)
206 - Gratuities	\$ - 0 -	\$100	(\$100)
207 - Marketing	\$ - 0 -	\$200	\$200
208 - Postage	\$ - 0 -	\$ 15	\$15
209 - Internet Connection Comp WiFi	\$- 0 -	\$ 0 -	
209 - Technical Infrastructure - Headphones @ \$60 for 6	\$360	\$ 0 -	
210 - Three Semi Custom Avatars @ \$50 for (3)	\$150	\$ 0 -	
Totals	<u>\$760</u>	<u>\$2,645</u>	<u>(\$1,980)</u>

## CHAPTER 5 DISCUSSION

### Introduction

Chapter 5 contains a discussion of the results of this study, which were presented in Chapter 4. The results are explained and related to prior research and the literature, which was reviewed for this study. Implications of research constraints and areas for future research are discussed. The chapter has been organized to include (a) a summary of the results for each of the research questions and a discussion of the findings as they relate to prior research and the literature reviewed, (b) the significance of the study for hospitality educators and researchers, (c) the constraints and limitations of the study, (d) conclusions, and (f) recommendations for future research

### Discussion of Research Question 1

In the present study, differences in the application scores of hospitality students' regarding their technology competencies were examined. Differences in delivery of role-play simulations (live compared to virtual through Second Life) were examined. In order to answer Research Question 1, the null hypotheses was tested to see if there was a statistically significant difference in the application of hospitality students' technology scores for those who received a live role-play (LRP) simulation compared to those who received virtual role-play (VRP) simulation.

The results revealed that in controlling for differences using the covariate total application score, which controlled for the subjects prior knowledge, that live role-play was more effective than virtual role-play. The two groups had statistically significant differences between groups. The comparison group had statistically significant higher mean application score ( $M = 26.34$ ,  $SE = 1.047$ ,  $SD = 8.968$ ) compared to the treatment group with a mean application score ( $M = 21.58$ ,  $SE = 1.089$ ,  $SD = 9.936$ ). The total application scores based on the treatment group was statistically significant ( $F [1,149] = 9.798$ ,  $MS_{\text{error}} = 85.545$ ,  $p = .002 < .05$ ,  $\eta^2 = .062$ ). The live role-play simulation comparison group had significantly higher mean application scores than the virtual role-play simulation treatment group; thus, the null hypothesis was rejected.

Since no control group was utilized in the study that would have received no role-play, differences in the two role-play intervention groups for the application of knowledge were explored. The significant differences in application scores supported the new Web-based model allowing for both the acquisition and application of hospitality students' MICE knowledge.

There have been no other research studies that compared live versus virtual role-play simulations for hospitality knowledge development. There were prior studies related to using MUVE's (Second Life) and role-play, which explained why the hypothesis was rejected. Penfold (2008) discovered some similar challenges when using Second Life to include both time limitations and technical issues. Penfold discovered that in order to have effective results there must be enough time to immerse the students into the

environment and allow for enough time to debrief the students after they exit the environment. Time for immersion and time for debriefing allows for a greater enhancement in the learning objectives.

The research of Penfold (2008) was important for this study as there was not enough time allocated to immerse students in the environment and debrief them after actors exited the environment. This caused the virtual role-play to be less realistic than the live role-play.

The problem statement in the study discussed a move to a technology, Web-based model and a delay in faculty and administrators from using the new technology. The main issues with the adoption of new technology by faculty and administrators have been the amount of time and resources for development and the lack of instructional design skills to create Web-based learner interactions. The Web-based interaction must be designed to allow for instructor guided reflection and the use of guided discussions related to instructional content to support abstracting, synthesizing, and extending learning.

The findings in the present study were also related to the research conducted by Boggs et al. (2007) who found that it was important to facilitate a discussion that was closely related to the scenes of the role-play so as to emphasize the topics that have been embedded into each scene. The present study only allowed five minutes for personal reflection on the role-play simulation. This was not enough time to immerse students into the role-play and facilitate a discussion related to the specific learning tasked embedded

in the role-play to support abstracting, synthesizing, and extending learning. This would have been enhanced if the instructor had facilitated a discussion to encourage and support reflection, thereby enhancing learning. If time was not a limitation, greater time would have been devoted so as to immerse the students into a scene, debrief the scene and allow for guided instruction related to the application of the tasks embedded into the scene. This study enhanced the research conducted by Boggs et al. by facilitating a discussion that was closely related to the three scenes of the role-play simulation. In their study there was no reflection or facilitated discussion related to the role-play.

The time limitation created a study design with only enough time for one knowledge application assessment applied to the three separate scenes, and the knowledge application assessment was administered after the entire role-play scenario and five minutes of self reflection. The study would have been strengthened if sufficient time was allowed for reflection and discussion after each individual scene in the role-play. If sufficient time was allowed for reflection and discussion, the knowledge application instrument may have had a greater effect on the total application of knowledge. The best way to have a greater effect on the total application of knowledge would be to immerse the students into each scene of the role-play and conduct the three scenes as separate role-plays. To have a greater effect on the application of knowledge after each individual role-play scene, students should be debriefed and a reflection and discussion period related to the embedded learning tasks in the role-play scene should be facilitated. This would strengthen students' ability to apply the embedded tasks into real

world situations as the role-play, learning, reflection and knowledge application instrument are delivered in one complete learning unit (unit one) The Web-based instructional model would continue with the same design for scene two (unit two) and scene three (unit three) allowing the students to apply each embedded task in each role-play scene (unit) enhancing career skills that are task, role, and job specific on the unit level. It is the recommendation of the researcher to combine all three units into one lesson. The instructor would debrief the students and facilitate a lesson level reflection and discussion for all the tasks embedded across all three role-play scenes (units). The Web-based instructional model completes the process with a lesson level application of knowledge instrument creating a greater effect of enhancing career skills that are task, role, and job specific on the lesson level.

The same model can be utilized in organizations for just-in-time training. The Web-based instructional model supports unit, lesson, and course level objectives. These objectives can be delivered anywhere, anytime just before students apply the career skills. This would enhance their ability to apply those career skills. The new Web-based instructional model can be delivered through multiple platforms including computers, electronic devices, wireless devices or mobile devices.

### Discussion of Research Question 2

Research Question 2 was used to investigate the difference in the cost effectiveness of Web-based instructional content when examining the developmental



costs, delivery costs, and the reusability of the Web-based instruction. To examine Research Question 2, a comparative financial analysis was conducted and empirical research was examined to determine the developmental costs, delivery costs, and the reusability of the Web-based instruction.

For the purposes of this study industry average estimates for developmental costs of traditional and Web-based learning were calculated and used in the comparison of traditional and Web-based training. Developmental costs for Web-based training were found to be higher than those associated with traditional training. Though estimated industry costs were applied to the modeled scenario, the analysis was not generalizable to cost effectiveness of all Web-based training.

An empirical analysis was performed in order to investigate the cost effectiveness factors associated with Research Question 2. In the analysis, it was found that Web-based training costs were higher due to the development of the instructional content, the multimedia, graphic design and web development costs. Web-based development has also been determined to be more expensive due to technology, platform, and software costs that are not normally required for traditional training. The print material developmental costs are typically higher in traditional training compared to Web-based training. This is due to the amount of printed instructional materials, study guides, instructor guides and supplemental materials required to support this delivery system.

Traditional training was found to have higher costs for instructors. More instructors are needed based on the number of students relative to classroom space

needed to meet face-to-face. Also, instructor costs are greater when there are multiple instructional units or sessions that must include the entire learner population who need to be scheduled in limited space.

There are more factors involved in the delivery of instructional training that have an impact on the overall delivery costs compared to the developmental costs of the instructional content. The nature of the cost has varied based on the number of students, costs, and reusability. While Web-based learning can remove some of the direct costs and reduce the indirect costs, the fixed costs can be expensive.

When exploring the developmental costs of Web-based learning, one must determine the number of learners involved and the number of times the unit can be reused in order to determine the economies of scale for cost effective Web-delivery. In the present study, developmental costs associated with conducting the training were more cost effective for traditional training. The Web-based one hour unit of instruction required over 30 hours to create and was only used one day in three classes for a total of 152 students.

Research Question 2 was also used to explore costs by comparing costs associated with live role-play versus those of virtual role-play. An outside CSEP, Gloria Nelson, was used to structure the financial comparison. The strategic partner, Dan Parks, was utilized to implement the virtual role-play using Virtualis. It was found that there was a cost saving, in the delivery of the role-play, of \$1,980 by using the virtual role-play conducted in Second Life.

In regard to related literature and research, a number of linkages can be cited. In this study, it was found that the cost of delivery was based on many different factors that determined the overall costs of traditional training compared to the overall costs of Web-based training. One factor was the value of experiential learning. The findings in the present study were supported by the research conducted by McCleary and Weaver (1990) who discussed students' levels of achievement with experiential learning objectives. McCleary and Weaver found that experiential learning objectives improved learning and leadership skills, but the results were not generalizable.

The study supported the research conducted by Boggs (2005) and Laaser (2008) who examined industry costs and examples of ROI calculations and the concept of total cost comparisons. In comparing traditional training to Web-based training. Though Web-based learning was determined to be capable of removing some of the direct costs and reducing the indirect costs, the fixed costs can be very costly. The results of this study, like those of Boggs, illustrated that developing and designing Web-based learning was an expensive process.

The results of the present study were also in basic agreement with Bassi (2000), who found the financial developmental costs of Web-based were dependent on determining the number of learners involved and the number of times the unit could be reused in order to determine the economies of scale for cost effective Web-delivery. Bassi found that the economies of e-learning were highly dependent on the number of learners involved--the greater the numbers of learners, the greater the probability that

economies of scale would make e-learning a cost effective solution. The results are also in agreement with the research conducted by Daniel and Uvalic-Trumbic (2009) who determined the e-learning costs vary based on many outside factors as we design and effective model as we converge on a common worldwide model. National, regional, and local differences need to be considered when considering the outcomes and standards of the e-learning model.

The importance of cost was also investigated by Scarafiotti (2004) who stressed the importance of: (a) identifying e-learning costs, (b) exploring ways to maximize human resources, (c) implementing policies to help contain course development and production cost, (d) considering scale and scalability, and (e) redesigning large-enrollment courses to reduce cost and improve learning.

In this study, the importance of reusable objects was determined to be a factor. Weller (2004), explored the importance of using Reusable Learning Objects (RLOs) in Virtual Learning Environments (VLEs). He found that by using RLOs, some of the issues of the high fixed cost of production would be removed through: (a) reuse, (b) rapid production, (c) ease of updating, and (d) cost of effective pedagogy.

#### Significance To Hospitality Educators And Researchers

This study was significant to both hospitality educators and researchers by illustrating multiple factors to take into consideration in determining costs for traditional training compared to Web-based training. The study was also intended to demonstrate for

educators, practitioners and researchers the feasibility of incorporating experiential exercise to enhance the acquisition and application of hospitality students fundamental MICE competencies that could be delivered over distance, time, anyplace, and anywhere through linking experiential exercises into a Web-based model. The results were determined to be important to hospitality educators and researchers by adding to the general body of knowledge and by designing a new Web-based instructional model that delivers the acquisition of knowledge and the application of knowledge. In the following sections the significance to hospitality educators is explored followed by the importance to hospitality researchers.

#### Significance to Hospitality Educators

This study was significant for hospitality educators by adding to the empirical foundations of: (a) hospitality education, (b) event management (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory. The new Web-based model tested in the present study will allow educators to design Web-based instruction to develop the acquisition of knowledge. The new Web-based model will provide experiential exercises for the application for hospitality students' MICE knowledge. With the completion of this study, educators will have a model for Web-based technology driven classes to successfully deliver the acquisition of MICE knowledge. Educators can use the model for Web-based instruction and design interactions for learners' ability to apply MICE knowledge. The study was also determined to be of financial importance for

educators who were planning on using the model and developing Web-based instruction. Factors to consider when determining the developmental costs of using Web-based instructional and an analysis to determine the return on investment (ROI) of using Web-based instruction were also thought to be valuable to hospitality educators as they seek to stretch tight budgets.

Finally, this study was important in assisting hospitality educators and instructional designers in their consideration of alternative instructional methods for facilitating the acquisition and application of fundamental hospitality MICE competencies by providing just-in-time education that can be delivered over a distance at anyplace and anytime.

#### Significance to Hospitality Researchers

The study was significant to researchers by adding to the research body of knowledge in relation to: (a) hospitality education, (b) event management (c) instructional systems, (d) e-learning, (e) simulations, and (f) experiential learning theory.

In this study a modification to Jarvis' experiential learning theory to assist future researchers has been presented. The revised model adapted Jarvis'(1995) variables to incorporate the acquisition and the application of hospitality MICE students' fundamental competencies.

The study should be useful to hospitality researchers who are considering the use of role-play in their research, since multiple factors were addressed when determining the

cost effectiveness and use of role-play. These researchers should find the factors and the framework useful in designing their own research and future studies.

Finally, this study was important to hospitality researchers in exploring a new Web-based model which enabled research to be conducted and gathered on the Web. The model can be used to research any segment of the hospitality industry. Statistical data can be gathered over distance and time, anyplace and anytime when examining the acquisition and application of fundamental hospitality competencies. Researchers can export the statistical data over distance and time, anyplace and anytime into a spreadsheet and then immediately import the data into SPSS for statistical analysis.

#### Constraints and Limitations

The following constraints and limitations were derived from the findings in the study:

1. Participation in this study was voluntary
2. The research was conducted during a single one-hour class period
3. The one-hour intervention did not allow for enough time for instructor guided reflection related to each scene in the role-play.
4. The reflection time was structured to occur after the entire role-play had been completed, not after each individual scene.
5. The study utilized a randomly clustered sample.
6. The sample consisted of classes that utilized different delivery modes.

7. Two of the classes were mixed-mode courses, and the third class was a face-to-face (f2f) class.
8. Classes occurred at different times of the day.
9. The study utilized a true experimental post-test only research design with a comparison group and treatment group.
10. More statistical analysis and rigor could have been incorporated if a true experimental pre-test, post-test research design with control, comparison, and treatment groups had been used.
11. Generalization of this study is limited due to specific population and specific content.

### Conclusions

Most hospitality institutions have increasingly moved classes online but are concerned about migrating classes and instructional content online. The concern has been that most Web-based models have been designed to deliver the acquisition of knowledge but lack the ability to transform that knowledge into applied career skills for practical use in the industry. This study addressed this concern by designing and testing a new Web-based instructional model. The model was found to support the delivery of both the acquisition and application of knowledge. Educators, researchers, and practitioners can utilize the new model to enhance the application of career skills and enhance organizational objectives by providing just-in-time training. The new Web-based



instructional model can be delivered through multiple platforms including computers, electronic devices, wireless devices and mobile devices.

The integration of experiential exercises into a Web-based model for the acquisition and application of MICE students' knowledge were investigated and tested. Examined were two role-play simulations, one live and one virtual, linked with a Web-based learning management system. The role-play simulations were used as experiential exercises to deliver the application of knowledge to hospitality event management students. The live role-play was more effective than the virtual role-play for the application of knowledge to hospitality event management students.

Web-based training had higher developmental costs than did traditional training. Multiple factors needed to be considered when looking at the overall cost of the training. The numbers of learners involved, the time and the ability to reuse units of training were important in exploring the financial developmental costs and the cost effectiveness of Web-based learning. In determining the economies of scale, it was found that the economies of Web-based learning were highly dependent on the number of learners involved. The greater the numbers of learners, the greater the probability that economies of scale would make Web-based learning a cost effective solution. In addition, a financial analysis was conducted to compare only the delivery system of the two versions of role-play. The virtual role-play was determined to be less expensive.

### Recommendations for Future Research

The following suggestions for future research were derived from the findings in the study:

1. Further research should be conducted in which the research design of the study would be modified to permit (a) the use of one large randomized sample and (b) a pretest/post-test experimental research design.
2. Further research should be conducted which uses a control and treatment group or a control, comparison group as opposed to a comparison and treatment group.
3. Further research should be conducted to determine other experiential exercises to incorporate into the model.
4. Further research should be conducted which allocates additional time for the entire study.
5. Further research should be conducted allowing sufficient time to gather participants' perceptions of the experience, the experiential exercise, and how the intervention impacted their application of knowledge should be allotted.
6. Further research should be conducted to examine the use of role-play as the experiential simulation in the future, by designing the role-play intervention to allow time for reasoning, and guided reflection by the instructor.
7. Further research should be conducted which allows for guided reflection after each individual role-play scene followed by an immediate assessment for the application of knowledge after each individual scene. This assessment should be

linked directly to the embedded learning tasks before moving on to the next role-play scene. This process should be followed until the entire role-play scenario is complete.

8. Further research should be conducted which tests for the application of total knowledge for the entire role-play scenario after the three individual role-play units in order to reinforce all application skills embedded in the individual scenes.
9. Further research should be conducted which continues testing the Web-based experiential learning model for continued validation.
10. Further research should be conducted which tests the model using all of Silver's learning domains.
11. Further research should be conducted which tests the model using all skills within the MICE industry and other skills in the hospitality industry.

APPENDIX A  
EVENT MANAGEMENT BODY OF KNOWLEDGE (EMBOK) DOMAINS AND  
APPROVAL LETTER FOR THE USE  
OF THE COPYRIGHTED EMBOK MATERIALS

## The Taxonomy of the Administration Knowledge Domain

UNITS	TOPICS		
<b>Financial Management</b>	Accounting / Auditing Asset Management Bid Preparation Budget Development Business Plans Cash Flow Cash Handling Procedures Change Controls	Cost/Benefit Analysis Cost Controls Cost Estimating Credit Policies Economic Impact Financial Reporting Fixed / Variable Costs Foreign Currency	Inventory Control Investments Payables & Receivables Pricing Structures Profit Objectives Purchasing Controls Rate Negotiation Resource Definition
<b>Human Resources Management</b>	Behavior Policies Benefits Management Conflict Resolution Discipline Employment Regulations Hiring / Induction Job Analysis Job Descriptions Labor Relations Leadership	Motivation Organizational Structure Orientation Paid Staff / Employees Payroll Management Performance Evaluation Professional Development Recognition Programs Recruitment Seasonal Staffing	Succession Planning Supervision Team Building Temporary / Casual Labor Temporary Staffing Termination Training Uniforms Union Labor Volunteers
<b>Information Management</b>	Briefings / Debriefings Communication Equipment Communication Planning Communication Protocols Confidentiality Agreements Database Management Documentation Procedures	Document Design Evaluation / Analysis Feedback Systems Information Acquisition Information Asset Protection Information Distribution Intelligence Gathering	Lead Retrieval Systems Library / Archives Monitoring & Reporting Presentations Photography / Videography Privacy Policies Record Keeping Procedures
<b>Procurement Management</b>	Bid Solicitation Change Controls Contract Management Performance Evaluation	Procurement Policies Purchasing Procedures Quality Control Reimbursement Policies	RFPs / Briefs Specifications Definition Source Definition Source Selection
<b>Systems Management</b>	Bookkeeping Systems Change Control Systems Communication Systems Database Systems Decision Making Systems	Document Generation Governance Integration Management Inventory Systems Knowledge Management	Maintenance Systems Procedural Manuals Purchasing Systems Reservation / Booking Systems Routing Systems Security Systems
<b>Technology Management</b>	Computers Digital Electronics Email & Voice Mail	Internet / Intranets Office Equipment Telecommunications	Video Web-based Wireless

<b>Time Management</b>	Activity Definition	Duration Estimation	Running Order
	Activity Sequencing	Gantt Charts	Schedule Control
	Change Controls	Planning Tempo	Schedule Development
	Critical Path Analysis	Production Schedules	Time Lines
	Deadline Definitions	Program Agendas	

### The Taxonomy of the Operations Knowledge Domain

UNITS	TOPICS		
<b>Audience Management</b>	Access Controls	Group Movements	Queue Management
	Admission Controls	Guest Relations	Registration Systems
	Admission Systems	Housing Systems	Seating Systems
	Arrival / Departure Modes	Manifests	Ticketing System
	Credentialing Systems	Pedestrian Traffic Flow	Ushering Systems
	Crowd Management	Protocol Requirements	
<b>Communications Management</b>	Announcement Protocols	Delegation	On-site Communications
	Briefings / Debriefings	Event Orders	Production Book
	Channel Distribution	External Connectivity	Public Address Systems
	Command & Control Communication	Guiding / Coaching	Scoring Systems
	Equipment	Interpreter Services	Translation Services
	Contact Lists	Notifications	Verification Documentation
<b>Infrastructure Management</b>	Emergency Services	Parking	Shipping Services
	Gas Services	Participant Equipment	Telecommunications
	Handicap Services	Power Services	Traffic
	Housekeeping / Maintenance	Power Distribution	Transportation
	HVAC Systems	Recycling	Utilities Usage Fees
	Lighting Systems	Seating	Waste Management
	Medical Services	Sewage Services	Water
<b>Logistics Management</b>	Action Plans	Move-in	Staging / Marshalling
	Ceremonial Protocol	Move-out	Task Analysis
	Checklists	Precedence Order	Task Assignment
	Contractor Coordination	Replenishing	Task Identification
	Dismantling	Requirements Definition	Task Interdependence
	Installation	Running Order	Task Monitoring
	Loading Dock Management	Scope Definition	Terminology Agreement
<b>Site Management</b>	Ceremonial Equipment	Mobile Facilities	Site Selection Criteria
	Décor	Perimeter Controls	Site Selection / Contracting
	Environmental Controls	Signage	Staging Equipment
	Equipment Rentals	Site Development	Storage
	Furnishings	Site Inspection Criteria	Temporary Structures
	Maps	Site Plans / Diagrams	Tenting
<b>Stakeholder</b>	Accountability	Economic Objectives	Officials & Authorities

<b>Management</b>	Authenticity Client Management Committees Constituents Cultural Differences	Facility Personnel Government Host Community Media Military	Participants Political Objectives Prioritized Objectives Protocol Management Tourism / Convention Bureaus
<b>Technical &amp; Production Management</b>	Audiovisual Services Entertainment Equipment Equipment Rentals Lighting Equipment Multi-Media	Performer Equipment Projection Systems Pyrotechnics Sound Distribution Sound Equipment	Special Effects Stage Configurations Staging Requirements Technical Producers Technical Rehearsals Technicians / Engineers

### The Taxonomy of the Marketing Knowledge Domain

<b>UNITS</b>	<b>TOPICS</b>		
<b>Hospitality Management</b>	Catering Ceremonial Equipment Client Entertainment Dressing Rooms	Guest Services Gifts / Amenities Housing Services Lounge Facilities	Ready Rooms Reception Areas Sponsor Benefits VIP Services
<b>Marketing Plan Management</b>	Branding Requirements Customer Intelligence Customer Needs / Benefits Customer Relationships Database Building Demographics Differentiation Image Enhancement	Loyalty / Affinity Programs Marketing Objectives Market Research Market Segmentation Marketing Mediums Marketing Messages Niche Marketing Positioning	Product Definition Product Pricing Psychographics Retention Marketing ROI Evaluation Schedule Definition Situation Analysis Strategic Marketing Target Market Definition
<b>Materials Management</b>	Advertising Specialties Awards / Prizes Badges / Passes / Credentials Brochures Coupons Distribution	Flyers Forms Invitations Media Kits Newsletters Posters	Printing Production Printing Specifications Programs Registration Packets Tickets Videos / CD ROMs / DVDs / MP3
<b>Merchandising Management</b>	Brand Management Collectables Commemoratives Concessions	Customer Service Display Distribution Licensing	Logo Wear Manufacture Packaging Souvenirs

<b>Promotion Management</b>	Advertising Broadcasting Ceremonies Contests / Sweepstakes Couponing Cross Promotions Direct Mail Displays	FAM Tours Giveaways Internal / External Internet / Intranet Logo Management Media Tie-ins Narrowcasting Networking	Pod-casting Product Demonstrations Product Sampling Proof of Purchase Discounts Sales Promotions Special Appearances Stunts Trade Show Participation Web-based
<b>Public Relations Management</b>	Disaster Recovery Disaster Response Media Conferences Media Contact Lists	Media Kits Media Previews Media Relations Media Releases	Photo Opportunities Publication Articles Requests for Coverage Spokespersons
<b>Sales Management</b>	Box Office Operations Cash Handling Procedures Concession Sales Coupon Redemption	Merchandise Sales Proposal Delivery Proposal Development Proposal Packaging	Sales Techniques Sponsorship Sales Ticketing Operations Web-based Sales
<b>Sponsorship Management</b>	Benefits Delivery Benefits Packaging Commercial Sponsorship Cross Promotions Donor & Patron Gifts	Grants & Underwriting Image Management In-kind Donations Selling Sponsorships Servicing Sponsors	Solicitation Proposals Sponsorship Kits Target Definition Target Solicitation



## The Taxonomy of the Risk Management Knowledge Domain

UNITS	TOPICS		
<b>Compliance Management</b>	Accessibility (ADA) Alcohol / Liquor Laws Antitrust Laws Assembly Occupancy Codes & Regulations Consent Forms Environmental Protection Exemptions	Fire Safety Food Service Codes Intellectual Property Licenses Merchandise Licensing Music Licensing Permits	Releases Safety Inspections Sanctioning Bodies Special Effects Codes Union Jurisdictions Waivers Work Permits / Visas
<b>Emergency Management</b>	Audience Preparation Civil Disorder Command Structure Communications Plan Crowd Control Disaster Preparedness Earthquake Evacuations Fire	Flood Hazardous Materials Medical Services Mutual Aid Agreements Power Loss Response Accessibility Response Equipment Response Services Severe Weather	Shutdown Procedures Spokespersons Terrorism Threat Assessment Training & Drills Transportation Incident Triage Vehicles & Equipment Warning Systems
<b>Health &amp; Safety Management</b>	Chemical Hazards Equipment Training Fall Protection Fire Safety Systems Infectious Materials Lighting / Visibility	Manual Handling Procedures Noise Levels Occupational Hazards OSH Requirements Pollution Protective Equipment	Safety Meetings Sanitation Systems Slip & Trip Hazards Structural Integrity Waste Management
<b>Insurance Management</b>	Additionally Insured Business Insurance Cancellation Certificates of Insurance Contractually Required	Errors & Omissions Event-Specific Insurance Income Loss Legal Requirements Liability Exposures	Liquor Liability Negligence / Liability Property Loss / Damage Workers Compensation
<b>Legal &amp; Ethics Management</b>	Anti-Discrimination Laws Attrition / Cancellation Behavior Policies Confidentiality Contract Execution Contract Management Contract Negotiation Dispute Resolution	Employment Laws Equal Opportunity Policies Fraud Freedom of Information Act Fundraising Laws Gift Acceptance Policies Liquor Laws Not-for-Profit Laws Perquisites	Privacy Laws Public Assembly Laws Public Safety Laws Statutory Compliance Taxation Laws Terms & Conditions Traffic / Transport Laws Zoning Laws

<b>Risk Assessment Management</b>	Cause/Effect Analysis Contingency Plans Crisis Plans Decision Tree Analysis Documentation Fault Tree Analysis Hazard Mapping Incident Reporting Influence Diagram	Prevention Plans Probability / Severity Analysis Residual / Secondary Risk Response Planning Risk Analysis Risk Avoidance Risk Control Risk Diffusion Risk Documentation	Risk Fields Risk Identification Risk Mitigation Risk Monitoring Risk Resilience Risk Retention Risk Transference Scenario Exercise Walk-Through Inspections
<b>Security Management</b>	Access Control Briefings Command Center Communications Contracted Personnel Credentials Crime Deterrence Crowd Control	Deployment Detection Sweeps Emergency Assistance Equipment Escorting Guarding Incident Reporting Incident Response Law Enforcement	Peer Security Personal / VIP Protection Private Security Personnel Property Protection Stewarding Surveillance Vehicles Volunteer Personnel

## Email Letter Confirmation for Use of the EMBOK Model

James,

Following up on a few items we briefly discussed for your dissertation study:

1. The "academic" reference for the International EMBOK Model (the three-dimensional / five domain version) is:  
Sillers, J. R., Bowdin, G. A. J., O'Toole, W. J., & Nelson, K. B. (2006). Towards an International Event Management Body of Knowledge (EMBOK). *Event Management*, Vol. 9 (4), 185-198. Cognizant Communications.
2. ... the Silvers Taxonomy on my Website is from:  
Sillers, J. R. (2004). Global Knowledge Domain Structure for Event Management. In Z. Gu (Ed.), *Conference Proceedings, 2004 Las Vegas International Hospitality and Convention Summit*, 228-245. University of Nevada Las Vegas.
3. ... and the content on my Website that provides the definitions [http://www.juliasillers.com/embok/EMBOK\\_structureupdate.htm](http://www.juliasillers.com/embok/EMBOK_structureupdate.htm) is from  
Sillers, J. R. (2005). The Potential of the EMBOK as a Risk Management Framework for Events. *Conference Proceedings, 2005 Las Vegas International Hospitality and Convention Summit*. University of Nevada Las Vegas.
4. (in addition to my risk management book):  
Sillers, J. R. (2008). *Risk management for meetings and events*. Events management series. Oxford, UK: Butterworth-Heinemann.

Yours in service,

Julia Rutherford Silvers, CSEP  
[Julia@juliasillers.com](mailto:Julia@juliasillers.com), [www.juliasillers.com](http://www.juliasillers.com)

Author of *Risk Management for Meetings and Events* (Butterworth-Heinemann, 2008)  
and *Professional Event Coordination* (Wiley, 2004)  
Originator of the Event Management Body of Knowledge (EMBOK) Project  
<http://www.juliasillers.com/embok.htm>  
Charter member of the International EMBOK Executive  
Four-Time Winner of the ISES Esprit Award for Best Industry Contribution

APPENDIX B  
PRE-SURVEY INSTRUMENT

## *Pre-survey Instrument*

1. Ethnicity
  1. White
  2. African-American
  3. Hispanic
  4. American Indian or Alaska Native
  5. Asian
  6. Pacific Islander
  
2. Gender
  1. Male
  2. Female
  
3. Age
  1. 18 - 19
  2. 20 - 21
  3. 22 - 23
  4. 24 - 25
  5. 26-27
  6. Over 27 years old
  
4. Income
  1. Less than \$15,000
  2. \$15,001 - \$20,000
  3. \$20,001 - \$25,000
  4. \$25,001 - \$30,000
  5. \$30,001 - \$35,000
  6. More than \$35,000

APPENDIX C  
KNOWLEDGE ACQUISITION INSTRUMENT

## Knowledge Acquisition Instrument

5. What was the first Web site to be called a wiki?
  1. pedia
  2. mania
  3. Web
  4. Web
  5. None of the above
  
6. Wiki's were inspired by what company?
  1. Microsoft
  2. IBM
  3. Apple
  4. Google
  5. None of the above
  
7. In the early 2000's wikis were commonly used for
  1. Communication
  2. Documentation
  3. Intranets
  4. Collaborative software
  5. All of the above
  
8. Who names the first wiki?
  1. Bill gates
  2. Ward Cunningham
  3. Brian Stevens
  4. Steve Cunningham
  5. None of the above
  
9. On what date was wiki entered into the Oxford English Dictionary?
  1. April 15, 2007
  2. January 1, 2006
  3. March 15, 2007

4. May 7, 2007
5. None of the above

10. A wiki allows a user to:

1. Edit and create new pages
2. Create topic association
3. Be a part of the creation and collaboration
4. A&C Only
5. None of the above

11. Some characteristics of wikis could include:

1. No review before modifications are accepted
2. Some require accounts to login
3. Happens in real-time
4. Pages can be created and updated
5. All of the above

12. Bots and JavaScript allow vandalism of wikis to be limited to:

1. Purposeful vandalism
2. Sneaky vandalism
3. Minor vandalism
4. B&C Only
5. None of the above

13. What are nodes?

1. Pages on s that describe related s
2. Links that tie s together
3. Communication software
4. wikis for a specific purpose
5. None of the above



14. Wikis are organized as:

1. Neighbor
2. Common
3. Complex
4. Delegate
5. None of the above

15. Which one below is not an example of a wiki:

1. Memory Alpha
2. Travel
3. World66
4. Susning.nu
5. Travelocity

16. Which one below is not an example of a wiki farm?

1. PB
2. apple
3. Wetpaint
4. Socialtext
5. Webs

17. What is one main issue with reliability and validity of wikis?

1. Sources not cited in the
2. Can't trust them
3. Link to external sites
4. B&C only
5. A&C only

18. Wikis tend to take this type of security:

1. Lack
2. Hard

3. Soft
4. Limited
5. None of the above

19. A wiki signature creates a:
1. Cookie for digital signature
  2. A separate user account
  3. A hyperlink signed to another document
  4. A signature used by all members
  5. None of the above

20. The word wiki stands for:
1. Fast
  2. Quick
  3. Together
  4. Link
  5. Web

21. A wiki system allowing users to create “virtual “card stacks” is called:
1. VirtualStacks
  2. VirtualCards
  3. HyperStacks
  4. HyperCard
  5. None of the above

22. Bo Leuf wrote a book on wikis called:
1. The Wiki Way
  2. The Wiki Web
  3. Using wikis effectively
  4. Web wikis
  5. Designing wikis

23. "Trolling" is a term that means:

1. Surfing through information
2. Hyperlinking the document
3. Intentional disruption
4. Reverting vandalism
5. None of the above

24. Most wiki's are secured by:

1. The users
2. Network administrators
3. JavaScript
4. Information Technology Specialist
5. B&D Only

APPENDIX D  
ROLE-PLAY SIMULATION

## ROLE-PLAY SIMULATION

### *Overview*

You are playing a Rosen College of Hospitality Event Management student looking for an internship with an event management company. After months of exploring different opportunities you finally get an opportunity for an interview for an internship position with Meeting Corporation International. Meeting Corporation International is based in Orlando Florida and is debating about replacing the old intern Josh from the Rosen College with a new intern from the Rosen College.

When you arrive for your interview at 9am you are escorted by the secretary Miss Samantha Snooty into the boardroom. Once you get into the board room you notice three people sitting at the board room table and you are escorted by Miss Snooty to a Chair that has a laptop computer sitting in front of you on the board room table. You are asked to have a seat.

### *The Script*

**Bob** – “Good morning my name is Bob Jones and I am Director of Events here at Meeting Corporation International. This is my Director of Technology Mrs. Emily Jones, no relation.”

**Emily** – “Good morning and welcome to Meeting Corporation International.”

**Bob** – “I’m not sure you had a chance to meet “Josh Forgot- a-lot” he is a present student at the Rosen College of Hospitality Management and our present intern.

**Josh** – “Hey what’s up?”

**Bob** – “We have a huge client coming to Orlando in 4 months and they asked us to come up with ways to integrate s into the event Website. They are looking for uses of s for pre-event, during event and post-event. This will be both a meeting for us and an interview for you. Please observe the meeting and then at the end of the meeting, we will leave and I will give you 5 minutes to gather your thoughts on the topic and your interview will be insights about how to use s for pre-event, during event, and post-event.”

**Emily** – “We need more event majors who understand technology. I understand Information systems, but I don’t understand that much about s other than how to integrate them into the Website. I really don’t know how they are used in the event industry, so I am looking for an intern who can bridge the gap between the technology and the application for the use in event management.”

**Josh** – “ That’s great I had this awesome Professor who name is Mr. Davidson, who talked to us about Event Technology and even had an entire class on the use of s and how we can use them in the event industry.”

**Bob** – “Really Josh what did your professor say.”

**Josh** – “He talked about how we can use s for pre-events, during events, and post-events, but to be honest I really didn’t pay too much attention and I am not sure I remember all the things that he talked about.”

**Bob** – “Well, I’m excited Josh, what did he say about pre-events”

**Josh** – “Well he said something about them being used for speaker information, but I don’t remember what he said. He also said something about using them to link participants together, posting presentations and getting people excited but um....”

**Bob** – “let me guess, you don’t remember what he said and how they REALLY can be applied.”

**Josh** – “No I guess that I should have paid more attention in class.”

**Bob** – “Ok Josh, this is very frustrating, I hope you remember a little bit more about what he said on how they can be used during events.”

**Josh** – “Oh yeah I remember him saying a lot about how they can be used at events. He said you could post event information on a , something about getting updates to mobile devices, share content and get real-time immediate feedback.”

**Bob** – “What type of event information, how do you get it to mobile devices and what types of event content can you share?”

**Josh** – “That’s a great question. I must have been absent that day; I know he took points off of my attendance. NO wait that was another day I missed class. I knew the answers in class but I guess I crammed for the quiz and then core dumped after the quiz. I honestly never thought I would have to apply technology into events, I always imagined I would be in a position that would have a technology expert.

**Emily** – “Well Josh there are many technology experts that can help, even here at Meeting Corporation International, but not all of us possess both the technology knowledge and the event knowledge to link them together. We are more data experts and

systems experts not event technology experts. In your initial interview you talked about how you took many event classes, including event technology.”

**Josh** – “Yes, I know I did but it’s just so hard to think about the class now, I took it a year ago, and even though I understand what it is; I didn’t pay too much mind on how to apply it into our industry.”

**Emily** – “Well Josh that was one of the main reason I told Bob that you were the right intern for the job.”

**Bob** – “Ok... Ok... Let’s get back to the situation and how it can be applied for post-events. What did your professor tell you about using it after an event?”

**Josh** – “Well, um he talked about using it to keep and gain market share. He talked about how we could do some research and use it to keep customers and go after new customers.”

**Bob** – “How can we do that Josh?”

**Josh** – “Gosh he talked a whole lot, but um... from what I can remember he talked about what we tell the client we will deliver is called expected. Then he rambled on to say that we do not always deliver what is expected and this creates a gap. This is called gap or dissatisfaction and something about closing the gap, but how that relates to it or how that can be used in an event industry I honestly don’t remember. OH and yeah he said something about allowing feedback, but how and why I really don’t remember.”

**Emily** – “Well all this is great information. You really should have paid more attention not only to the details about what terms are to take on a quiz but you should especially



pay attention and critically thought about how they can be applied to the industry in general. You picked your major and hopefully you planned on working in this industry. You must be able to apply the knowledge once you graduate or its only useless information, not knowledge.

**Bob** – “I agree with Emily on this one Josh. Even though you gave us some points of how to look at s in pre-event, during event, and post-event you gave us no application of this information to make it useful for our organization.”

**Josh** – “But I am just an intern and that’s not my job and you don’t pay me enough for this experience. I gave you some great points to use s in your organization.”

**Bob** – “What points did you give me Josh?”

**Josh** – “I told you during pre-event it could be used for speaker info, link participants, presentations, and getting people excited. For during events it could be use to post information, share content, give feed back in real time. For post-event I gave you information about keeping and gaining market share, closing a gap, something more about feedback.”

**Bob** – “Again Josh that is great information but how do we use this information. How does it help the participants of the event, the client, and our organization? How can we apply this information into knowledge and skills that make a real impact and give us a competitive advantage?”

**Josh** – “I don’t know I was SICK that day!”

**Emily** – “Sounds like Professor Davidson knew what he was talking about and that he not only understands the information about technology but he also possesses the skills of being able to apply them into our industry.”

**Bob** – “Josh can you please step outside we need to talk to the new possible intern about the use of in the event industry. Maybe they can provide additional insights, during their interview that can help us with the use of s for our client pre-event, during event and post event.”

**JOSH LEAVES and Bob addresses the new intern**

**Bob** – “I need to apologize for the lack of information from Josh. We normally would have this interview face to face but we have run out of time and we have to leave. You have a computer in front of you and I need you to tell me about how I can use a for pre-event, during event, and post-events. I also need you to tell me after each item you list how it can be applied into the event industry to impact our clients, participants and our organization. Emily and I now have to go and fire Josh before the end of his internship. I honestly hope that he is not the typical Rosen student. ”

**Emily** – “When you are completing this on the computer, look around the room and picture 40 other students taking this interview along with you because we plan on interviewing many candidates from the Rosen College. There are so many students looking for internships and jobs these days that we have both the time and the luxury to interview over a hundred candidates and choose the best person for the position. I don’t want to make the same mistake I made with Josh.”

**Bob** – “Have a great day and thank you for coming in for the interview. Remember you should take the next 5 minutes and reflect on how s can be applied for pre-event, during events, and post events. I want to make sure you provide me with the best and most detailed answers available so I can make an informed decision on who to hire for the internship and a possible full-time position. I am leaving Miss Snooty with you to help you finish your interview and she will show you the way out.”

**Emily** – “Have a good day and good luck. Remember that you need not only to recall the information that we talked about during this meeting and interview but more importantly be able to explain to us how to apply it for our clients, participants and our organization. Use your time wisely we are interviewing many candidates. The best of the candidates will even be able to tell us other uses and their application that we were not even addressed during this meeting and interview”

**BOB AND EMILY LEAVE and MISS SNOOTY takes over the interview.**

APPENDIX E  
KNOWLEDGE APPLICATION ROLE-PLAY INSTRUMENTS

# KNOWLEDGE APPLICATION ROLE-PLAY INSTRUMENT

## PRE-EVENT

Now it is time for your interview with Meeting Managers International.

Good luck with you interview questions!

1. List ways s can be applied **pre-event** and remember to use items discussed in the meeting and one of your own ideas.

List each item here:

2. Now for each item listed above for explain in detail how each item can be applied **pre-event** to the client, participants, and the organization. You should describe one listed item at a time in detail and for each listed item above be specific to include how it can be applied for the client, participants and the organization.

Describe each listed item here and apply that item to the client, participants and the organization:

# KNOWLEDGE APPLICATION ROLE-PLAY INSTRUMENT

## DURING EVENT

Now it is time for your interview with Meeting Managers International.

Good luck with you interview questions!

1. List ways s can be applied **during event** and remember to use items discussed in the meeting and one of your own ideas.

List each item here:

2. Now for each item listed above for explain in detail how each item can be applied **during event** to the client, participants, and the organization. You should describe one listed item at a time in detail and for each listed item above be specific to include how it can be applied for the client, participants and the organization.

Describe each listed item here and apply that item to the client, participants and the organization:

# KNOWLEDGE APPLICATION ROLE-PLAY INSTRUMENT

## POST-EVENT

Now it is time for your interview with Meeting Managers International.

Good luck with you interview questions!

1. List ways s can be applied **post-event** and remember to use items discussed in the meeting and one of your own ideas.

List each item here:

2. Now for each item listed above for explain in detail how each item can be applied **post-event** to the client, participants, and the organization. You should describe one listed item at a time in detail and for each listed item above be specific to include how it can be applied for the client, participants and the organization.

Describe each listed item here and apply that item to the client, participants and the organization:



APPENDIX F  
ASSIGNMENT TIMELINE OVERVIEW

## ASSIGNMENT TIMELINE OVERVIEW

1. pre-survey (5 Minutes)
2. Instructional Unit on Wikis (15 Minutes)
  - 2.1. Reasoning and Reflecting (5 Minutes)
3. Knowledge Acquisition Instrument Quiz (10 Minutes)
4. Role-play on the use of Wikis (10 Minutes)
  - 4.1. Reasoning and Reflecting (5 Minutes)
5. Knowledge Application Instrument  
Pre-Event Role-play Quiz (3.33 Minutes)
6. Knowledge Application Instrument  
During Event Role-play Quiz (3.33 Minutes)
7. Knowledge Application Instrument  
Post-Event Role-play Quiz (3.33 Minutes)

TOTAL: 60 MINUTES

APPENDIX G  
KNOWLEDGE APPLICATION ROLE-PLAY RUBRIC ASSESSMENT

# KNOWLEDGE APPLICATION ROLE-PLAY RUBRIC

## ASSESSMENT

Id #: \_\_\_\_\_

### Pre-event Knowledge Application Assessment Check List

Terms Covered (Only three items needed)	Terms used	Clients	Participants	Organization	Total
1. Speaker information					
2. Link participants together					
3. Presentations					
4. Getting people excited					
5. Other					
Total				Out of 20	

### During Event Knowledge Application Assessment Check List

Terms Covered (Only three items needed)	Terms used	Clients	Participants	Organization	Total
1. Post event information					
2. Mobile Devices					
3. Share Content					
4. Real-time immediate feedback					
5. Other					
Total				Out of 20	

## Post-event Knowledge Application Assessment Check List

Terms Covered (Only three items needed)	Terms applied	Clients	Participants	Organization	Total
1. Keep market share					
2. Gain market share					
3. Use to close the gap of satisfaction					
4. Feedback online					
5. Other					
Total				Out of 20	

APPENDIX H  
INSTITUTIONAL REVIEW BOARD APPROVAL

## **Notice of Expedited Initial Review and Approval**

From : UCF Institutional Review Board FWA00000351, Exp. 10/8/11, IRB00001138

To : James P. Hogg

Date : February 11, 2009

IRB Number: SBE-09-06032

Study Title: The Virtual Hospitality Lab -The effects of role-play simulations on hospitality students' technology skills using a multi-user virtual environment

Dear Researcher:

Your research protocol noted above was approved by expedited review by the UCF IRB Vice-chair on 2/11/2009. The expiration date is 2/10/2010. Your study was determined to be minimal risk for human subjects and expeditable per federal regulations, 45 CFR 46.110. The category for which this study qualifies as expeditable research is as follows:

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

The IRB has approved a consent procedure, which requires participants to sign consent forms. Use of the approved, stamped consent document(s) is required. Only approved



investigators (or other approved key study personnel) may solicit consent for research participation. Subjects or their representatives must receive a copy of the consent form(s). All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Advise the IRB if you receive a subpoena for the release of this information, or if a breach of confidentiality occurs. Also report any unanticipated problems or serious adverse events (within 5 working days). Do not make changes to the protocol methodology or consent form before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form cannot be used to extend the approval period of a study. All forms may be completed and submitted online at <http://iris.research.ucf.edu> .

Failure to provide a continuing review report could lead to study suspension, a loss of funding and/or publication possibilities, or reporting of noncompliance to sponsors or funding agencies. The IRB maintains the authority under 45 CFR 46.110(e) to observe or have a third party observe the consent process and the research.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 02/11/2009 04:29:14 PM EST

A handwritten signature in black ink that reads "Joanne Muratori". The signature is written in a cursive style with a large initial "J" and "M".

IRB Coordinator

APPENDIX I  
INFORMED CONSENT



***Informed Consent for an Adult in a Non-medical Research Study***

Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study, which will include about 134 people. You can ask questions about the research. You can read this form and agree to take part right now, or take the form home with you to study before you decide. You will be told if any new information is learned which may affect your willingness to continue taking part in this study. You have been asked to take part in this research study because you are a student in an HFT 3443 Event Technology class. You must be 18 years of age or older to be included in the research study and sign this form. The person doing this research is James P. Hogg of the College of Education at the University of Central Florida.

Because the researcher is a graduate student he is being guided by Dr. Atsusi Hirumi, a UCF faculty supervisor in the College of Education at the University of Central Florida.

**Study title:** The Virtual Hospitality Lab - The effects of role-play simulations on hospitality students' technology skills using a multi-user virtual environment.

**Purpose of the research study:** The purpose of this study is to investigate the effects of role-play simulations on the application of students' fundamental hospitality technology skills. Specifically, this study will test to see if there are any significant differences between two groups who receive role-play. The comparison group will receive a live role-play (LRP) and the treatment group will receive a virtual role-play (VRP) in a multi-user virtual environment (MUVE).

**What you will be asked to do in the study:** You will be asked to take a pre-survey of knowledge and demographics. (If you elect not to participate in the study you do not have to take the pre-survey, but as a part of your regular academic day you will still have to complete the following elements to get your 10 points for your in class assignment.

**Elements of the in-class assignment:**

You will then take an instructional unit on s and take a quiz. After the quiz you will see a role-play on how to apply s to the event industry. After the role-play you will take a short answer quiz on the application of skills. You are being invited to take part of this research study because you have been identified as a student taking an event class at the Rosen College of Hospitality Management. The study will last 60 minutes and will cover the basics of s and then will use a role-play exercise to illustrate how to apply s pre-event, during event, and post-event.

**Voluntary participation:** The only element that is part of the research study is the pre-survey. All other elements of the study are part of your academic day with an in-class activity on the application of s in the event industry. If you choose not to participate in the study you do not need to take the pre-survey but you still need to participate in the activities for the 10 points for the assignment. If you elect not to participate your data will not be used for the study. If you choose to participate in the study your data will be used for the purposes of the study; however no identifiable information about yourself, name or PID will be used for the purpose of the study.

**Location:** Rosen College of Hospitality Computer Labs

**Time required:** 60 Minutes

**Audio or video taping:**

This study does not include any audio or videotaping.

**Risks:**

There are no expected risks for taking part in this study.

**Benefits:**

You will learn how to apply wikis in event management to include pre-events, during events, and post-events.

**Compensation or payment:**

There is no direct compensation for taking part in this study.

**Confidentiality:** Your identity will be kept confidential; the researcher will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from the information you give, and these two things will be stored in different places.

Your information will be assigned a code number and the list connecting your name to this number will be kept in a password protected computer. When the study is done and the data have been analyzed, the list will be destroyed. Your information will be combined with information from other people who took part in this study. When the researcher writes about this study to share what was learned with other researchers, he will write about this combined information. Your name will not be used in any report, so people will not know how you answered or what you did.

**Study contact for questions about the study or to report a problem:** If you have any questions about this research project, please contact my faculty supervisor, Dr. Atsusi Hirumi at: 407-823-1760 or you may contact me directly at:

James Hogg  
804 Royalton Road  
Orlando, Florida 32825  
407-230-1983

**IRB contact about your rights in the study or to report a complaint:** Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

**How to return this consent form to the researcher:** By signing this letter, you give me permission to report your responses anonymously in the final manuscript to be submitted to my faculty supervisor as part of my course work.

- I have read the procedure described above
- I voluntarily agree to take part in the procedure
- I am at least 18 years of age or older

\_\_\_\_\_  
Signature of participant                  Printed name of participant                  Date

\_\_\_\_\_  
Principal Investigator    Date

APPENDIX J  
VIRTUALIS LEARNING CENTER INVOICE

**Virtualis Invoice for using Second Life and the Virtualis Center**

**for the Research on Virtual Role-play Simulations.**



**I N V O I C E**

Prof. James Hogg  
804 Royalton Road  
Orlando, FL 32825  
Event Date: March 23, 2009  
Event Type: Testing Data in Learning Comprehension

Invoice breakdown of services:

Item/Rental/Design	Quantity	Amount
Boardroom Rental Fee	1	\$250.00
Headphones @ \$60.00ea.	6	\$360.00
Semi-Custom Avatars @ \$50.00ea.	3	\$150.00
<b>TOTAL INVOICE DUE</b>		<b>\$760.00</b>

Please remit upon receipt to:  
Corporate Planners Unlimited, Inc.  
34163 Pacific Coast Highway  
Suite 225  
Dana Point, CA 92629

Please visit us on our Website at [www.corporateplanners.com](http://www.corporateplanners.com) to view our full array of services. It has been a pleasure to serve your event management needs.

**T H A N K Y O U**



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