Hospitality Review

Volume 28
Issue 1 *Hospitality Review Volume 28/Issue 1*

Article 5

January 2010

Maximizing Hospitality Learning Outcomes: An Integrated Experiential In-Class Approach

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Abstract
This study explored the influence of an experiential, in-class approach to the hospitality curriculum as a means of increasing its efficiency and effectiveness. Specifically, the study provides an example of how hospitality faculty might utilize an experiential, in-class approach to integrate additional hospitality-specific content along with process and content issues for working in teams and team decision-making. The results of this study support the efficient and effective use of an experiential inclass teaching method. The value of this study is twofold: (1) it provides an initial test of this approach's usefulness and (2) it provides a forum for continued conversations of how experiential approaches can be utilized to enhance and reinforce other hospitality content and managerial skills and to bridge the gap between vocational and liberal education outcomes.

Keywords
Learning Outcomes, Higher Education, Hospitality, Vocational, Curriculum, Experiential

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By Robert J. Harrington, Godwin-Charles A. Ogbeide and Michael C. Ottenbacher

This study explored the influence of an experiential, in-class approach to the hospitality curriculum as a means of increasing its efficiency and effectiveness. Specifically, the study provides an example of how hospitality faculty might utilize an experiential, in-class approach to integrate additional hospitality-specific content along with process and content issues for working in teams and team decision-making. The results of this study support the efficient and effective use of an experiential in-class teaching method. The value of this study is twofold: (1) it provides an initial test of this approach's usefulness and (2) it provides a forum for continued conversations of how experiential approaches can be utilized to enhance and reinforce other hospitality content and managerial skills and to bridge the gap between vocational and liberal education outcomes.

Hospitality education has long been viewed as "vocational in nature" (Barron & Anastasiadou, 2009, p. 140). Thus, many view this educational field to be based on lecture directly applicable to the field and delivered as "demonstration theatre to a passive audience" (Johnson, 2009, p. 179). Recent research in hospitality education points to growing diversity in the hospitality student body in terms of nationality, ethnicity, and age. This diversity has huge implications for effective teaching methods and differences in preferred learning methods. For example, many U.S. colleges and universities have a growing diversity of traditional-age students and other non-traditional student groups. Studies have indicated vast differences in preferred learning styles for students of these differing age groups and backgrounds (e.g., Sulkowski & Deakin, 2009).

To address these issues, faculty and administrators should devise innovative ways of balancing the need for both learning diversity and efficiency simultaneously. Therefore, this study looks at the value of using an experiential in-class method to combine hospitality-specific content with more general learning outcomes demanded of successful graduates. Hospitality faculty currently use a number of experiential in-class methods (e.g., case study, critical incidents, action research, and small-group problem solving). This study explores the effectiveness and efficiency in student learning by integrating content that is hospitality-specific but with an experiential approach emphasizing team processes and decision-making. The value of this study is in exploring the ability to maximize classroom experiences for student learning of managerial skills

and technical hospitality skills simultaneously. While this study provides some preliminary tests for an indication of effectiveness and efficiency using this experiential, in-class approach, additional value of this study lies in the sharing of innovative teaching methods across the hospitality education community.

LITERATURE REVIEW

A number of studies have considered methods to enhance student learning and exposed reasons for a disconnect between desired learning outcomes and actual outcomes (e.g., Maxwell, et al., 2000; Robertson, et al., 2000). Given the diversity of current university students, researchers have suggested several issues that limit student learning in the classroom, including (1) a disconnect between preferred learning styles and teaching styles (e.g., Maxwell, et al., 2000; Robertson, et al., 2000), (2) poorly designed assessment methods (De Vita, 2002), and (3) differing perspectives on appropriate interaction between instructors and students (Butcher & McGrath, 2004). For dealing with the diversity of university student population, Sulkowski and Deakin (2009) suggested adopting classroom approaches that become more inclusive in nature. In other words, "rather than attempting to respond to the particularities of individual cultural groups within the student body" (Sulkowski & Deakin, 2009, p. 163), institutions should review classroom practices and adopt those that are culturally inclusive to maximize student learning.

In a study of international students in the Australian system, Hellsten and Prescott (2004) pointed out that students from culturally diverse locations were reported to value more interactive modes, such as discussion-based learning. They also provided several suggestions to make courses more culturally inclusive. These suggestions include obvious and workable assessment guidelines sensitive to individual variation and diversity. Further, the study suggested the internationalization of curriculum to ensure the promotion of cultural change and pointed out the success of mentoring programs in many universities. Implications from these studies indicate the value of discussion-based approaches to learning as well as enhancing curriculum delivery and communication using reflective teaching methods.

While many teaching styles and methods have their advantages and disadvantages with respect to students' learning experience, one in particular has captured the attention of many scholars: improving learning through the use of research termed "the new science of learning" (King, 2003). Experiential learning is one such stream of "the new science of learning." Experiential learning is the reflective process of making

meaning from direct experience (Itin, 1999). An experiential learning approach appears to elevate students' learning experience in a new direction with a sense of continuous improvement in the learning experience (Kolb & Kolb, 2005). Experiential learning can be highly effective because it facilitates the experience of learning while addressing individual needs. The cyclical concept of experiential learning includes experience, followed by reflection, conceptualization, action, and further experience. Kolb and Fry (1975) argued that the learning stage starts with an individual carrying out a specific action and seeing the effects of this action. The second step is the understanding of these effects in the particular instance, while the third step is the understanding of the general principle. After the general principle is understood, the last step is the application through action in a new situation.

While most scholars refer to it as experiential learning, Wolfe and Byrne (1975) termed it "experienced-based learning." While experienced-based or experiential learning can take place both inside and outside the classroom, the method used in this study focuses on an in-class, experiential approach. Therefore, the term "experiential in-class learning" will be used here and is defined as experienced-based learning in the classroom. The approach brings the experiential activities to the classroom and presents the educators and the students with an opportunity to maximize classroom experiences for learning managerial and technical hospitality skills.

Similar to other applied university/college programs (e.g., medicine, engineering, etc.), the applied nature of the hospitality profession with both managerial and technical content makes experiential in-class learning pedagogies an important means to deliver on the needs of the hospitality graduate. Early proponents of experiential learning attest to the value of its use providing superior learning experiences for both applied content and the learning of behaviors (Rogers, 1969).

One experiential approach suggested for the college classroom is described as "collaborative learning," whereby students collaborate in small groups (Johnson, Johnson, & Smith, 1998). Johnson et al. (1998) found that this collaborative approach increased student learning, particularly when compared to traditional forms of pedagogy. In a recent study on whole grains, Stastny (2009) used a "self-directed learning" approach rather than a traditional lecture model. Self-directed teams were instructed to complete a presentation and sensory evaluation. While the results did not provide a reason for a self-directed learning preference, Stastny (2009) indicated students in the study preferred the self-directed

learning approach. Results in earlier research implied a greater sense of understanding of principles (Kolb & Fry, 1975), a sense of personal continuous improvement (Kolb & Kolb, 2005), and greater flexibility in learning practices by the students (e.g., Sulkowski & Deakin, 2009).

Effectiveness can be defined as "a measure of the match between stated goals and their achievement" (Fraser, 1994, p. 104). Thus, effectiveness in higher education is closely tied to quality assessment due to the need to determine desired achievements (outputs) based on judgments about program objectives (which are also part of inputs). Efficiency, on the other hand, is commonly defined as "the production of the desired effects or results with minimum waste of time, effort, or skill" (American Heritage, 2009). Therefore, efficiency in higher education relates to finding methods to maximize desired outputs while minimizing inputs. Inputs in this instance should be defined as methods to enhance learning while simultaneously reducing student time demands and instructor time demands. The efficiency motive is important in higher education because it allows greater overall outputs (student learning) based on the growing need for graduates to address more complex issues in industry, and it acknowledges higher education's time and resource limitations (e.g., budget reductions, larger class sizes, maximum allowable credit hours, simultaneous needs of a diverse student body, etc.).

For hospitality education studies assessing the usefulness of in-class simulated experiences (e.g., computer-based simulations, student-run restaurants, written case studies, etc.), Kendall and Harrington's (2003) review pointed out a general lack of measures to test either the effectiveness or efficiency of collaborative, experiential methods. Most studies seem to use students' self-reported measures rather than other objective measures. Of course, finding appropriate measures that effectively tap into problem-solving, team process, etc., is a challenge. Kendall and Harrington (2003) used self-reported measures for the effectiveness of team-process skill development, overall perceived learning, and strategic business-planning ability.

As indicated through a synthesis of the literature, classroom practices with experiential and collaborative elements are likely to be useful to enhance student learning. Specifically, experiential in-class approaches have received reasonable support for effectiveness and as a preferred student learning approach. But there appears to be a gap in the literature in terms of student learning efficiency. Therefore, the purpose of this study was to determine whether the experiential in-class approach used in this study allowed greater efficiency (the introduction of food and

wine pairing along with team, team process and group decision-making, simultaneously). A second question was whether this method increases learning outcome effectiveness. The concepts of beverage management or wine evaluation are far from underutilized in most hospitality programs, but other than in relatively large hospitality programs, food-and-wine pairing is not provided as a standalone course and is covered at a relatively cursory level in most beverage management (e.g., Katsigris & Thomas, 2007) or wine texts (e.g., Koplan, Smith, & Weiss, 2008).

Using food-and-wine pairing as a decision vehicle may not be an effective choice for many programs, but it is shown here as an example of how hospitality-specific content and more general management topics can be integrated with experiential in-class methods. If appropriately designed, experiential in-class approaches, such as the approach used in this study, may also enhance learning across a variety of cultural boundaries inherent in the current makeup of most hospitality student populations (age, gender, nationality, etc.).

METHODS

The study used a quasi-experimental design with reoccurring intact groups (i.e., reoccurring sections of a hospitality management course over three consecutive semesters). The sample in this study consisted of 311 junior- and senior-level undergraduate students enrolled in a hospitality management program at a North American University. Because the course sections in this study were of a reoccurring intact type (based on the course offering each semester), the section size varied, based on student enrollment each semester. Therefore, section one had 67 members, section two had 91 members, and section three had 153 members in the class.

When the intact groups (i.e., course sections) were compared by key characteristics--class time of day, gender, cohort distribution, and instructor (the same instructor for all three)--no significant differences were apparent. One key characteristic that was different was class size by semester. Class size is an important variable to consider in educational research (Wiersma, 1995) and has important implications for the results in this study.

As part of all three course sections, a key learning objective focused on groups, teamwork, and decision-making. Sections one and three used a traditional lecture, discussion, and test format (Treatment 1). Section two received a different treatment: an experiential in-class learning approach involving individual decision-making, team decision-

making, and assessing the team process. This treatment group received the same written test over the groups, teamwork, and decision-making material. For all three class sections, the course material was presented over three class periods of approximately 1.5 hours each.

To test the usefulness of integrating technical issues in the hospitality field, the students in section two utilized food-and-wine pairing decisions as the central decision issue. While many cases are available for this purpose (e.g., cases such as being stranded in a dessert, being involved in a plane crash, etc.), an objective here was to integrate hospitality content to maximize student learning of technical content as well as team process and decision-making behaviors.

Treatment 1

The treatment for class sections one and three used a format of required readings from a text on organizational behavior (Johns & Saks, 2008), videos, and PowerPoint presentations/lectures on groups, teamwork and decision-making. For the class sections in this treatment, food-and-wine pairing was not a part of the class discussion or reading material.

Content of the videos, lecture, and reading focused on key issues shown to impact teams, the team process and decision-making quality. In the group and team portion, topics included the potential impact of (1) the organizational context/environment (e.g., management practices, processes, systems), (2) leader-member relationships, (3) group composition, (4) team member characteristics (climate, diversity), (5) team relationships, (6) team problem-solving/decision-making, and (7) other factors shown to drive successful outcomes. For the decision-making portion, topics included the potential impact of (1) the decision-making process (e.g., groups, too little or too much information), (2) context (risk, uncertainty, volatility, complexity), (3) a rational approach, (4) biases, scripts and schemas, (5) intuition, and (6) evaluation (sunk costs, escalation of commitment, hindsight).

As part of this presentation, the instructor integrated discussion questions to facilitate classroom interaction and reinforcement of the material. After three class periods on these topics, students' knowledge was tested using a 25- item, multiple-choice test.

Treatment 2

The treatment for class section two used a format of required readings (two chapters from the same text as required for sections one and three) and described an experiential in-class exercise that integrated food-and-wine pairing as well as a discussion of groups, teamwork, and decision-making. For this treatment, the discussion was still instructor led (as in Treatment 1) and readings were the same for both treatments. Video and PowerPoint presentations were replaced with a group in-class exercise that integrated decision-making, and predominately process issues associated with groups, teamwork, and group decision-making. Thus, while treatment one relied more on content, Treatment two was more concerned with processes of decision-making and of teams.

After three class periods using the in-class exercise, students' knowledge was tested using the same 25-item, multiple-choice test as used to assess sections one and three. Specific steps of the experiential, in-class design were as follows.

Students in section two were randomly assigned to teams by the instructor. Team size ranged between five and six people, with a total of 16 teams. The students in this study had a range of knowledge levels on food and wine in general, and minimal knowledge of food-and-wine pairing. After being assigned to teams, the experiential, in-class program utilized the following steps (see Table 1).

Table 1
Outline of in-class program

In-class Program	Process and Time
Step 1: Food and wine recommendations	Introduction of the situation = 10-15 minutes Completion of individual recommendations = 10-15 minutes Completion of team recommendations = 35-45 minutes
Step 2: Group process assessment	Completion of 23-item survey of group process (individual perceptions w/o group discussion = 15-20 minutes)
Step 3: Review expert recommendations	Review the facts/expert recommendations of food and wine pairing = 20 minutes
Step 4: Satisfaction score and team problem-solving	Calculate gastronomic satisfaction scores = 10 minutes Discuss results and implications = 20 minutes Calculate individual perception of team process and plot on graph = 10 minutes Calculate average for each team and plot on separate graph = 10 minutes
Step 5: Team process implications	Instructor provides discussion of key issues associated with the team process = 20-25 minutes Each team discusses similarities and differences in perception by individuals in group (what are the implications?) = 20-30 minutes Round-robin to have each team discuss their team process and how it may have impacted team decisions and synergy = 20-30 minutes

Students received a brief introduction to the topic of food-and-wine pairing, a seven-course menu, and list of possible wine selections. A sample menu item and possible wine selections are provided in Table 2. Levels of match or "gastronomic satisfaction" scores were derived using the structured food-and-wine matching format by Harrington (2008). For food and wine, the match level could range from 0 (no match) to 10 (perfect and synergistic match). The level of match value for each course

was created following a matching methodology for food-and-wine elements (i.e., taste components, texture elements, and flavors) described by Harrington (2008, pp. 249-259). For each menu item and wine choices, the highest possible match score and best wine match might not have been a maximum score of 10, as most choices are less than perfect. Therefore, the highest possible gastronomic satisfaction score summed across all seven food courses was 62 (rather than 70).

Table 2
Menu item example and possible wine choices

Food Item/Course	Possible Wine Choices and Match Level (in parentheses)
"Fire and Ice" Northwest Oysters Baked Olympia oysters topped with roasted shallots, ginger and proscuitto. Served with a savory sorbet of fennel, lime, and wine.	A) Bartenura Moscato d'Asti (Italy) (2 points) B) Chateau St. Michelle Eroica Riesling 04 (Washington) (9 points) C) Peter Lehmann Barossa Semillon (Australia) (4 points) D) Lindemanns Bin 65 Chardonnay (Australia) (3 points)

Individuals selected their food-and-wine recommendations prior to meeting as a group. Then, the five-to-six-person student teams met, deliberated on possible matches, and reached consensus on the food-and-wine recommendations as a group.

Based on the experts' level of match score, students totaled the individual and the team gastronomic satisfaction scores. To assess the effectiveness of the team, each team calculated the average individual score, team score, gain (loss), percentage change, best individual score, lowest individual score, and team-synergy score. The methods used in calculating these scores are provided in Table 3. These calculations were adapted from team-scoring methods developed for use in other team-process and decision-making exercises (Human Synergistics, 1989).

Table 3
Individual and team calculations

Team Scores	Calculation Method
Average individual score	(Sum Individual Scores)/(Number of Team Members)
Team score	Total match level scores selected by the team
Gain (loss)	Team Score minus Average Individual Score
Percentage change	Gain or Loss/Average Individual Score
Best individual score	Highest Individual Score
Lowest individual score	Lowest Individual Score
Team synergy score	Team Score minus Best Member Score

Finally, students plotted the results of the group-process assessment survey (e.g., the 23-item survey of team-process perceptions) on a chart depicting where their group fell in relation to other team-process percentiles. The 23-item instrument was further divided into six categories key to the team process based on a review of the team-building and decision-making literatures. The categories included (1) use of information (3 items), (2) participative control (3 items), (3) teamwork (5 items), (4) innovative capability (4 items), (5) internal context (4 items), and (6) external context (4 items).

MEASURES

This study used two main methods to assess the effectiveness and efficiency of learning outcomes.

Average Individual vs. Team Scores

As each individual student made food-and-wine matching decisions as a first step, the average individual score was compared to the team score. This comparison tapped into whether or not the team decision represented a better overall food-and-wine match than the average for all individuals on the team.

As described above, the students received a brief introduction to the food-and-wine pairing topic and a seven-course menu with a list of four possible wine selections per course. The food-and -wine match score for each course ranged from 0 to 10 (10 = ideal match). The resulting score for each food-and-wine course was therefore dependent on the student's and team's wine selection. The overall food-and-wine match score was calculated as the sum of the food-and-wine match scores for

each course in the seven-course menu. A maximum possible score was 62 and a minimum was 10. The average individual student score was 31.73 (s.d. = 2.97, range = 13-49). The average team score was 34.16 (s.d. = 8.45, range = 19-52). While treatment two had 91 members, only 88 members provided fully complete and usable information for the individual versus team score assessment.

Gain and loss team scores

As part of the team process assessment, teams in this study were asked to compare the average individual gastronomic satisfaction score to the score derived from the team (see gain or loss calculation in Table 3). Because this assessment was based on improvement in gastronomic satisfaction using a team process, a gain represented a higher team score than the average individual in the team, and a loss represented a lower team score than the average individual in the team. Therefore, differences in food-and-wine knowledge prior to this exercise were not as important; rather, the measure reflected the level of improvement as a group by making use of team members' knowledge in a synergistic way.

Classroom Test Results

To assess the impact of the experiential in-class approach on team and decision-making topics, test results were compared for two classes using a more traditional lecture-and-discussion format, versus the class using the experiential and discussion format. The results for the lecture/discussion method (Treatment 1) were executed in the semester immediately before and immediately following the experiential method (Treatment 2). For both semesters, the test or quiz covering the team and decision-making material used a multiple choice format with 25 test items in total. The 25-item test was converted to a 100-point score (25 items worth four points each) for grading purposes.

Other Measures

The 23-item team process instrument used a 10-point Likert-type scale with anchors at the upper, middle, and lower points of each item. The items were chosen from previous research (e.g., Eisenhardt, 1989; Harrington et al., 2002; Human Synergistics, 1989) so that the measurement instrument reflects the most reliable measures available and provides a strong basis for content validity. In this study, the reliability coefficient for the 23-item instrument had a Cronbach's alpha of .67 (n = 88). In general, this alpha indicates a minimal but adequate level of reliability for this instrument (Hair et al., 1998).

Team process percentile scores

Items in the instrument provided six areas for assessing internal processes in the team and perceptions of the internal and external context. These areas included (1) use of information (3 items), (2) participative control (3 items), (3) teamwork (5 items), (4) innovative capability (4 items), (5) internal context (4 items), and (6) external context (4 items).

The results of the team process (instrument sections on use of information, participative control, teamwork, and innovative capability) were converted into individual summed scores for each area and average team summed scores (sum individual scores/number of team members) for each of the team-process sections in the instrument.

Next, each individual plotted his/her scores on what the instructor described as the "four diamonds" graph of the team process. This was also done using the average team summed score of each team. Basically, this graph is a round chart made up of four diamond shapes with defined points moving outward and representing the 25th percentile, 50th percentile, and 75th percentile; the outer edge served as the 100th percentile. This approach allowed the students to visualize a graphic display of their perceptions of the team process, other team members' perceptions, and the average overall team perception.

The percentiles for the four diamonds graph were calculated from a student sample of 934 individuals who were involved in a variety of in-class group projects. Table 4 provides the median and percentiles for the four instrument sections from this earlier sample of students. It also provides the average individual summed score, the range of individual scores, the average team summed score, and the range of team scores from the sample of students in the current study.

The use of these percentiles was instrumental in driving team discussion of the team process. Did their team perform at a higher or lower level in one or more areas than prior student groups? If so, how might this have impacted the decisions they made? Also, was there a relative agreement across the members of the group on the team process? Why or why not? Etc.

Table 4
Percentiles and sample means by instrument section

Instrument Section	Prior Sample Percentiles	This study's student sample
Use of information (3 items)	25th = 20 Median = 23.5 75th = 26	Individual mean = 24.75 (range = 9-30) Team mean = 24.4 (range = 20.5-28.4)
Participative control (3 items)	25th = 21 Median = 25.5 75th = 28	Individual mean = 26.07 (range = 15-30) Team mean = 26.02 (range = 23.3-27.8)
Teamwork (5 items)	25th = 36 Median = 41 75th = 46	Individual mean = 43.24 (range = 28-54) Team mean = 41.31 (range = 34.4-47.2)
Innovative capability (4 items)	25th = 21.5 Median = 26 75th = 30	Individual mean = 28.36 (range = 14-43) Team mean = 28.4 (range = 24.4-34.2)

This in-class evaluation process provided for substantial discussion within student groups, across student groups, and in an instructor-led format for Treatment 2 of this study. Perceptions of the internal team context and external context were summed by each individual and calculated as a team average to integrate discussion of the importance of context perceptions on decision-making and the team process.

These in-class discussions included group context issues, learning outcomes derived from this exercise, implications for future involvement with teams and group decision-making, and consequences for team organizational issues.

Size

Because class size has been shown to substantially impact learning outcomes and teaching method effectiveness (Wiersma, 1995), class size was included as a control variable in this study. The class sizes in this study ranged from 67 to 153; to ensure that statistical differences were not due solely to mathematical scale constancy issues, class size as a control variable was included in its raw form and then a second time as the natural log of class size (e.g., Hart & Banbury, 1994). Because the

results using the raw class size values versus the natural log of class size were not statistically different, the results using the raw class size values are shown to ensure direct interpretation of the impact of size.

RESULTS

The key question is whether or not the experiential in-class approach used in this study allowed greater efficiency (the introduction of food-and-wine pairing along with team, team process and group decision-making, simultaneously). A second question concerns whether this method increases learning outcome effectiveness.

Food-and-wine content

Food-and-wine knowledge was introduced and reinforced using three methods: individual critical thinking about this process, peer learning, and problem-solving using food and wine as a decision issue while simultaneously enhancing student food-and-wine knowledge, and expert suggestions for the best match for each food course in the exercise. To quantify these results, the improvement in the food-and-wine selection score from the average individual score compared to the team score (sum of individual scores divided by the number of team members) indicated substantial improvement. In this study, 12 of 16 teams (75%) obtained a higher food-and-wine pairing score compared to the average individual score (ranging from a .7% to 20% gain). Four of 16 teams (25%) obtained a lower food-and-wine pairing score compared to the average individual score (3.4% to 8.5% loss). The average gain was +6.22 points for the teams that improved versus an average loss of -3.78 points for the teams who incurred a loss.

Because the majority of groups saw a sizable gain in this exercise, this provides some initial support for the effectiveness of this in-class, collaborative method as a learning method of hospitality-related material. It also supports the use of hospitality material as a decision issue for courses focusing on key managerial topics as a way to efficiently integrate additional professional knowledge for students of diverse learning styles. While we used a quantitative assessment of peer learning outcomes (i.e., team scores versus average individual scores), a team with a lower score does not necessarily mean less learning took place. For instance, the follow-up discussion of the expert opinions on match level and rationale for food-and-wine selections reinforced food-and-wine knowledge for all students, regardless of gains and losses in the decision-making exercise.

Team-building and decision-making learning outcomes

The experiential in-class approach (Treatment 2) integrated the following areas: (1) Comparing individual and group perceptions of the team decision-making process; (2) discussion and reflections within and across teams on team work and the team process; and (3) a discussion of team process issues relating to experiential activity (i.e., key contextual features and decision-making tactics, the threat-rigidity cycle in newly formed teams, and four-diamond team grid [use of information, participative control, teamwork, and innovative capability]).

To assess the efficiency and effectiveness, the results of this particular semester's class test scores (Treatment 2) over the decision-making and team material were compared with the previous and following semesters' scores (Treatment 1). From an efficiency standpoint, the experiential in-class design used the same amount of class time for the exercise and discussion of team topics as the previous and the following semesters using a traditional lecture and discussion format. Because the experiential in-class approach also integrated food and wine as the decision issue, the authors suggested that the experiential approach appears more efficient than the traditional lecture/discussion method (at least from a student-efficiency standpoint).

For the Treatment 1 section, the average test scores for the material were 80.27 points (Class Section 1) and 71.11 points (Class Section 3) out of 100 possible. The average test score for the experiential in-class section (Class Section 2) was 77.86 points out of 100 possible.

To test for differences between class sections on test score results, we used linear regression. Tests for homogeneity of variances using Levene statistic indicates this assumption was not violated. The variables were included in the regression model with class size entered first, followed by class section type (i.e., treatment). Class section type was dummy coded, with Treatment 2 coded as "1" and Treatment 1 coded as "0".

Table 5
Test results regressed on class size and treatment dummy

Variables	Test Results
Class Size	-.45***
Treatment	.01
F	40.24***
R	.46
R^2	.21
R^2 Adj.	.20

*** p < .001; **p <0.01; *p < 0.05; +p < 0.10 All betas are standardized.

Table 5 provides the regression results with test results regressed on class size and treatment type. For this test, the F value indicated a highly significant difference overall ($F = 40.24$, $p < .001$). The R^2 indicates that class size and treatment type explain about 21% of the variance in individuals' test results. Further investigation of the results indicated that class size had a significant and negative relationship with test results in this study ($\beta = -.45$, $p < .001$). The finding also supported earlier suggestions that larger classroom sizes may have a negative impact on student learning outcomes.

Once class size effects are controlled for, the pure relationship between test results and treatment were non-significant. Therefore, this finding indicated that when class size is held constant, both treatments were equally effective for successful test taking on groups, teamwork, and decision-making content. The finding of no difference in test results across these three class sections supports our hypothesis that the experiential, in-class approach used in this study proved more effective and efficient than the more traditional lecture/discussion approach. Our reasoning is that students in this study obtained comparable test results on teams and decision-making content but developed a greater basic understanding of food-and-wine pairing issues as well as tacit skills involved in team processes and group decision-making.

CONCLUSIONS

Hands-on or experiential learning approaches have a long history of use across hospitality education. These hands-on approaches have traditionally focused on hospitality-specific areas such as food and beverage and other service encounters. Experiential methods have many

times been in the form of internships, demonstration theater, and other laboratory situations. This traditional method has given hospitality education a label as vocational in nature. More recently many researchers have called for a greater balance between liberal arts content and hospitality-specific content.

The general education literature has demonstrated the effectiveness and student preferences for collaborative and experiential approaches to learning (Cantor, 1997; Walker, 1996). Given the growing diversity across the student population, faculty should be designing innovative teaching and learning approaches that are more effective and more efficient as well as adapting to a variety of preferred learning styles. The experiential in-class approach used in this study provides preliminary support for its effectiveness and efficiency in providing positive learning outcomes in life skills, key managerial behavior/knowledge and hospitality-specific content. Therefore, this experiential in-class approach should prove effective in traditionally lecture-only settings by (1) enhancing tacit learning with an experiential process, (2) providing a more interactive classroom environment, and (3) using hospitality-specific content as a vehicle to simultaneously enhance student success and address specific hospitality issues.

While effectiveness in hospitality education is dependent on a number of desired outputs and the types of available inputs, faculty need to make effectiveness a priority, with continual clarification of what they believe it means to be effective from both a class output assessment and a program output (what does an effective graduate of our program look like?). As with all experiential situations, experiences do not automatically equate to effective learning, and experiential learning does not apply to all situations. To gain genuine knowledge from an experience, certain abilities are required: (1) The learner must be willing to be actively involved in the experience, (2) the learner must be able to reflect on the experience, (3) the learner must possess and use analytical skills to conceptualize the experience, and (4) the learner must possess decision-making and problem- solving skills in order to use new ideas gained from experience (Kolb & Kolb, 2005). Faculty must assess these issues to balance learner abilities with process- and output expectations.

While the findings in this study appear to support the efficient and effective use of an experiential in-class method, the study has several limitations. First, the three intact class sections in this study varied substantially in size. As class size has been shown to be an important variable in educational research, this study supported the idea that student

learning is reduced in larger classes. Once the effect of class size was partialled out, the lack of differences between treatments in this study based on test scores could have been impacted by a variety of differences or other "field factors" that were not fully controlled for in this study. Second, the assessment of efficiency does not take into account additional time of the instructor in developing the experiential in-class approach versus a traditional lecture-and-discussion method. Also, while class time was used as a measure of student learning efficiency, students in the experiential in-class treatment may have had to spend more time reading textbook materials on groups, teamwork, and decision-making rather than passively listening to PowerPoint presentations on these topics. Finally, a weakness of this study is tied to earlier issues regarding assessment methods (De Vita, 2002). In other words, more tacit and process-related issues, such as teamwork, the team process and decision-making realism may not be adequately assessed using multiple-choice-type assessment methods.

Future research should address these limitations using additional controls, assessment methods and true experimental research design. For instance, there are some potential reasons why the results of this study could not unequivocally confirm our effectiveness assumption. First, class size and group size might be more important than originally presumed, serving as a distraction for students in larger class size and limiting a sense of connection for collaborative work in groups that are too large. Second, while the food-and-wine-pairing decision approach appeared effective and efficient, 25% of the teams in Treatment 1 had lower scores as a team than the average individual. Reasons for this finding include the following: (1) perhaps food-and-wine pairing is too complex and difficult a subject, (2) individual tastes or preferences are such that consensus is too difficult, or (3) students may be too intimidated when making food-and-wine selections in a group setting to achieve synergy.

While the authors acknowledge the limitations of the current study, articles such as this provide a useful dialogue for sharing differing approaches to hospitality education methods. Accordingly, a key contribution of this study is in continuing the on-going sharing of ideas that can be modified and improved upon by individual instructors to ultimately enhance student learning with greater efficiency and effectiveness, particularly across a diverse student population or sample. Therefore, future research should assess differences in learning outcomes using other experiential in-class methods and research designs to fully test the usefulness of experiential approaches in a curriculum. Future

research should also assess the value of this approach to enhance and reinforce other hospitality content. For instance, topics such as managing innovation, organizing a hospitality business plan, laying out and calculating profit-and-loss statements, devising service-quality models, planning menus, planning for crises, managing revenue, and many others could be utilized in an in-class, experiential format.

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