

EXPERIENTIAL LEARNING PROCESS: EXPLORING TEACHING AND LEARNING OF STRATEGIC MANAGEMENT FRAMEWORK THROUGH THE WINTER SURVIVAL EXERCISE

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This article examines an attempt to introduce experiential learning methods in a business strategy course. In organizational behavior and industrial/organizational psychology, experiential teaching methods have been so widely adopted that some authors have suggested dropping the distinction between experiential and traditional teaching. Although intuitively appealing, experiential methods have not yet become popular among professors teaching strategy to traditional-age undergraduate students. It seems that heavy reliance on case-based teaching has resulted in a lack of emphasis on experiential learning tools for strategic management. In this study, the Winter Survival Exercise framework to 97 traditional-age undergraduate strategic management students in three different sections over three semesters. Statistical analysis supported the efficacy of this teaching method. Implications for teaching business strategy using experiential methods as a complement to rather than a substitute for traditional case studies are discussed.

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Over the past few decades, the field of strategic management¹ has grown in complexity because the creation of the knowledge base within the field has grown tremendously. According to Fredrickson (1990), this is evident from increases in the (a) number of strategy-oriented journals, (b) number of articles related to strategy in established management journals, and (c) number of new strategic management Ph.D. programs. The increasing complexity and the rapid growth of the strategic management field have affected the teaching process in the classroom. One of these effects is increasingly intense and fast-paced courses. This complexity has also forced strategy professors to make a conscious effort to use all of their classroom "contact" time with students effectively, including the first class session, in an effort to ensure that the complex aspects of the subject are presented to students with sufficient allocation of time. Thomas (1999) expressed concerns shared by an increasing number of strategy professors with regard to the effective use of that first session, arguing that "(a) the initial classroom experience sets the 'tone' of the course for the semester, and (b) graduating seniors must appreciate—to the maximum extent possible—the need to break out of a passive listening mode in order to be contributing participants in an interactive class" (p. 428). We concur with Thomas's main point: Strategy faculty may be able to improve the effectiveness of their 1st day in the classroom by deploying experiential methods used widely in the field of organizational behavior and their counterparts in nonbusiness fields like psychology.

The purpose of this article is to explore the appropriateness and efficacy of experiential exercises for teaching business policy, specifically for undergraduate students. We found a relatively small number of exercises specific to strategic management and noticed a heavy reliance on case method when teaching undergraduate students. Due to these observations, we were prompted to explore methods that are complementary to case methods when

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dealing with these undergraduate students. Our article explores the use of an experiential exercise in an opening class session of a business policy course to introduce traditional-age undergraduate students to the strategic management framework.

Experiential Learning and Teaching Strategy

Students of business strategy—particularly traditional-age undergraduate students—typically do not have as much breadth or depth of real-world experience as their graduate adult counterparts. Thus, to be effective, learning and teaching methods for traditional-age undergraduates need to “bring to life” organizational contexts that the typical student lacks in personal experience. Experiential approaches to learning might help strategy faculty fill this experience gap. An experiential learning process applies experience as a vehicle for learning. Also, experiential learning focuses on the process of learning as opposed to simply the content being learned (Kolb, 1984). According to Cantor (1997), experiential teaching methods help students use a multisensory approach toward learning a particular subject matter. A student’s immersion into the subject matter through an experiential process provides a base for analysis and reflection that leads to learning. Experiential learning is thought to be the catalyst for an interactive process between learners. Based on his recent survey of the literature on experiential learning, Kayes (2002) concluded that there was significant value in continuing to use and refine “experience-based approaches to management learning” (p. 137).

Similarly, Johnson and Johnson (1982) have postulated that experiential learning has the potential to affect a learner in three different ways: changing cognitive structures, altering attitudes, and expanding portfolios of skills. Experiential learning has the potential to change the cognitive structures used by the learner by expanding the range of a student’s life experience, thus allowing students to create their own new mental models (Argyris, 1990). Experiential learning also has the potential to alter learners’ attitudes. This is especially true when discrepancies arise between learners’ preconceptions and their experience. Finally, experiential learning has the potential to expand the learner’s portfolios of skills because students have greater confidence in the knowledge they have discovered through an active process as learners rather than the knowledge that is presented to them when they are treated as passive students. The use of experiential learning was developed and fostered by Lewin and his social psychologist associates as early as 1935 (Johnson & Johnson, 1982).

Based on the foregoing discussion, it would seem that experiential learning methods would be highly used in an undergraduate strategy course. The strategy field, however, has heavily relied on a combination of texts and cases rather than experiential methods (Fowler & Scott, 1996). This field has not used experiential exercises to deliver its knowledge base, as has been done in many other subfields in management, such as organization theory and organizational behavior (cf. Baker & Paulson, 1995; D. D. Bowen, Lewicki, Hall, & Hall, 1997). In these subfields, experiential exercises have become highly visible contributors to knowledge delivery in college classrooms and organizational seminars (Human Synergistics/Center for Applied Research, Inc., 2002a). In organizational behavior, experiential methods have been adopted on such a widespread basis that some authors (e.g., D. B. Bowen, 1980) have called for dropping the distinction between experiential and traditional teaching.

A primary reason for the use of cases as a major tool in teaching the field of strategy is due to the established practice of using cases at the Harvard Business School as early as 1950. The discussions about pros and cons of teaching business policy courses through cases at the Harvard Business School evolved into instructions for policy teachers by the mid-1950s (see McNair, 1954, for a detailed discussion). According to Ghemawat (1998), strategy students in the mid-1950s were taught to use cases in building their analytical skills concerning the match between a firm's policies and its competitive situation. As the strategy field developed, an emphasis on case-based instruction took root. The experiential approach, which allows for the use of personal experiences of the students, could have been applied as either an alternative or a complementary teaching tool to the case-based approach of delivering strategy concepts to the students. We posit that this emphasis on teaching strategy through a case-based approach might have discouraged experiential approaches in teaching strategy.

Argyris and Schön's (1974) work posits that assumptions lead to forming filters that prevent different ways of thinking from entering a person's consciousness. The lack of existing materials for using experiential exercises to teach strategy suggests that experiential methods may have been "filtered out" due to assumptions about learning held by strategy faculty. Few experiential exercises exist that are specifically designed for strategy course content (Human Synergistics/Center for Applied Research, Inc., 2002b). Strategy texts that promote and offer "experiential exercises," upon closer inspection, are in fact relying on using case methods.

To illustrate this point, consider a book of exercises by Edge (1995), which was created to teach strategic management. This book requires students to

use role-playing to analyze specific business cases (which have already occurred) through a strategic management framework. Thus, the exercises in this book still require the use of predetermined strategy-specific content. In a more recent book, Siciliano and Gopinath (2002) include many reflective exercises to introduce strategy concepts but ground those exercises in a series of mini cases. In a similar fashion, Kemper (1989) includes an “experiential component” in a text’s accompanying study guide. This study guide also relies extensively on mini cases as the vehicle to illustrate strategic management concepts and processes. In all of these books, the mini cases do not meet the three criteria necessary for experiential learning listed by Johnson and Johnson (1982). Based on the authors’ combined experience in teaching strategy, it is felt that the above-referenced resources represent a “high-water mark” in terms of experiential material for teaching the subject.

Other authors (Fowler & Scott, 1996) raised concerns with regard to the pervasive use of cases to teach strategic management. As they are customarily used, most cases do not involve interaction among groups—a necessity in decision-making processes in present-day strategic issues (Hitt, Ireland, & Hoskisson, 1997). Fowler and Scott’s concerns centered on (a) limited availability of data and information about cases, (b) many cases being outdated, and (c) the limited ability of cases to expose students to all possible aspects of the strategic management framework.

In summary, case-based teaching strategy for undergraduates may be ripe for a reexamination. The need to explore new supplemental teaching methods in business policy is primarily due to the growth of the field. The strategy field has become more complex, making effective use of classroom time increasingly important, and although cases help traditional-age undergraduate students with the assessment of many situations, cases alone are insufficient in bridging the gap between these students’ knowledge, experience, and their preparation for the real world.

Thus, in this article, we explore the use of experiential exercises in undergraduate strategy classrooms—exercises that may complement the predominant case method for learning strategic issues. In particular, we consider that the experiential exercises might expose traditional-age undergraduate students to the strategic management framework. This would allow for reflective interaction where students could learn from each other’s shared, lived experience—even if that experience was in the classroom. In the following section, we explore how a well-established exercise in another subfield of management might be used to achieve a successful introduction of the strategic management framework to full-time traditional-age undergraduate students and, in the process, make the use of the first class session more effective.

The Winter Survival Exercise

The Winter Survival Exercise (WSE) was originally developed primarily as a teaching tool for understanding the dynamics of team building, group decision making, and problem solving. In some instances, this exercise was used to understand the critical implications of communication in the team-building process (Baker & Paulson, 1995; Johnson & Johnson, 1982). A version of the WSE used by Johnson and Johnson, including instructions for participants and debriefing notes, is available from the authors.

PURPOSE AND USE OF THE WSE

Prior to the classes described in this study, two of the authors had experimented with the WSE (as described in Johnson & Johnson, 1982, pp. 111-116; some examples of similar survival exercises can be found in D. D. Bowen et al., 1997; Gordon, 1995; Lafferty, 1974; and Lewicki, Bowen, Hall, & Hall, 1988). The authors' initial use of the WSE was to teach team concepts to incoming MBA students in an orientation program. After facilitating the MBA orientation several times, the authors reached the conclusion that the WSE might have potential for teaching the basic concepts of strategic management to traditional-age undergraduates if modifications were made to the debriefing of the exercise.

When considering the usage of the WSE in an undergraduate strategy course, the authors desired to shift the learning objectives of the exercise from group functioning and decision making to an introduction to the strategy management process. One of the authors used the WSE in the first session of a strategy class as a pilot study. The pilot was assessed in terms of (a) the viability of an exercise like the WSE in teaching strategic management concepts, and (b) the efficacy of teaching strategy using this method. Based on the experience in the pilot, the authors further refocused the debriefing of the exercise and used it in the first class session of traditional-age undergraduate strategic management courses in three subsequent semesters.

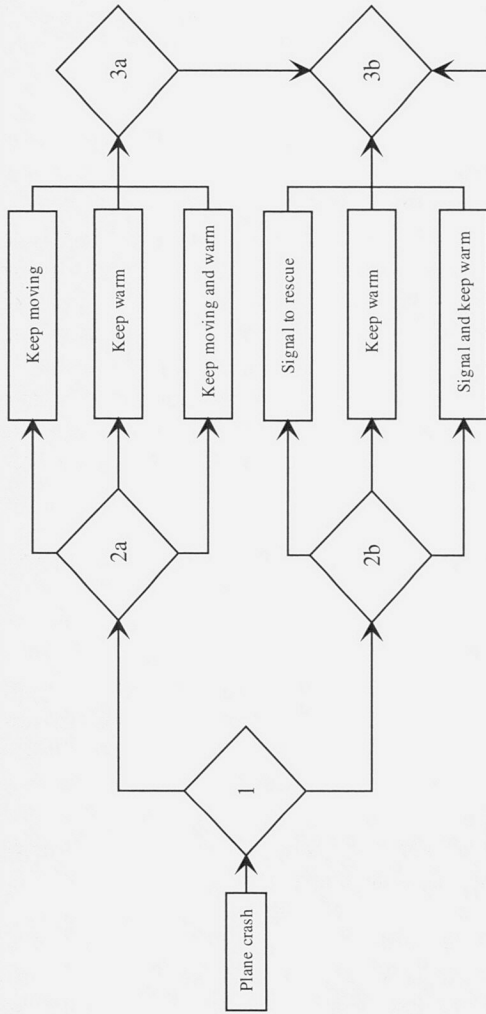
CONDUCTING THE EXERCISE

In its original form, the WSE is designed to provide the learner with a basic understanding of group problem solving (Johnson & Johnson, 1982). First, participants read the exercise, in which they are put in the situation of having survived a midwinter crash-landing of a plane in Minnesota. Participants are asked to individually rank 15 items in order of importance, a reflective component of experiential exercise.

Once all participants have completed their individual rankings, they are placed in groups of 5 to 9 people (please note that for our purpose we used groups of 3 to 5 people) and are asked to rank the same 15 items in order of importance as a group—this is the shared experience portion of the exercise. Once the group rankings are completed, the exercise allows participants to compare their individual outcomes with group outcomes, relative to an expert's set of decision choices. A lower score indicates decisions that are closer to those provided by the expert. After groups have completed the exercise, the facilitator leads a discussion that focuses on effective group problem solving, team building, and communication, thus altering participants' cognitive structures (Johnson & Johnson, 1982). As originally intended, this exercise is very useful in illustrating the importance of effective team processes, by comparing individual and group scores. In most instances, individual scores tend to be higher than the team scores. Similarly, the mean individual score tends to be higher than the average team score (a lower score indicates better decisions). No special materials are required for students beyond the brief written information outlining the situation, a pencil, and moveable chairs. The complete exercise takes about 60 to 90 minutes.

Revised debriefing. The authors decided to explore the effectiveness of the exercise—as revised—to teach the concepts of strategic management. The plane crash situation presents both the individual and group with a complex problem involving strategy building. This process generally parallels the method of strategy building in organizations because—based on the choice of different strategies and resources—there are various outcomes in the exercise. Analytically, individuals and groups are faced with a problem that requires them to think through their actions and apply a basic model for building strategy. Because participants' decision options in the WSE are made within the context of earlier decisions, the exercise parallels “path dependency” in strategy building (cf. Madhok, 1997). In addition, the decision steps in the WSE provide an illustration of strategy concepts, at both an individual and group level. Both path dependency and the relationship of strategy concepts to the WSE are depicted in Figure 1.

Figure 1 depicts three different decision points. The first decision point focuses on understanding the mission and goals as well as availability of strategic choices. The second decision concerns evaluation of external threats and opportunities as well as the evaluation of internal strengths and weaknesses. The final decision point illustrates the mechanisms of strategy implementation and strategy control. Using this approach, students were introduced to the five major strategy concepts during the debriefing session as a



Decision points 3a & 3b

Group and individuals rankings compared	
S4 Strategy implementation	
S5 Strategy evaluation and control	

Decision points 2a & 2b

Individual	Group
S3 SWOT External and internal evaluation	

Decision point 1

Individual	Group
S1 Mission, goals, values, and priorities	
S2 Strategic choice	

Topics covered during debriefing

Figure 1: Winter Survival Exercise and Strategic Management—Debriefing

NOTE: S = semester; SWOT = strengths, weaknesses, opportunities, threats.

prelude to the main body of the strategic management course. These are missions, goals, values, and principles; strategic choice and strategy formulation; external and internal analysis; strategy implementation; and strategy evaluation and control. During the debriefing, the authors provided a brief lecture about the strategic management framework, explaining to students the process of strategic decision making. As the instructors explained the links between decision processes and strategic management, students quickly realized that they understood (albeit implicitly) the strategic management framework.

Mission, goals, priorities, and values. The scenario of a winter crash landing in Minnesota calls for students (first individually and then later as a group) to agree on what their group's mission/goals and objectives were, either to stay put and be found or move and find their destination. The relative importance of the 15 items in the exercise changes drastically depending on this decision of "whether to go towards the destination or to stay put," as indicated by the expert (cf. Rutstrum, 1973). According to him, "to attempt to walk out would mean almost certain death from freezing and exhaustion."

Thus, this decision point establishes a frame of reference for the group as it makes subsequent choices. As a first step in the strategic management process, establishing an organization's mission and objectives are critical actions. Once established, the mission guides future decisions.

Strategy formulation and strategic options/choice. The groups must make a diagnosis about their current situation including both the external environment and their group's internal capabilities. This diagnostic work lays the foundation for the formulation of a set of strategic options. Potential options might include hiking out of the plane crash area together, deciding to stay put for signaling purposes, or deciding to stay put for physical survival purposes.

The above-mentioned options are not meant to be exhaustive but to illustrate the possible strategies that might be generated. These alternatives can be weighed and analytically evaluated by each group to form the basis for a final choice of strategy (note that selection of a different strategy would likely reflect differently on the scores of each group).

Strengths Weaknesses Opportunities Threats (SWOT)—environmental/internal assessments. Having formulated the objective "to go or to stay" and selecting a strategic option, the groups might then decide to process the external information (in terms of opportunities and threats) and assess their own internal capabilities (in terms of strengths and weaknesses). For example,

external scanning would include gathering and processing data concerning (but not limited to) such variables as the cold weather, the surrounding woods, the time of year, time of day, depth of the snow, and the height of the surrounding mountains. The groups must also then begin to gather and process data about their own internal strengths and capabilities, as well as their potential weaknesses. These characteristics of the situation might include (but not be limited to) the extent of injuries suffered by those who survived the crash, the physical strength of the survivors, the amount of food they possess, and an inventory of their other belongings and available equipment. Implicit in the assessment and implementation processes is the assumptions made and used by the participants about the data and factors available to them.

Strategy implementation. Implementation of the chosen strategy requires allocation of resources. In the WSE, groups are asked to individually rank 15 items at the crash site in order of importance and then to achieve a consensus on the rankings. Groups invariably use the strategy that they have developed and chosen as the basis for determining which items are most important. For instance, if a group chooses to leave the crash site, they are more likely to consider the compass a more critical resource than others. Alternately, if a group chooses to stay and remain warm, they are more likely to consider the cigarette lighter a more important resource as it can help generate a fire. Finally, if a group chooses to stay and hopes to signal potential rescue groups, the gun would increase in importance, as gunshots could be used as a signaling device that would assist a search team looking for the crash survivors.

Strategy evaluation. Formulation and implementation of strategy cannot be effective in the absence of evaluation that determines the appropriateness of the strategy that has been chosen (Drucker, 1966). In this exercise, the evaluation is part of the debriefing. During this debriefing, the groups' and the individuals' rankings of the 15 items are compared with those of a wilderness expert. The process represents a closing of the feedback loop in the strategic management process. This forms the basis for in-class discussion of (a) the use of both qualitative and quantitative measures of performance to maximize objectives, (b) the concept of intended and unintended consequences, and (c) the potential need to take corrective action. In addition, the process of comparing their rankings with an expert's rankings serves the purpose of connecting their objectives and goals with the strategic management process. According to Figure 1, debriefing allows the students control because they are then able to receive feedback as to the likelihood of finishing their

mission. Also, comparison and benchmarking with an expert is an important part of the evaluation process. These ideas are critical aspects of striving for the fit between different components of the strategy management process.

Concomitant outcome (process issues). The value of having both individuals and groups complete the exercise does not go unnoticed by students. The reflective process of comparing individual rankings with the group's rankings provides an opportunity to introduce the idea of the criticality of individual contributions to make a strategy successful. Authors in the strategy field indicate that effective strategic management in organizations requires participation from all levels of the organization and acknowledges that a group approach toward formulating strategy is critical (Hitt et al., 1997; Jauch & Glueck, 1988; Thompson & Strickland, 1995).

The debriefing session provides an opportunity for discussion of these strategy/content-related issues to take place. Also, the debriefing related to the scoring mechanism reinforces the value of a group approach toward decision making and problem solving and provides concrete measurement in the form of scores to reinforce this point. For instance, a comparison of individual scores versus group scores can demonstrate the overall effectiveness of groups—for better or for worse—in the quality of decision making. In addition, both groups and individuals learn the importance and value of leadership and communication in the decision-making exercise, and the value of building into a decision the means to gauge its effectiveness (Drucker, 1966). Thus, instructors have an opportunity to emphasize the role of people in the strategic management process, consistent with strategy researchers (e.g., Floyd & Wooldridge, 1992, 1994) who have argued that human dimension plays a critical role in successful formulation and implementation of strategies. It is possible that the WSE can illustrate how human interaction and decision processes can be further incorporated into not only the strategic management literature but also the strategy classroom.

Research Questions:

Efficacy of the WSE in a Strategy Course

As stated earlier, the WSE was originally developed to facilitate team building and communication skills. In this study, we sought to evaluate the efficacy of the WSE with respect to introducing strategic management concepts in an undergraduate strategy course. To accomplish this task, we developed the following research questions:

TABLE 1
Participants

	<i>Semester 1</i>	<i>Semester 2</i>	<i>Semester 3</i>	<i>Total</i>
Gender				
Male	16	25	19	60
Female	15	10	12	37
Major				
Accounting	4	3	5	12
Information systems	3	0	2	5
Finance	9	3	10	22
Marketing	11	24	10	45
Management	4	5	4	13
Total	31	35	31	97

Research Question 1: Does the WSE help students learn strategy concepts?

Research Question 2: Does the successive use of the WSE (i.e., repeated practice) to teach strategy concepts correlate with improved effectiveness on the part of the instructor as observed through the student responses of the WSE test?

Research Question 3: Does the WSE facilitate greater learning of some strategy concepts more than other concepts and, if so, which ones?

Method

SAMPLE

Data were collected over three semesters from 97 full-time traditional-age undergraduate students in a business policy class. The course was taught in an Association to Advance Collegiate Schools of Business-accredited business school in a selective Catholic liberal arts university with a relatively homogeneous undergraduate student body with respect to race and ethnicity. Participants' gender and major are reported in Table 1; in general, the sample was relatively homogeneous because the groups of students studied for this article were all senior students who had completed their core business curriculum. Semesters 1, 2, and 3 had 31, 35, and 31 students, respectively.

Each class of students was introduced to the WSE on the 1st day of the semester by one of the authors (the same author taught all three sections). Approximately an hour and a half of class time in a 2½-hour class was devoted to the exercise. Students were asked to form groups of 3 to 5 students with classmates of their own choice, and the exercise was conducted as originally designed. The debriefing session was conducted as described in an ear-

lier section, wherein the basic concepts of strategic management process as illustrated in the WSE were discussed (see Figure 1).

MEASURES

To test the efficacy of the revised WSE debriefing (i.e., with the focus on the strategy framework) and the relationship between the WSE and student learning, the instructor included one question in the students' midterm examination. This essay question asked students to explicate their knowledge and understanding of the WSE as an illustration of the strategic management process. All 97 students over three semesters responded by answering this essay question, describing the knowledge they gained about the strategic management process as a result of their participation in the WSE during the first class session. To be fair to the students, the midterm grades of students were calculated without considering the answers from the survival exercise question.

DATA COLLECTION

The instructor did not discuss or talk about the WSE in class after the first session. Students were not reminded to study the material on the WSE when the midterm examination was discussed. This procedure provides an extremely conservative evaluation of the efficacy of the WSE. The question asked to students during the midterm examination was very much a "top of mind" response that would indicate some level of learning. Thus, any positive results can be reasonably interpreted as indicative of learning from the first session's experiential exercise.

FRAMING OF THE TEST

The test was an essay-based question: "Based on your experience with the WSE on the opening day of the class, please elaborate on the concepts of strategic management and how the WSE helped you to understand these concepts."

The instructor read the answers provided by each student and found that students could identify underlying concepts of strategic management, even though traditional strategy vocabulary was not used by the students. For example, at the time when the test was conducted, the students were not exposed to the theoretical framework of implementation and evaluation of strategy, yet these concepts were presented by students in their answers using nontechnical language. Thus, the test question focused on demonstrating and understanding the concepts rather than the content-related memory-based answers of

the debriefing of the WSE. For our analysis, we planned to use only the answers of students who were present on the 1st day. During one semester, one student was absent, so her answers were excluded in our analysis.

CONTENT ANALYSIS

The students' essay answers were examined; a content analysis was performed to assess students' learning with regard to the five major components of strategic management. As a first step, we made a list of possible strategy concepts that could be created by students based on the debriefing of the WSE and its link to the strategy framework as shown in Figure 1. This framework is consistent with the prevailing literature and models in the field of strategic management and, as such, any instructor in the field replicating our exercise would be able to draw up a list very quickly. The second step involved an independent review of student answers by two coauthors, one of them being the instructor who administered the WSE to the students. The next step involved both authors arriving at a consensus about the classification of the content. We used a pseudo-Delphi approach to codify the answers and ensure a high level of interrater reliability. There was very little difference in the independent classification of both authors. Whenever differences arose (less than 10%), the authors reasoned with each other about their specific classification of an answer. Subsequently, they went back to the student's answer and examined the answer together to reach a consensus.

The content analysis included the recording of multiple responses in each student essay. The responses by students were tabulated to assess the number of times a particular topic was indicated as learned by a student. Tables 2 and 3 provide these data for all five topics across three semesters as well as a cumulative count. The data thus collected were further analyzed using the tests of proportions described in the next section.

Results

DOES THE WSE HELP STUDENTS LEARN STRATEGY CONCEPTS?

Across three semesters, answers from all the students were classified as either having (a) learned at least one strategic management concept through the WSE, or (b) learned no strategic management concept through the WSE. Thus, the null and alternative hypotheses² for Research Question 1 were as follows:

TABLE 2
Specific Strategy Topics Reported as Learned by Students in Three Semesters and Cumulative Count

<i>Strategy Topics as Reported "Learned" in Midterm Exam</i>	<i># of Students Reporting Topic as Learned</i>			<i>Total Participants (N = 97) Over Three Semesters</i>
	<i>Semester 1 (n = 31)</i>	<i>Semester 2 (n = 35)</i>	<i>Semester 3 (n = 31)</i>	
Mission, goals, priorities, and values	9 (29)	16 (35)	18 (58.1)	43 (41.7)
Strategy formulation	11 (35.5)	20 (57.1)	22 (71.0)	53 (51.4)
SWOT analysis (strengths, weaknesses, opportunities, and threats)	7 (22.6)	8 (22.9)	9 (29.0)	24 (23.3)
Strategy implementation	10 (32.3)	15 (42.9)	13 (41.9)	38 (36.9)
Strategy evaluation	9 (29)	13 (37.1)	14 (45.2)	36 (34.9)

NOTE: Percentages are in parentheses. Students were allowed to list more than one topic as learned; hence, the percentages do not total 100%.

TABLE 3
Number of Strategy Topics Reported as Learned by Students in Three Semesters and Cumulative Count

# of Topics Students Reported Learned	# of Participants			Total Over Three Semesters (N = 97)
	Semester 1 (n = 31)	Semester 2 (n = 35)	Semester 3 (n = 31)	
0 topics reported learned	10 (32.3)	9 (25.7)	3 (9.7)	22 (22.7)
1 topic reported learned	8 (25.8)	4 (11.4)	5 (16.1)	17 (17.5)
2 topics reported learned	5 (16.1)	7 (20.0)	6 (19.4)	18 (18.6)
3 topics reported learned	5 (16.1)	7 (20.0)	10 (32.3)	22 (22.7)
4 topics reported learned	2 (6.5)	7 (20.0)	6 (19.4)	15 (15.5)
All 5 topics learned	1 (3.2)	1 (2.9)	1 (3.2)	3 (3.1)
Total # of students	31 (100)	35 (100)	31 (100)	97 (100)

NOTE: Percentages are in parentheses.

Hypothesis 1₀: The proportion of students reporting having learned at least one concept is less than or equal to .5.

Hypothesis 1₁: The proportion of students reporting having learned at least one concept is greater than .5.

The “test of proportions” was used to evaluate the data. Based on this analysis, the proportion of students reporting no learning was .23 ($p_1 = 22/97$) and the proportion of students reporting having learned at least one concept was .77 ($p_2 = 75/97$). The Z value for observed proportions was 5.32 ($\alpha = .05$), which was greater than the critical value 1.645 ($p < .001$). Thus, we reject the null hypothesis and find support for the alternative hypothesis that students do learn strategic management concepts through the WSE.

DOES THE INSTRUCTOR'S TEACHING IMPROVE FROM REPEATED USES OF THE WSE TO TEACH STRATEGY CONCEPTS?

In the use or evaluation of any pedagogical tool, it is important to consider whether the instructor develops a knowledge base that allows the instructor to be more effective and efficient over successive uses of those mechanisms. This research question was examined from two perspectives: (a) if there was an improved effectiveness present from one semester to the subsequent semester, and (b) if there was a presence of effectiveness demonstrated by the instructor over a longer period of time (three semesters). Because data were available for three semesters, three tests of proportion were conducted. Comparisons between Semesters 1 and 2, as well as between Semesters 2 and 3, were conducted to assess an immediate improvement in effectiveness, whereas comparisons between Semesters 1 and 3 were conducted to assess the improved effectiveness over repeated uses of the WSE. Thus, the null hypotheses for Research Question 2 are as follows:

Hypothesis 2a. The proportion of strategy concepts learned by students in semester 2 is less than or equal to the proportion of strategy concepts learned by students in Semester 1.

Hypothesis 2b. The proportion of strategy concepts learned by students in semester 3 is less than or equal to the proportion of strategy concepts learned by students in Semester 2.

Hypothesis 2c. The proportion of strategy concepts learned by students in semester 3 is less than or equal to the proportion of strategy concepts learned by students in Semester 1.

We calculated the proportions of the total number of strategy concepts reported as learned by all students to the total maximum number of strategy

TABLE 4
Results Concerning Teacher Effectiveness Over Time

<i>Semesters Compared</i>	<i>Null Hypothesis for Research Question 2</i>	<i>Alternative Hypothesis for Research Question 2</i>	<i>Z Score</i>	<i>Significance at p ≤ .05</i>
1 and 2	$p_2 \leq p_1$	$p_2 > p_1$	0.94	not significant
2 and 3	$p_3 \leq p_2$	$p_3 > p_2$	0.65	not significant
1 and 3	$p_3 \leq p_1$	$p_3 > p_1$	1.64	significant at $p = .05$

NOTE: Where $p_i = \frac{\text{Total number of concepts reported by all students as learned in semester } i}{\text{Number of students enrolled in semester } i \times 5 \text{ (number of strategy concepts)}}$

concepts that a class could report as learned (i.e., number of students in a class multiplied by five strategy concepts). The test of proportions was used to evaluate the data. For each semester, the proportions of total reported concepts to total possible concepts were $p_1 = .30$, $p_2 = .41$, and $p_3 = .49$, respectively for Semesters 1, 2, and 3. The scores of Z values for each comparison are given in Table 4. Based on these results,³ we found no evidence of a semester-to-semester improvement in the effectiveness measure. However, perhaps more important, there is a likely demonstration of improved effectiveness over a longer period of time as evidenced in the comparison between Semester 1 and Semester 3.

DOES THE WSE FACILITATE GREATER LEARNING OF SOME STRATEGY CONCEPTS MORE THAN OTHER CONCEPTS AND, IF SO, WHICH ONES?

The WSE may have greater efficacy in terms of students' learning of some strategy concepts over other concepts. The five strategy concepts are indicated in Table 1. The raw data in Tables 2 and 3 indicated that strategy formulation was by far the most reported concept, followed by mission, goals, values, and principles (MGPV). Also the same table indicates that students reported SWOT analysis the least times as a topic learned through this exercise. We, therefore, propose to test the most reported concept—Strategy Formulation—with the remaining four concepts. We also wanted to test if the least reported topic was significantly less learned in comparison to the second most learned topic (i.e., MGPV). Thus, the null hypotheses for Research Question 3 were as follows:



TABLE 5
Results of Research Question 3: Does the WSE Facilitate Greater Learning of Some Strategy Concepts More Than Other Concepts and, if so, Which Ones?

Compared Concepts ^a	Null (and Alternative) Hypothesis for Research Question 3	Z Score	Significance at $p \leq .05$
Formulation & implementation	$P_{\text{form}} = P_{\text{imp}} (P_{\text{form}} \neq P_{\text{imp}})$	2.30	$p < .008$
Formulation & evaluation	$P_{\text{form}} = P_{\text{eval}} (P_{\text{form}} \neq P_{\text{eval}})$	2.15	$p < .016$
Formulation & MGPV	$P_{\text{form}} = P_{\text{mgpv}} (P_{\text{form}} \neq P_{\text{mgpv}})$	1.07	not significant
Formulation & SWOT	$P_{\text{form}} = P_{\text{swot}} (P_{\text{form}} \neq P_{\text{swot}})$	3.54	$p < .001$
MGPV & SWOT	$P_{\text{mgpv}} = P_{\text{swot}} (P_{\text{mgpv}} \neq P_{\text{swot}})$	2.31	$p < .002$

NOTE: MGPV = missions, goals, values, and principles; SWOT = strengths, weaknesses, opportunities, and threats. Where $p_i = \frac{\text{Number of times students reported } i \text{ concept in semester 3}}{\text{Number of students enrolled in semester 3}}$

a. The most reported concept—Strategy Formulation—is compared with the remaining four concepts, and the least reported topic—SWOT—is compared with the second most learned topic (i.e., MGPV).

Hypothesis 3a. The proportion of students learning strategy formulation is equal to the proportion of students learning strategy implementation.

Hypothesis 3b. The proportion of students learning strategy formulation is equal to the proportion of students learning strategy evaluation.

Hypothesis 3c. The proportion of students learning strategy formulation is equal to the proportion of students learning MGPV.

Hypothesis 3d. The proportion of students learning strategy formulation is equal to the proportion of students learning SWOT.

Hypothesis 3e. The proportion of students learning MGPV is equal to the proportion of students learning SWOT.

We calculated the proportion of the total number of times students report a strategy concept in Semester 3 to the total number of students enrolled in Semester 3. Only Semester 3 data were used as a control for the learning curve effect found in Research Question 2. The average proportions were compared, as indicated in Table 5.

To examine for statistical differences that may exist in reported learning by students among the five strategy concepts, we conducted a pairwise comparison of proportions. The results provide support for the idea that the WSE contributed to very strong understanding of the concepts of both MGPV and strategy formulation relative to other strategy concepts.

Discussion

The findings of this study provide evidence to indicate that the use of the WSE with a modified debriefing was an effective method for introducing traditional-age undergraduate students to strategic management concepts. The concepts related to MGPV, strategy formulation, and strategy implementation were notions that clearly were learned on the 1st day of class through the use of the WSE. Furthermore, as reflected in their midterm examination essays, students learned (a) concepts including strategy evaluation and control, and (b) SWOT analysis as a result of participating in the exercise on the 1st day of the strategy class. The findings of this study suggest that the WSE, as adapted, may have significant value as a method for introducing students to strategic management concepts. The exercise appears to facilitate students' learning in terms of all five critical components of the strategic management field. However, we must emphasize that our conclusion is not that faculty should use experiential exercises in lieu of cases to teach strategy. We disagree with Locke's (2002) conclusion that "the case method, *by itself*, is useless" (p. 199). Instead, we suggest that teaching of strategy management through cases may be complemented by the addition of a few experiential exercises. Strategy faculty might find that exercises such as the one presented here could be useful in introducing concepts or sections of a course to traditional-age undergraduate students who lack a substantial body of work experience. By using cases, experiential methods, and other forms of pedagogy, faculty are more likely to create a learning environment in the classroom that appeals to a broader range of learning styles and hence may support a broader range of students. Thus, we suggest that strategy faculty appropriately use both inductive (e.g., cases) and deductive (e.g., experience-based) approaches to learning when teaching strategy management to undergraduate students.

As with any study, these results should be interpreted with some caution based on the study's limitations. The first of these limitations is whether these results are generalizable based on one instructor's choices in teaching or, perhaps more accurately, teaching emphasis in the debriefing of the exercise. Second, although students were asked to respond specifically on their midterm examination, one cannot definitively say that a cumulative learning effect was not at work. By the date of the midterm examination, students had been exposed to approximately 7 weeks of strategic management material. This exposure to the subject matter might explain student responses about early parts of the strategy framework (i.e., MGPV and strategy formulation). It does not, however, account for student responses on issues of strategy

implementation or evaluation. Both of these were concepts explored by the instructor in the debriefing session of the WSE, but students were not yet introduced to this material by the time the midterm examination was administered. Finally, the efficacy of the proposed exercise is not compared with a control group. This limitation was, however, remedied to some extent by deploying some conservative tests of proportions. For example, while testing Hypothesis 1, the alternative hypotheses were to be supported only if the proportion of students who learned a concept was greater than .5.

Despite these caveats, the results revealed that students assimilated the basic concepts of the strategic management process. Other teachers of strategic management might create, apply, or adapt experiential exercises for use in strategy classrooms, and it is likely to be effective. Further research could replicate this study and test that argument in other settings, both in terms of institutions and faculty members teaching the course. Other further research might explore the relative efficacy of different but similar survival exercises in terms of students' learning of strategy concepts. In addition, if different teaching methods are more effective at helping students learn different strategy concepts, there is potentially valuable research to be conducted exploring the value of using multiple teaching methods in the same course.

This adaptation of a survival exercise contributes to improvement in the teaching of strategic management in at least two distinct ways. First, we have begun to address the lack of experiential exercises in the field of strategic management and, further, the evaluation of the efficacy of such exercises for the strategy field. Second, our experiment offers a way to use the 1st day of an academic semester in a highly engaging way while acquainting students with the elements of a strategic management framework. In addition, the findings of this study suggest that strategy faculty consider experiential exercises as part of their pedagogy—in combination with other teaching methods—to maximize the effective use of limited classroom time, particularly in the first class session.

Instructors interested in using the WSE in their first session of a strategy course for traditional-age undergraduate students need to address some common problems and issues. As we conducted this exercise across three semesters, we discovered some issues that needed to be overcome to enable the smooth operation of the exercise in addition to learning from the exercise. These are as follows:

1. Make sure that the students forming groups are from different majors. This allows an instructor to create cross-disciplinary teams to validate the concept that business policy is an integrative course.

2. Consistent with the original instruction of conducting any survival exercise, if a student is found to be familiar with such an exercise (surviving in the desert, the NASA exercise, etc.), then that student needs to be assigned as an observer rather than a participant. This student reports the observations of the group dynamics during the debriefing session.
3. The students, in our study, were seniors who had completed all the core courses prior to enrolling in this class. If an instructor has access to student e-mails, it would be advisable to send an advance e-mail to students notifying them that attendance in the first class is critical.
4. We were careful to present answer keys in PowerPoint format so that no hard copies were circulated to the students. This would ensure the integrity of the exercise if an instructor wishes to use it repeatedly.
5. The exercise and debriefing process works well in a 2 hour 40 minute class and, at the very least, can be conducted in a 1 hour 15 minute class. Less time than this is inadequate for debriefing, which is where the idea of strategy management framework is introduced.

In a recent article, Burke and Moore (2003) suggest that the question of student motivation should be considered as paramount prior to any discussion concerning instructional effectiveness. Furthermore, they suggest that instructors must adjust their teaching methods across differing subject material and student levels. Our findings in this regard suggest that faculty teaching strategy to traditional-age undergraduate students must also be aware of such issues. This is because faculty teaching strategy management to traditional-age undergraduate students face a number of challenges; chief among these challenges is students' lack of experience with business decision making. With a variety of teaching methods, including a combination of experiential exercises, cases, lectures, simulations, and others, the typical strategy classroom of tomorrow may look very different from that of today. The time may have come for greater use of experiential exercises in the strategy classroom and for research exploring the potential efficacy of those exercises.

Notes

1. For convenience, throughout this article, the terms *strategic management* and *business policy* are used interchangeably.

2. Please note that for the rest of the article, the alternative hypotheses are not listed. They are only reported in Tables 4 and 5.

3. It should be noted that the approach we have taken to measure the instructor effectiveness might have some drawbacks. Our approach suggests that if each new set of students identifies more strategy concepts over time and semesters, then it is likely that the teacher has benefited from the repeated use of the WSE in teaching strategy concepts. It may be possible that repeated applications of the WSE by the instructor set up the conditions for practice-based learning. For

example, in our experience, we found that the debriefing became more elaborate in later semesters as compared with early semesters. Second, we also learned to better manage the group processes relative to the creation of teams. However, the limitation of our approach is that improved scores by new sets of students in later semesters could be an outcome of informal student channels about the use of WSE in the introductory class. Hence, we wish to interpret results from this test very cautiously. Ideally, there should have been a direct test of effectiveness of the instructor; however, because we lack such data, we settled for the indirect approach. We thank both anonymous reviewers for identifying this limitation in the interpretation of our work.

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