STUDENT MOTIVATIONS AND LEARNING OBJECTIVES BEFORE AND AFTER A LEVEL ONE AVALANCHE COURSE

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ABSTRACT: This study seeks to define student motivations and cognitive outcomes for an AIARE Level 1 avalanche course in order to explore how educational intervention relates to perceptions of risk as well as to the larger social context of the backcountry experience. In the spring of 2016, 20 semi-structured pre- and post-course interviews were performed with AIARE Level 1 students from course providers in Alaska, Colorado, Oregon, and Utah. Narrative similarities in the data indicate that students emerged from the course with both increased confidence and uncertainty in their abilities, a desire to gain more experience, and an ambiguous relationship to risk. While this study does not measure the effectiveness of the AIARE Level 1 course, findings indicate that further research regarding avalanche education outcomes in relation to social context and cognition of risk is necessary.

KEYWORDS: avalanche education, risk perception, experiential learning

1. INTRODUCTION

Avalanche accidents are complex events that involve snowpack conditions, weather, and terrain features. Accident avoidance requires a similarly complex skillset including interpreting the local avalanche forecast, snowpack evaluation, terrain navigation, and sound decision making practices. Acquiring these skills is a long term endeavor and can overwhelm the backcountry novice. Avalanche education provides tools to enable safer use of backcountry terrain with the anticipation that students can gain an initial foothold in this skill set. However, previous research has suggested that people with increased avalanche education are more likely to be killed by avalanches (McCammon, 2000).

Recent studies in risk management indicate that risk perception has little to do with the actual, objective attributes of a particular hazard (Rippl, 2002) and that “experience, beliefs and expectations” play a more significant role in framing an individual’s cognition of risk (McIvor & Paton, 2007). In other words, risk cannot be known nor managed from a solely objective framework. This suggests that risk perception and management within complex environments is connected to social processes and pre-existing normative value structures.

The idiom “a little learning is a dangerous thing” suggests that a small amount of knowledge can lead to unanticipated outcomes. McCammon (2000) suggests as much when he draws the conclusion that accidents are associated with avalanche education. There is, therefore, a pressing need to address the concern that avalanche education results in greater exposure, and no net reduction in risk to the participant. Findings in related fields suggest that effective outcomes are more likely to emerge from a praxis based approach that engages both practice and social theory.

To gain greater awareness of the context in which avalanche education occurs, this study asks participants to discuss a battery of questions along three main themes:

• Motivation
• Learning objectives
• Perception of risk

2. METHODS

The instruments used to collect data in this study were an electronic survey and two semi-structured interviews given before and after the AIARE Level 1 course. All procedures were approved by the Montana State University Human Subjects Review panel. AIARE provided a course list of instructors offering the Level 1 course. Each instructor was
contacted; five responded and provided their registration lists. The invitation to participate in the study was then extended to 231 students. 48 responded to the initial survey tool, which collected demographic information (age, gender, education level, employment status, marital status, type of backcountry travel, self-reported ability, and avalanche education level). 26 students agreed to participate in the subsequent pre-course interview, and 20 students persisted until the post-course interview, which was performed at least two weeks after the course. This sample is purposive, and the study employs a qualitative cross-sectional and longitudinal design.

The pre- and post-course interviews were conducted over the phone and were recorded with permission. Interviews were semi-structured following a conversational pattern in order to gain ecologically valid data. The pre-course interviews averaged 30 minutes and the post-course interviews averaged 45 minutes. The pre-course interview addressed participants’ motivation for taking the course, expected learning objectives, as well as current touring practices. Participants were asked to prioritize the concepts, skills or tools they hoped to learn and to describe what they expected to be able to do in the backcountry that they could not previously do. The pre-course interview also encompassed questions associated with risk perception and risk tolerance, and participants were asked to rate their concern regarding experiencing an accident in the backcountry. The post-course interview revisited themes of motivation, learning objectives, and risk tolerance and also asked participants to describe how the course affected their perception of the backcountry and subsequent touring habits.

Initial data was reviewed for narrative themes, and data will be transcribed and coded for further analysis.

3. RESULTS

3.1 Pre-course interview

The pre-course interviews established a baseline with respect to participants’ perception of the backcountry and their course expectations. Preliminary themes from the pre-course interview set indicate that participants were motivated to take the course by a desire to gain confidence and participate in decision making. It emerged that participants’ current touring practices, if applicable, were based on the knowledge of more experienced friends or larger groups. Learning objectives were centered on gaining terrain management and snow pack assessment skills. Notably, discussing risk tolerance and perception and the overall risk environment of the backcountry proved to be difficult for participants. Participants struggled to both assess and articulate their understanding of the concepts therein. Participants were aware of the risk environment due in part to their knowledge of local accidents or news coverage of backcountry fatalities, but it was unclear how participants operationalized this knowledge in relation to their behavior. Some participants explained their risk tolerance in relation to their skill level or expertise and others related it to a generalized philosophy.

3.2 Post-course interview

The post-course interviews revealed that changes had taken place in relation to participants’ cognition of the backcountry and self-assessed skill level. Students reported increased confidence in their ability to plan and execute a backcountry trip and to act as a contributing member of a decision making team. Participants felt they gained skills in terms of terrain management, snow pack assessment, and research strategies, such as utilizing a local avalanche forecast. Most reported that the experiential aspects of the course, such as tour planning and execution and companion rescue, were valuable to their skill development. Participants were unanimously satisfied with their instructors, although some reported being frustrated that there was not a succinct or clear answer to their questions, especially in relation to snow science. Most participants toured infrequently or not at all after the course. Only three participants toured four or more times in the weeks after the Level 1 course. Those who toured more frequently reported that they experienced discomfort with touring partners’ behavior but felt unable to address the issue directly. Those who did not tour or toured infrequently reported a high degree of confidence in their decision making abilities and their ability to participate in a tour. In terms of risk perception, this, again, proved difficult for participants to articulate. Many participants explained risk as an inevitability or a stats game. Some participants equated increased knowledge and experience with increased risk tolerance. A few participants felt that the decision making framework they gained from the course prepared them to manage risk safely, while others reported being surprised by the level of complexity in managing backcountry risk. Overall, participants appear to have emerged from the Level 1 with a basic skill set, more confi-
dence or awareness, but some level of concern regarding their ability to apply what they learned. Only a few participants directly commented on gaining skills in managing “human factors” or group dynamics.

4. DISCUSSION

Participants displayed a range of motivations for taking the course. These included meeting people who tour in the region, playing a larger role in group decisions, and gaining confidence. Participants seemed to view the course as both an instrument to develop skills as well as an opportunity to engage with the larger backcountry community. Ultimately, participants emerged from the course both confident and uncertain. Many students reported wanting to gain more experience before continuing to tour, which begs the question, how can and should that experience be gained? In addition, participants entered and emerged from the Level 1 course with a complex and relatively uncultivated relationship to risk management. When pressed to define their risk tolerance or concern about experiencing an accident in the backcountry, discussion veered into a reflection on lifestyle choices. In this way, risk tolerance among participants was expressed more as a social construction derived from a values-based assessment rather than as an objective measure of the probabilistic danger present in a single event.

Recent work in adventure education and applied psychology warn of the danger of self-efficacy as a learning outcome. Self-efficacy is expressed as the extent of an individual’s belief in his or her own ability. In the backcountry, self-efficacy may enhance feelings of control over the environment. While self-efficacy is a common and positive educational goal, within high risk environments it can lead to acceptance of risk beyond the student’s realization (Schumann et al., 2014). This may be the underlying source of McCammon’s (2000) findings. We suggest that further investigation with respect to changes in risk perception may be a useful stream of research and that avalanche education effectiveness is perhaps tied to the development of a broader understanding of social context, processes, and structures.

Research in related fields suggests that decision making within complex environments is the result of instrumental training and pre-existing beliefs, experiences, and values. This study provides preliminary qualitative evidence that underlying social dynamics have an effect on avalanche education motivation and outcomes. As such, practitioners and researchers may not be able to address avalanche education effectiveness until more is known about the relationship between experiential learning and socially constructed value systems, especially with regard to the cognition of risk.

CONFLICT OF INTEREST

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REFERENCES


