# Learning to Lead at 5,267 feet: An Empirical Study of Outdoor Management Training and MBA Students' Leadership Development

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## Abstract

This study examined the leadership development of MBA students enrolled in an Organizational Behavior course. Students enrolled in either an in-class section or a section that included an intensive, outdoor training component called Leadership on the Edge. Results from Kouzes and Posner's Leadership Practices Inventory (2003) showed that students in the outdoor training section demonstrated greater improvements in leadership practices over the course of the semester. Reflective comments from students in the outdoor section indicated it was a transformative personal experience that is unlikely to be emulated in a classroom. Implications for leadership educators are discussed.

## Introduction

There is well-documented evidence that leadership skills are important for MBA students. In the Graduate Management Admission Council's 2009 study, 3,392 MBA graduates rated *interpersonal skills* essential to effective leadership (see Whetton & Cameron, 2007) as the most valuable skills they use in their current job. This skill set was the most valuable regardless of organizational level (entry, mid, senior or executive). Employers and recruiters share this opinion. Employers

rated interpersonal skills and leadership attributes as the first and third most important criteria for selecting and hiring MBAs (Graduate Management Admission Council, 2007). Recruiters reported *soft skills* such as leadership are the most desirable traits in MBA graduates (Rubin & Dierdorff, 2009).

Business schools, especially MBA programs, are called upon to develop the specific competencies associated with leadership and managerial roles (The Association to Advance Collegiate Schools of Business, 2010). However, universities have been criticized for not preparing their graduates for the challenges associated with leadership positions (Ready, Vicere, & White, 1993; Rubin & Dierdorff, 2009). Specifically, the people-focused competencies reported as most critical by practicing managers received the least amount of required coverage in MBA programs (Rubin & Dierdorff, 2009). Interpersonal skills, leadership, and communication have been identified as the, "least effective components of business curricula" (Management Education Task Force, 2002, p. 19). Rynes, Trank, Lawson, and Iles (2003) refer to this deficiency as management education's "legitimacy crisis" (p. 1).

These criticisms are decades old. Mintzberg noted in 1975 that most business schools emphasized cognitive learning over behavioral skills, despite their importance in day to day management and leadership. Porter and McKibbin's (1988) landmark book on management education argued there was too heavy an emphasis on quantitative and analytical techniques, and too little an emphasis on leadership, interpersonal, and communication skills. They concluded that "business schools, for all their changes in the last 25 years, have not made progress in developing students' leadership and interpersonal skills" (p. 47). This lack of emphasis has taken its toll on MBA programs. Pellet (2007) noted that enthusiasm for MBA programs has declined and doubts linger about whether business schools have been effective at preparing MBAs for career success.

We examined one method for improving an MBA curriculum's emphasis on leadership education – Outdoor Management Training (OMT). While OMT has grown in popularity, several authors (e.g., Henderson, 2004; Judge, 2005; Shooter, 2010) have called for more empirical research on the outcomes of these trainings. Our purpose was to analyze the impact of OMT on the leadership development of MBA students using a quasi-experimental design. Students in two sections of an organizational behavior course wherein one that experienced an intensive outdoor leadership experience and one that did not reported their frequencies of leadership behaviors both before and after the course to see whether any differences emerged.

# Literature Review

## Leadership Development in the MBA

There is general agreement that MBA programs must develop behavioral competencies that underlie successful leadership and management, but there are questions about the pedagogical approaches that improve these skills (Buller, McEvoy, & Cragun, 1995; McEvoy & Cragun, 1986-1987). Mitchell and Poutiatine (2002) argued that "leadership education programs may need to consider pedagogical approaches outside, or peripheral to the traditional approaches of graduate academia" (p. 180). Others noted that managerial skill training requires an experiential component (e.g., Malick & Stumpf, 1998; Whetton & Cameron, 2007) because this approach is more effective at translating learning into practice (Gardner, 1990).

One experiential, non-traditional method is Outdoor Management Training (OMT), also referred to as outdoor experiential training, outdoor challenge courses, and adventure education. OMT places individuals and groups in challenging, unpredictable, but safe outdoor environments for learning, risk-taking, decision-making, and skill development (Wagner, Baldwin, & Roland, 1994). Participants reflect on their experiences, with the goal of transferring the skills learned back to the workplace (Williams, Graham, & Baker, 2003). This technique is designed to develop participants' leadership, communication, problem solving, trust, conflict resolution, and team building skills (Buller, Cragun, & McEvoy, 1991; Dufrene, Sharbrough, Clipson, & McCall, 1999).

While these programs have increased in popularity in both work and educational settings, there is little empirical research on their value and effectiveness (Gills & Speelman, 2008). However, the few empirical analyses there are have shown promising results. OMT has been linked to increased self-efficacy, self-esteem, group effectiveness as well as team-building (Gills & Speelman), increased student learning and decreased interpersonal conflict (Elkin, 1991), and increased supervisory ratings of leadership ability (Judge, 2005).

Several MBA programs have integrated OMT into their curricula (Useem, 2001; Judge, 2005). The Wharton School hosts an annual outdoor expedition where their executive MBAs learn about leadership. The students visit the Himalayas and ascend to the base camp of Mt. Everest. This unique approach was developed in response to corporate recruiters who wanted their newly minted MBAs to be effective leaders. The University of Tennessee also provides their executive MBA students with a climb in a local mountain range (Judge, 2005).

## The Leadership Challenge

Kouzes and Posner's (2007a) model of leadership – The Leadership Challenge – provided the framework for this study. The model consists of five practices of exemplary leadership: (a) Model the Way, (b) Inspire a Shared Vision, (c) Challenge the Process, (d) Enable Others to Act, and (e) Encourage the Heart. The authors argued these practices are universal and learnable. People can choose to improve their leadership abilities by engaging in the actions that form each practice. The Leadership Practices Inventory (LPI) (2003) assesses how frequently a person engages in these leadership behaviors.

The practices indicate the important aspects of leadership. Model the Way encourages leaders to discern guiding principles and role model desired behaviors. Inspire a Shared Vision directs leaders to create a vision for their organization and enlist the help of others. Challenge the Process requires leaders to take risks and challenge the status quo. Enable Others to Act is about building trust and empowering followers. Encourage the Heart inspires leaders to lift followers' spirits by celebrating contributions (Kouzes & Posner, 2007a).

Studies across a variety of industries, settings, and cultures have found these leadership practices are associated with managerial and organizational effectiveness. For example, Kouzes and Posner (2002) found that scores on the LPI can be used to differentiate between low, middle, and high performing managers. Those who scored highly on the practices tended to be more effective managers. In another study Roi (2006) found that senior executives who received high ratings on the LPI by other executives led companies with greater net income growth and stock price growth. The differences were substantial. Over a 10-year period net income rose 841% in organizations where the leader frequently engaged in the leadership practices. Net income fell 49% in companies with weak implementation of the practices.

Kouzes and Posner's model was a good fit to measure the leadership growth of students in our MBA program. The broad, learnable practices provide students with direction on what to improve, and the LPI can track if improvement occurred. The behaviors have been proven effective in a wide variety of contexts; more frequently engaging in the leadership practices will help MBA students be more effective regardless of their intended industry or setting.

# Method

## Participants

Thirty-three MBA students at one Pennsylvania State University institution enrolled in two sections of Organizational Behavior participated in the study. Twelve students (seven women, five men) enrolled in Section 1 which included our outdoor leadership development program referred to as Leadership on the Edge (LOTE). Twenty-one students (16 men, five women) enrolled in Section 2, the traditional section of the course offering. The majority of students (approximately 80%) across both sections were first-year MBA students. The average ages of the students were similar (26.58 in Section 1; 26.38 in Section 2). A *t*-test revealed there were no significant differences between years of leadership experience between the two sections (df = 31, $t = 0.50$, $p = .62$).

## Design and Procedures

One section of the students participated in LOTE; the second section served as a control group in a quasi-experimental design. Prior to any course experiences we administered the pretest to both groups during the first week of the semester. Students completed the posttest 14 weeks later during the final week of the semester.

The same instructor taught both sections of the course. The coverage, sequence, and depth of content was nearly identical for both sections, except the LOTE group received an extensive debriefing following LOTE and had a common frame of reference from which to reflect on the concepts of organizational behavior. Both sections were highly experiential. Kolb's (1984) Experiential Learning Theory (ELT) was utilized to integrate experienced-based learning with the coursework. In this model knowledge is created through the transformation of experience. This occurs via a process where the learner engages in four different modes of learning – experiencing, reflecting, thinking, and finally acting (Kolb & Kolb, 2005). The only intentional difference was the inclusion of the LOTE experience.

LOTE took place over Labor Day Weekend. Students camped at Baxter State Park and ascended Mt. Katahdin. The students in the LOTE section participated in a High Ropes training course on our campus prior to the experience to prepare them for the arduous climbing and to develop cohesion. We were assisted by staff members from the QUEST program on campus – an outdoor adventure and leadership development program that serves students and the general public.

The students were responsible for all aspects of the trip. They bought food, cooked meals, cleaned the campsite, organized their equipment, and decided what and how much to bring on the ascent. The course instructor and QUEST guides acted as consultants. We answered questions if asked, but intervened only when necessary for safety.

Mt. Katahdin is an imposing 5,300 foot granite peak that rises above an expansive, undulating landscape of forests and lakes. The summit is a trail head of the Appalachian Trail that extends from Maine to Georgia. Most hikers heading for the summit of Mt. Katahdin choose the more moderate trails. We ascended the more extreme Knife Edge Ridge Trail, a name that amply warns would-be-hikers of what is to come.

LOTE followed Gardner's (1990) recommendations for out-of-classroom leadership development programs. First, there were opportunities for "students to experience the shared responsibility of group action, and to learn the skills required to make a group function effectively" (p. 168). Students worked together to successfully reach the summit, and reflective comments indicated that they learned how to effectively mobilize a group of people to achieve a challenging goal. Students commented that they felt the satisfaction of not only reaching the summit themselves, but from helping teammates to reach the summit. Second, the program provided "opportunities for the students to test their judgment under pressure…in the fluid, swiftly changing circumstances characteristic of action" (p. 168). The students faced decisions that had a sense of urgency throughout the climb, such as which path to take, when and how much rest the team needed, what pace to set, how to deal with inclement weather or a tired or injured teammate. Decisions were made in real time and the outcomes had important consequences.

Third, students were "exposed to the untidy world, where decisions must be made with inadequate information and the soundest argument does not always win, where problems rarely get fully solved, or, once solved, surface anew in another form" (Gardner, 1990, p. 168). LOTE provided students with an *untidy world*. Gardner characterized the majority of real-life experiences for potential leaders as trivial. LOTE, however, is far from trivial. We selected the more difficult route to present a challenging environment. Mt. Katahdin, with its unpredictable weather, difficult terrain, and dramatic exposure provided an excellent venue for exposing students to an unpredictable and unforgiving environment that had to be taken seriously. Since 1963, 19 people have died trying to climb Mt. Katahdin. There are no textbook solutions to climbing a mountain. Each student had to balance their own needs and the needs of the team, cope with physical and emotional

fatigue, the ever-changing weather, the fear of heights, the deadline of darkness, and the unknown.

## Instrument

We were granted permission to collect data using Kouzes and Posner's LPI, Self instrument (2003). The LPI consists of 30 leadership behavior statements, with six items loading on each of the five practices. Responses are marked on a 10-point scale ranging from *almost never* to *almost always*.

The LPI is a thoroughly tested instrument. On the self-version, internal reliability scores for the practices are between .70 and .90 (Kouzes & Posner, 2009). Over varying periods scores show significant test-retest reliability at levels greater than .91 (Kouzes & Posner, 2002). Factor analyses consistently revealed the instrument contains five factors and the items within each factor correspond more among themselves than they do with the other factors (Kouzes & Posner, 2002). Validity evaluations have shown the scores are correlated with other important variables. For example, employees who believed their leaders frequently engaged in the practices had more pride in their workplace, stronger motivation, greater team spirit, more trust in management, and were more interested in staying with the organization (Kouzes & Posner, 2007b).

In general, demographics such as age, education level, country, gender, and ethnicity did not contribute to the frequency with which people engaged in the practices (Kouzes & Posner, 2009). It appears the leadership practices are independent of demographic variables in a variety of populations. If this held true in this study, it increases the chances that observed differences were the result of the variables under investigation.

## Data Analysis

We submitted scores on the leadership practices to an ANOVA with repeated measures. Course section assignment (e.g., LOTE versus classroom only) served as the between-subjects variable; course (14 weeks, pretest versus posttest) served as the within-subjects variable. We also conducted post-hoc analyses for the gender demographic variable. We hypothesized the LOTE section would increase their use of the practices from the beginning to the end of the course to a greater extent than the classroom only group.

## Results

Data screening assessed assumptions related to the intended tests. Data from four students who did not complete both the pretest and posttest (1 from LOTE section; 3 from classroom section) were excluded from analysis. Two participants' scores were unusually low on Encourage the Heart pretest. We deemed the values to be legitimate. We investigated normality using numerical and visual methods. There were no marked violations. Levene's Test demonstrated the groups had approximately equal variances for all practices with the exception of Encourage the Heart pretest. The procedure is generally robust to this assumption. Our samples were unbalanced. This may have exaggerated the effects of assumption violations and affected the accurate interpretation of the results.

Table 1 presents the section cell means (on a 60-point scale) and standard deviations for each leadership practice across the pre- and posttests. The two lowest pretest and posttest means were Inspire a Shared Vision and Challenge the Process, while the highest was Enable Others to Act. The pattern was consistent with Kouzes and Posner's (2009) report of the average scores for 74,294 participants. Means of the classroom section were greater than means of the LOTE section for both the pretests and posttests across all five leadership practices. Means of both groups increased from pretest to posttest; the magnitudes of these increases varied.

Table 1: *Section Means and Standard Deviations*

| | Pretest | | | | Posttest | | | |
|---|---|---|---|---|---|---|---|---|
| Leadership Practice | LOTE[a] | | Classroom[b] | | LOTE[a] | | Classroom[b] | |
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Model the Way | 44.50 | 6.35 | 47.57 | 5.65 | 46.50 | 7.28 | 48.81 | 5.50 |
| Inspire a Shared Vision | 37.17 | 8.23 | 45.38 | 9.50 | 42.25 | 6.70 | 45.91 | 6.47 |
| Challenge the Process | 40.25 | 6.48 | 45.43 | 8.21 | 46.17 | 7.36 | 46.33 | 6.78 |
| Enable Others to Act | 47.58 | 5.92 | 48.48 | 5.43 | 50.00 | 4.59 | 51.33 | 3.81 |
| Encourage the Heart | 41.83 | 12.41 | 48.14 | 5.11 | 47.00 | 7.54 | 49.81 | 5.17 |

[a]n = 12; [b]n = 21

The ANOVA summaries for each leadership practice are presented in Table 2. We chose to report differences that approached significance ($p < .10$) due to the smaller sample sizes and exploratory nature of the study. Figures 1-5 depict the section cell means for each practice. A summary of the findings follows.

Table 2: *Summary of Repeated Measures ANOVA for the Leadership Practices*

| Source | *SS* | *df* | *MS* | *F* |
|---|---|---|---|---|
| **Model the Way** | | | | |
| Between-Subjects | | | | |
| Course Section | 110.55 | 1 | 110.55 | 1.78 |
| Error | 1930.48 | 31 | 62.27 | |
| Within-Subjects | | | | |
| Course | 40.04 | 1 | 40.04 | 3.65$^{+}$ |
| Course X Course Section | 2.22 | 1 | 2.22 | 0.20 |
| Error | 339.91 | 31 | 10.97 | |
| **Inspire a Shared Vision** | | | | |
| Between-Subjects | | | | |
| Course Section | 537.88 | 1 | 537.88 | 5.38* |
| Error | 3098.60 | 31 | 99.96 | |
| Within-Subjects | | | | |
| Course | 120.04 | 1 | 120.04 | 4.71* |
| Course X Course Section | 79.38 | 1 | 79.38 | 3.11$^{+}$ |
| Error | 743.44 | 31 | 4.71 | |
| **Challenge the Process** | | | | |
| Between-Subjects | | | | |
| Course Section | 109.09 | 1 | 109.09 | 1.14 |
| Error | 2978.36 | 31 | 96.08 | |
| Within-Subjects | | | | |
| Course | 177.67 | 1 | 177.67 | 15.95*** |
| Course X Course Section | 95.91 | 1 | 95.91 | 8.61** |
| Error | 345.36 | 31 | 11.14 | |
| **Enable Others to Act** | | | | |
| Between-Subjects | | | | |
| Course Section | 18.92 | 1 | 18.92 | 0.55 |
| Error | 1070.08 | 31 | 34.52 | |
| Within-Subjects | | | | |
| Course | 106.20 | 1 | 106.20 | 7.71** |
| Course X Course Section | 0.74 | 1 | 0.74 | 0.05 |
| Error | 426.74 | 31 | 13.77 | |
| **Encourage the Heart** | | | | |
| Between-Subjects | | | | |
| Course Section | 317.51 | 1 | 317.51 | 3.81$^{+}$ |
| Error | 2586.31 | 31 | 83.43 | |
| Within-Subjects | | | | |
| Course | 178.29 | 1 | 178.29 | 6.99* |
| Course X Course Section | 46.77 | 1 | 46.77 | 1.83 |
| Error | 791.17 | 31 | 25.52 | |

*$p < .05$ **$p < .01$ ***$p < .001$ $^{+}p < .10$

We found no significant ($p$<.05) differences in Model the Way for the main effect of course section or the interaction of course and course section. Course approached significance, $F(1, 31) = 3.65$, $p < .10$. This result shows that students in both course sections increased their scores between the beginning and end of the course. Note the increasing slope of the line for both sections in Figure 1.

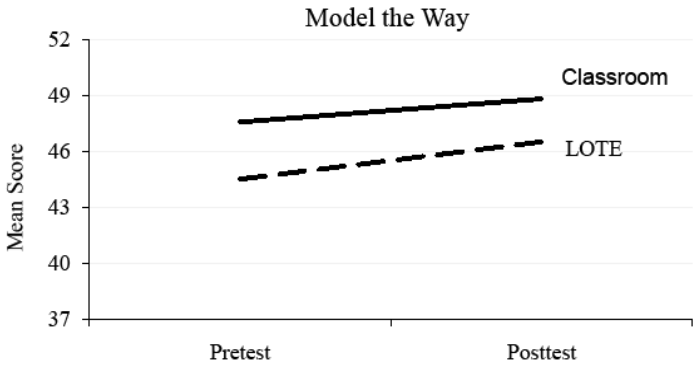


*Figure 1: Plot of Model the Way Mean Scores by Section*

We found significant differences in Inspire a Shared Vision for course section, $F(1, 31) = 5.38$, $p < .05$, and course, $F(1, 31) = 4.71$, $p < .05$. The interaction of course and course section approached significance, $F(1, 31) = 3.11$, $p < .10$. Classroom section students averaged a higher score than the LOTE section. The significant increase in scores from the beginning of the course to the end differed by section as only the LOTE section showed a significant increase. Note the sharper increase in the LOTE scores compared to the classroom scores in Figure 2.

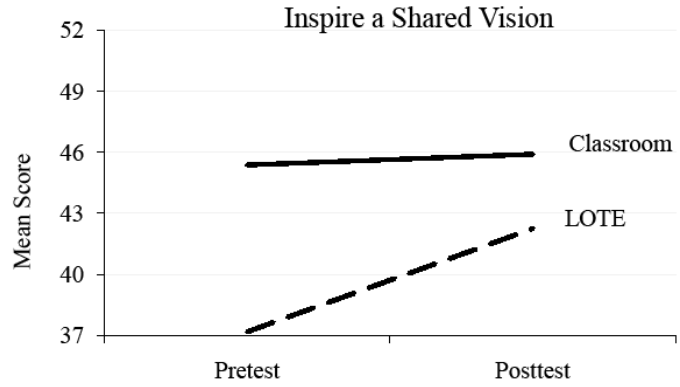


*Figure 2: Plot of Inspire a Shared Vision Mean Scores by Section*

We found significant differences in Challenge the Process for course, $F(1, 31) = 15.95$, $p < .001$, and for the interaction of course and course section, $F(1, 31) = 8.61$, $p < .01$. Course section was not significant. Only students in the LOTE section showed a significant increase on Challenge the Process. Note the sharp increase in the LOTE scores compared to the flatter increase for classroom scores in Figure 3.

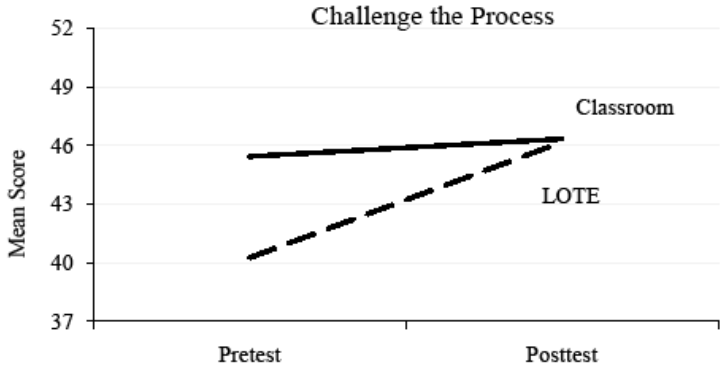


*Figure 3: Plot of Challenge the Process Mean Scores by Section*

We found a significant difference in Enable Others to Act for course, $F(1, 31) = 7.71$, $p < .01$, but not for course section or the interaction effect. Students in both course sections increased their scores between the beginning and end of the course. Notice the similarity in the increasing slopes in Figure 4.

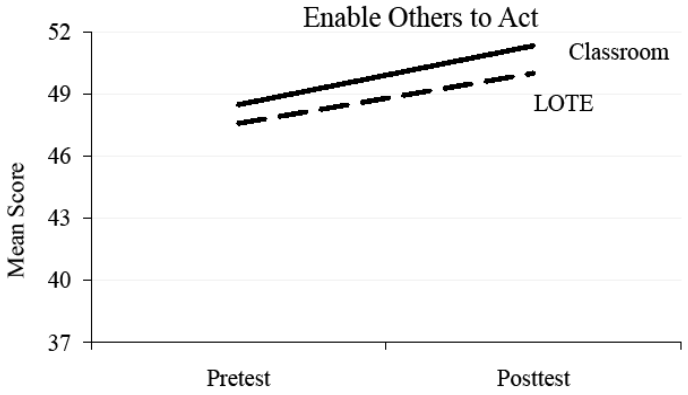


*Figure 4: Plot of Enable Others to Act Mean Scores by Section*

We found a significant difference in Encourage the Heart for course, $F(1, 31) = 6.99$, $p < .05$. The interaction was not significant. Course section, $F(1, 31) = 3.81$, $p < .10$, approached significance. Again, students in both course sections increased their scores between the beginning and end of the course. Notice the increasing slope of both groups in Figure 5.

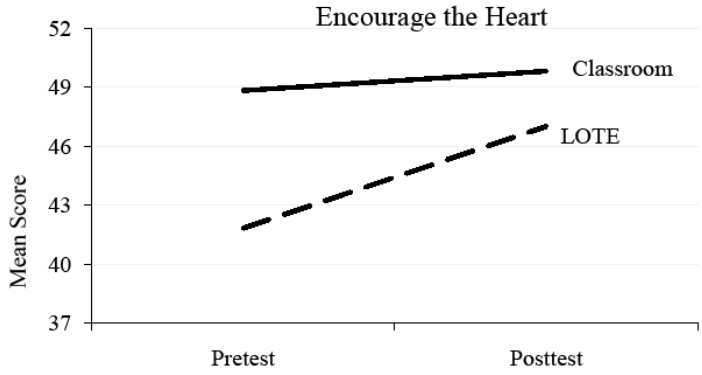


*Figure 5: Plot of Encourage the Heart Mean Scores by Section*

## Post Hoc Analysis

We investigated gender via an ANOVA with repeated measures because of the noticeable differences in the composition of the two sections. The results demonstrated females scored higher on Enable Others to Act, $F(1, 31) = 6.02$, $p < .05$. This finding was consistent with Kouzes and Posner's 2009 report about

gender. They found that females scored themselves higher on three practices, including Enable Others to Act. Pretest to posttest was significant for all five practices, but no interaction effects were found. Both males and females increased between the pretest and posttest. These findings indicate that gender was not a factor affecting leadership practices for the sample, providing increased evidence that the course or the course section were the sources of difference.

## Individual Question Analysis

After finding the course or section likely contributed to students increasing the frequency of leadership behaviors, we were interested in which specific leadership behaviors changed and which course format led to these increase. We examined the specific items on the LPI using paired-difference *t*-tests categorized by course section. Table 3 organizes the findings by items that had significant or approaching significance increases, and whether the increases were observed for the classroom group, the LOTE group, or both groups.

Students in the LOTE section increased their frequency of more leadership behaviors than the classroom students (11 to 5). Generally, the magnitude of the mean change was also larger for LOTE students. Examining the individual behaviors where changes occurred adds insight to the potential benefits of both classroom formats. The classroom enabled students to, among other things, develop stronger cooperative relationships, help other people grow in their skills, and more actively listen to diverse points of view. The LOTE experience enabled students to, among others, increase their ability to speak with conviction, set a stronger personal example, to let others know of confidence in their abilities, and experiment and take risks. We believe these behaviors are consistent with expectations for the respective experiences.

Table 3: *Item Mean Change and Paired t-test Summary*

| # | Question | Classroom[a] | | LOTE[b] | |
|---|---|---|---|---|---|
| | | *M* Δ | *t* | *M* Δ | *t* |
| 1. | I set a personal example of what I expect of others. | | | 1.25 | 2.53* |
| 4. | I develop cooperative relationships among the people I work with. | .57 | 3.01** | | |
| 7. | I describe a compelling image of what our future could be like. | | | 1.08 | 2.11$^{+}$ |
| 8. | I challenge people to try out new and innovative ways to do their work. | .71 | 1.80$^{+}$ | 1.33 | 1.85$^{+}$ |
| 9. | I actively listen to diverse points of view. | 1.00 | 2.07$^{+}$ | | |
| 10. | I make it a point to let people know about my confidence in their abilities. | | | 1.50 | 2.91* |
| 15. | I make sure that people are creatively rewarded for their contributions to the success of our projects. | | | 1.25 | 1.99$^{+}$ |
| 19. | I support the decisions that people make on their own. | | | .58 | 2.03$^{+}$ |
| 20. | I publicly recognize people who exemplify commitment to shared values. | .62 | 1.78$^{+}$ | .92 | 1.89$^{+}$ |
| 22. | I paint the big picture of what we aspire to accomplish. | | | .83 | 1.89$^{+}$ |
| 27. | I speak with genuine conviction about the higher meaning and purpose of our work. | | | 1.33 | 3.22** |
| 28. | I experiment and take risks, even when there is a chance of failure. | | | 1.33 | 2.60* |
| 29. | I ensure that people grow in their jobs by learning new skills and developing themselves. | 1.00 | 2.45* | .83 | 3.08* |

*$p < .05$ **$p < .01$ $^{+}p < .10$; [a]$df = 20$ [b]$df = 11$

## Findings and Implications

Students in the LOTE section demonstrated greater improvements in leadership practices over the course of the semester. Those in the LOTE section improved on all five leadership practices (Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart). Students in the non-LOTE section improved on three of the five leadership practices, Model the Way, Encourage the Heart, and Enable Others to Act. Students in the LOTE section also increased on 11 of the specific leadership practice items, as compared to five for the classroom section.

The most noteworthy findings of the study are the interactions between course and course section for Inspire a Shared Vision and Challenge the Process inasmuch as these practices consistently have the lowest scores among the five (Kouzes & Posner, 2009). In this study, students in the LOTE section demonstrated much sharper increases in these leadership practices. The type of experience provided by the mountain climb provided an opportunity to develop these arguably more challenging skills.

We have both anecdotal and statistical evidence that outdoor training, as compared to a classroom-only experience, provided a more effective venue for leadership development for our MBA students. Results showed that there is additional value derived from using OMT to develop the behaviors that contribute to leadership effectiveness. In addition, feedback from students was overwhelmingly positive and emphasized insights, self-awareness, and personal growth that is unlikely to occur in a classroom setting. For example, one student commented, "*Although at first I felt that I needed to do what was best for me, I later realized that it was what the group needed that was the most important. My usual need to be a leader at the head of the pack took a back seat to helping people out. The funny thing is that I was ten times the leader being the last person up the mountain than I ever would have been in front."*

Rynes et al. (2003) noted a great deal of behavioral research in management education suffers from weak design, lacking control groups, pretest and posttest designs, and relevant dependent variables. Given the quasi-experimental design of our study, we are confident that the differences in leadership development between the two sections can be attributed to the LOTE experience.

These findings have consequential implications for administrators and faculty. As educators it is our responsibility to help students to develop the knowledge, skills, and abilities necessary for effective leadership. Criticism over the past three decades indicates that we are failing to do that. This study found added benefits of outdoor leadership training above and beyond that of a classroom-only experience. Those wishing to implement effective approaches to leadership development need to consider more experiential education approaches.

Experiential approaches, like LOTE, are also consistent with the needs of 21st century learners. These students learn best with integrative, complex, hands-on experiences that are "meaningful, real, and relevant" (Wisniewski, 2010, p. 67). If we wish to both engage and transform our students into effective leaders, we will need to go beyond the boundaries of the traditional classroom. Climbing a mountain like Mt. Katahdin is a big undertaking and requires expertise not

typically found in most academic settings. However, LOTE grew out of our more pedestrian outdoor training approaches such as rope activities (see Rohnke & Butler, 1995). These activities are an excellent place to start, are easy for anyone to use, and many adhere to the recommendations made by Gardner (1990) for effective outdoor leadership training.

## Limitations

We were limited by our ability to take more students on the climb. This resulted in less balanced and smaller sample sizes than desired. Second, we could not use random assignment because students self-selected their course format. Perhaps this choice influenced the findings. Third, we assessed the leadership behaviors using a pretest and posttest. Leadership growth probably follows nonlinear growth trajectories; this design did not allow us to examine these (Ployhart, Holtz, & Bliese, 2002). Fourth, as in any situation where time is introduced as a factor (in this case 14 weeks), there was a chance that some other life circumstance confounded the effects on the leadership practices. Finally, we examined one course during one semester. The findings should not be extrapolated beyond this context.

## Future Research

A key measure of success of OMT programs is the degree to which students are able to transfer the leadership skills learned in academic settings to their professional and personal lives. This kind of research requires a longitudinal examination of placement rates, promotions, salaries as well as other professional elements. We plan to stay in touch with our students so that we can examine the long-term benefits of LOTE. Additionally, we can externally validate our findings with assessments from the students' managers.

We are able to say that OMT contributed to the development of leadership practices in our students. We are less certain about the specific factors of the outdoor training that led to these changes. Discovering the specific mechanisms through which these changes occur is critical. A better understanding of the process of OMT will make leadership training more effective in the future.

## Conclusion

Leadership is a critical skill that impacts organizational outcomes in many ways. Leaders can affect multiple organizational areas including productivity (Kahai, Sosik, & Avolio, 1997), turnover (Jones, Kantak, Futrell, & Johnston, (1996),

performance (Roi, 2006), and business success (Management Education Task Force, 2002). Business education must take on the responsibility of developing the leadership capabilities of its students. This study shed light on the efficacy of outdoor training as an approach that can improve these capabilities.

We statistically demonstrated the value of OMT as a tool for leadership development. Over the course of a 14-week academic semester, MBA students who participated in OMT showed greater improvements in leadership practices than those in a classroom only setting. The additional value derived from such a program justifies the time, effort, and expense required for such an event.

One of the most respected management educators, Henry Mintzberg (cited in Reingold, 2000, p. 286), argued that, "You can't create a leader in the classroom." We tend to agree with this assertion and feel confident saying that OMT programs such as our LOTE are superior to traditional classroom approaches for leadership development.

Does LOTE really have a measurable impact on future leaders? We are encouraged by these initial results and the feedback from the students in the course. Reflections demonstrate that a significant degree of learning has occurred, and that this learning can be transferred outside of the classroom. This is exemplified by the following student comment: "*The change in environment from the office to the mountain was key to discovering the power to overcoming fear. In another environment (work, personal) I could have more easily gotten away with bending to uncertainty or doubt, but on the mountain I had to work through it. The personal and team management skills we used on the mountain are the same skills that can be applied to other areas of life, work, personal relationships, community relationships, and family. As managers, we are meant to be masters at planning, organizing, implementing, and control, yet so many managers lack these skills outside the office. Katahdin showed me that management skills apply to every aspect of life."*

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