# Classroom and Online Management Courses: A Comparison of Student Performance on Standardized Tests

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## ABSTRACT

*This article reports the findings of a recent empirical study that was conducted at two universities in the United States.  The study compared undergraduate students in traditional classrooms with those taking the same courses with the same instructors in online learning environments.  The intention of the study was to compare subject matter competencies in management principles within student groups and among industry practitioners.  The article provides a report of objectives, methodology, findings, discussion, conclusions, and implications relative to the study.  Final suggestions concerning online courses aimed at certification testing preparation are implicated from the findings of the study.*

## INTRODUCTION

*T*his article reports the findings of a recent two-tiered empirical study that was conducted at two United States university hospitality management programs.  The first step was conducted at a university in the western United States with a sample of students enrolled in a single course, which became a pilot version to be used with a larger sample of participants.  In the second step, the pilot study methods were replicated with a sample consisting of a number of students enrolled in various courses at a university in the eastern United States.  The study compared undergraduate students in traditional classrooms with those taking the same courses in online learning environments.  In each course being observed, the same individual provided instruction for both delivery formats. The intention of the study was to compare course competencies through demonstrated pre and posttest scores on a standardized assessment instrument. This article provides a report of objectives, methodology, findings, discussion, conclusions, and implications relative to the study.  Final suggestions concerning applications of online preparation programs for certification testing are provided.

## BACKGROUND

Early adopter university professors began teaching hospitality management courses in cyberspace formats in the early-to-middle 1990s (Tesone, 2004).  Since that time, many others have become participating instructors in online learning environments (OLE).  Over the years there have been many lessons learned in Web-based online distance education that have been shared with like-minded colleagues (Gibson, Tesone, and Blackwell, 2001).

Over time, the delivery method has become commonplace as evidenced in newly coined terminology such as, e-learning, flex learning, web-enhanced learning, and blended-learning (Anonymous, 2003).  While earlier OLE discussions included concepts associated with program marketing and development, as well as technical support factors; more recent focus seems to be on issues of faculty and student motivational factors, as well as pedagogical practices applied to the delivery method, which are commonly found in the education literature (Giannoni and Tesone, 2003).

Detractors of distance learning methods continue to equate the delivery method with correspondence courses, while proponents find the asynchronous format to be an effective methodology for those learners who possess time and location constraints that preclude actual attendance on university campuses (Tesone, Gibson, Blackwell and

Hodgetts, 2001). Additionally, advocates of Web-based learning delivery systems seem to insist that the method generates higher workloads and extensive interactivity requirements for both instructors and students (Graham and Scarborough, 2001). Some practitioners of OLE insist that the pedagogy associated with the distance learning method must be "learner-centered;" as opposed to the "teacher-centered" practices that are acceptable in the classroom (Gibson and Herrera, 1999). Some faculty members have been anecdotally heard to contend that online learning environments lack visual interaction, while one study suggests that visual learners excel in the text-based environment of Web-based course content (Wardrope, 2001).

Additionally, there are some who contend that Web-based learning is most prominent among business administration, nursing and engineering academic programs. Additionally, certain reports indicate that the method is widely offered within hospitality management programs, as well as in training programs within hospitality organizations (Sadler-Smith, Down and Lean, 2000). It would seem that practitioner oriented curricula tend to embrace OLE methods. Distance learning delivery methods for hospitality management education have flourished in a number of countries around the world, with some governments providing support for certain levels of training via the delivery method (Smith, 2002; Tay, 2001). The recent inclusion of e-commerce courses within hospitality marketing curricula provides students with exposure to Web-based distribution processes, which have partial applications for online course design and delivery (Mitchell, 2001). One adaptation along these lines of value chain applications found in marketing management is the development of a "Just-In-Time Education" model linking online students with various organizations to learn about merger and acquisition strategies (Cho, 2000).

While newer concepts, such as e-commerce, have influenced course content and to some extent course delivery methods, there are initiatives among certain government agencies to generate pedagogical standards for distance learning programs in hospitality management such as the Council for Hospitality Management Education's (CHME) pilot Graduate Standards Programme (GSP) in the United Kingdom (Rimmington, 1999). Additional studies provide more micro-views of Web-based delivery methods to include learning outcomes, applied pedagogy, and student satisfaction with courses offered in this format (Gibson, Hodgetts, Tesone and Blackwell, 2001).

It is apparent from the literature that the hospitality management discipline has embraced formalized initiatives to enhance the expertise of administrators and educators in this field. This area of sectoral studies appears to be following a pathway already established in the fields of business administration, nursing and engineering, which are prominently represented in the literature.

## OBJECTIVES OF THE STUDY

The specific objectives of this study were to:

- Assess management knowledge for individuals who complete traditional classroom and online learning environment (OLE) versions of a management course within a hospitality management program of undergraduate higher education.

- Assess frequency distributions of pre and posttest scores on a standardized management knowledge evaluation instrument, as compared with normative distributions for practicing managers.

## METHODOLOGY

### The Pilot Study Sample

The pilot study took place within a hospitality management school at a prominent western United States university. A convenience sample of students (n=70) who had registered for a course entitled, *Management of Service Industry Enterprises*, a content-oriented principles of management course, became the participants in the study. All of the participants had registered for the traditional classroom course scheduled to meet on Tuesdays and Thursdays from 10:30 am through 11:45 am with the intent of earning three credit hours for successful course completion. The

researchers for the study were separate people from the instructors for the courses. However, both identities are hereafter referred to as "the instructor."

The steps employed in the pilot study were replicated within a hospitality school at a prominent university in the eastern United States. The study engaged 180 students who had registered for the same management course identified in the pilot study over a period of two college semesters. The sample consisted of 45 classroom students and 45 online students during each semester.

**Data Collection Procedures**

Prior to the start of the pilot study semester, the instructor had acquired copies of a management skills survey pencil-and-paper test consisting of 25 questions that was developed by an industrial psychologist. The collateral accompanying the testing instrument documented the validity and reliability of instrument as a measure of management skills knowledge, as demonstrated through a reported normative distribution representing a number of nations to include the United States. According to the collateral, a number of tests were administered to samples of practicing managers across a range of industries to rate knowledge of management principles on a 100-point scale. It reported successive levels of scores among respondents that were correlated with progressive training and experiential levels. The collateral further indicated that the range of correlated scores were consistent among groups over a five-year testing period as a demonstration of instrument reliability. The researchers hypothesized that student scores would compare within the range of scores achieved by practicing managers possessing entry-level training.

The test was administered as an assessment of student knowledge concerning management skills during the first week of the class prior to class lectures and assigned readings. At the same time the instrument was delivered to local area hospitality managers possessing 1-to-3 years of full-time practical experience in supervisory positions (n=50). The purpose of this activity was to compare the scores of practicing managers with the population statistics reported in the instrument literature. Of the fifty-targeted managerial participants, 34 actually completed the testing instrument in the presence of a proctor with three of responses eliminated as being incomplete. This resulted in 31 useable respondents for the study to be compared with the student participants for the purpose of establishing content validity of the instrument for use in this particular study. The 31 respondents were all managers in upscale, full-service hotels near the university. During pre-test questioning, none of the management respondents reported participation in recent managerial training other than what they had learned in college and prior training programs.

Pretest and demographic data for students were tallied by the instructor during the first week and kept confidential with only the instructor having knowledge of the information. The instructor announced the option for any student in the class to take the course in a Web-based format, as opposed to attending regular class sessions. It was learned later in the study that the convenience factors of time and location motivated these students to volunteer for the online version. Originally, thirty-one of the 70 students opted for the online version of the course, with three returning to the classroom after one week, resulting in an experimental group of 28 online students, who were compared with a control group of 42 classroom students. Since participation in the online learning environment (OLE) version of the course was of a voluntary nature, it was made clear that any online student may return to the regular classroom format at any time during the semester for any reason or no reason at all. Also, online students were required to take midterm and final examinations with the regular class on the established examination dates. Voluntary groupings were not the case for the second phase of the study, in which students intentionally registered for either an online or classroom section of the course. Online students in this phase of the study reported the same convenience factors of time and location as reasons for choosing the web-based section.

While the control group attended regular class sessions at appointed times, the OLE version of the course was offered in asynchronous (not real time) mode permitting students to engage in the course from any location and at any time. With the exception of the delivery mode, all attributes of the course were identical between the two groups, including text, lectures, exams, and written assignments. However, all of the online participants were required to respond to the instructor's lecture questions as well as to each other's responses (two classmate comments per week) via a discussion board. In the actual classroom, the same participation was voluntary on the part of the students, even though the lectures and questions were identical for both the control and experimental groups. The researchers

monitored all of the classes to ensure that text-based online and classroom vocal lectures were drawn from the same script. Just prior to the administration of the final examination for the course, both groups completed the management skills knowledge-testing instrument as a posttest for later data comparisons. The instructor maintained the dataset for both groups with updates concerning course grades throughout the semester.

**Data Analysis**

The dataset contained comparisons of all grading information, as well as demographics including age, gender, and national origin, which provided a comparative composite for each group in both phases of the study. However, the purpose of this report is to focus on those factors that may have been directly attributable to a comparison of standardized test scores for the experimental, control, and validation groups that participated in the study. Table 1 provides an overview of total data analysis of comparisons for all participants in both phases of the study.

**Table 1:  Demographic And Pre/Post Test Comparisons**

| Category | | Online |
|---|---|---|
| Sample Size | n=132 | n=118 |
| Grade Point Range | 1.5-3.9 | 1.25-3.45 |
| Grade Point Mean | 2.8 | 2.8 |
| Class standing (1-4)* | 3.5 | 3.5 |
| Pre-test Range | 52%-84% | 56%-84% |
| Post test Range | 60%-96% | 60%-96% |
| Pre-test Mean | 67.4% | 69.5% |
| Post test Mean** | 74.5% | 76.3% |
| Pre-test Standard Deviation | .074 | .083 |
| Post test Standard Deviation | .084 | .100 |

*1=Freshman, 4=Senior
**Reported mean for manager population was 74.4

The control group comprised the largest set (n=132), with the experimental group consisting of 118 participants. The range of self-reported cumulative grade point averages was wider for the control group as compared with the experimental group, which is likely due to variances in sample sizes. However, the mean grade point averages were the same for both groups, as was the average class standing of participants, which were mid-year undergraduate juniors. The range of pre-test scores was slightly wider for the control group, with an equal range of scores for both groups on the posttest. Comparatively, the scores on the posttest for both the control and experimental groups was the widest range at 36 points. Mean average pretest scores varied between the two student groups by just over 2 points, while the same variance for posttest scores rated just below 2 points. Standard deviation scores rose by 20 and 17 points respectively for the control and experimental groups of participants. The data analysis for the study was limited to simple descriptive statistics, as there was no intention on the part of the researchers to determine inferential variances due to the nature of the study, which was to observe a combined convenience sample over a time period of three semesters. The study was specifically designed to measure testing assessments before and after a specific intervention (an online and classroom management course) for a specific sample of individuals.

**DISCUSSION**

One objective of the study was to assess knowledge levels of participants in both classroom and online versions of a management course within a hospitality management program at the undergraduate level of an institution of higher education. An Additional objective included the assessment of student scores on a standardized test upon the completion of a management course of study.

It seemed apparent that learners in both the control and experimental groups did improve scores on a standardized management knowledge-testing instrument near the completion of the course.  Ranges and standard deviations reported from the posttest indicate a normative distribution of scores similar to typical grading scales used in other courses at the two universities.  This was not the case for the pretest results, which demonstrated a truncated distribution of score frequencies, as might be expected for a pre- learning assessment.

It is possible that test familiarity might have introduced an extraneous variable that influenced the posttest scores for the sample (Sims, 2005). However, it is likely that the fifteen week gap between pre and posttest administration would mitigate the probability of this source of influence on the outcomes. Further, the scores reported for practicing managers on the standardized test were similar to those reported by students at the end of the course. One means to test the influence of this variable would be to administer pre and posttests over a fifteen week interval in the absence of an intervention. This type of testing might become an option should the researchers choose to conduct future investigations aimed at rendering generalizable findings. As stated earlier, the intention of this study was simply to observe a specific intervention that might occur in an environment warranting action research.

**CONCLUSION**

In this particular study, participants in both control and experimental groups demonstrated similar scores in standardized metrics used to assess knowledge from a course in management that was a part of a program of higher education in hospitality management at two prominent universities.  Students in both groups engaged in the exact same reading and written assignments, as well as testing processes with the same instructor. Hence both groups engaged in an exact intervention using two different delivery methods resulting in test scores that were similar between groups, as well as seeming consistent with testing score distributions for other courses within the targeted institutions.

**IMPLICATIONS FOR FUTURE RESEARCH**

The findings of the study could render broad implications for consideration by administrators of distance learning institutions. While this study focused on individuals who were preparing for hospitality management careers, many other practitioner oriented programs of instruction exist within training and academic institutions. It seems likely that standardized knowledge proficiency assessment instruments are available in most fields of specific professional practice. In some cases, professional associations provide certification training and competency evaluations to qualify individuals for industry or professional practice.

One professional organization in the field of management is the *Institute of Certified Professional Management (ICPM)* located on the campus of a southeastern U.S. university, which provides training and testing leading to certification in professional management. Many large corporations and government agencies require certification from this body to qualify for senior governance positions. A similar situation exists within the lodging industry through the *American Hotel and Lodging Association (AH&LA)*. Most professional organizations provide service and governance for constituencies representing national and international memberships. This indicates the need to provide training and proficiency assessment for individuals residing within a variety of diverse locations and time zones—the exact convenience factors influencing registrations in distance learning programs noted in this report and the OLE literature.

It is possible that professional associations could collaborate with educational institutions to design and deliver instructional programs to prepare practitioners for proficiency assessment. In fact, the authors of this study are currently engaged in a pilot investigation to identify alternative delivery methods to more efficiently and effectively provide preparation for certified sports professionals. In this case, the sanctioning professional association is collaborating with an academic institution where faculty and administrators possess proficiency in OLE, as well as subject matter expertise. The objective of this initiative is to provide quality professional preparation while reducing travel, lodging and maintenance expenses associated with frequent attendance at regional training centers.

Distance learning administrators within academic institutions could find that numerous opportunities exist to engage in collaborative relationships with professional organizations representing a number of disciplines. Many faculty members maintain relationships with professional associations relative to their disciplines. Certain individuals within academic institutions possess experience in OLE design and delivery in addition to subject matter expertise in numerous professional fields. Future collaborative initiatives could result in mutually beneficial relationships among academic institutions and professional organizations.

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