

KNOW BEFORE YOU GO: ADAPTING YOUTH AVALANCHE EDUCATION FOR ALASKA

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ABSTARCT:

Increased accessibility and snow sports media expose more youth to dangerous avalanche terrain than ever before. Standard avalanche education has failed to target the age group (21-25) most commonly involved in fatal avalanche accidents. Traditional curriculum and methods of delivery must be adjusted to more effectively reach students ages 12-18 before they get into trouble. In an online survey conducted during 2010/2011 in South-central Alaska, 98% of survey respondents were strongly in favor of providing more youth targeted avalanche education in Alaska. In 2011/2012, Alaska Avalanche School and Alaska Pacific University developed a youth specific curriculum customized for Alaskans from Know Before You Go (KBYG), created by Craig Gordon of the Utah Avalanche Center. Through financial support from Hans Saari Fund and Alaska Search and Rescue Dogs, six KBYG Awareness Lectures and two in-depth field courses called Backcountry 101, reached 160 students. From post-course evaluations and first-hand experience, a list of recommendations has been developed to enhance future youth avalanche education.

KEYWORDS: Youth; Avalanche Education; Avalanche Awareness; Know Before You Go; Alaska; Alaska Avalanche School

1. INTRODUCTION

The Alaska Avalanche School currently provides avalanche education of all levels. However, very few courses offer youth-specific avalanche education (ages 12-18) in Alaska. Only one organization, North America Outdoor Institute has made an attempt to reach the youth with their *BE SNOW SMART* program, (NAOIAK, 2012).

Alaska Avalanche School (AAS) spearheaded an effort to create a youth specific avalanche education program for the Anchorage area. A youth avalanche education needs assessment conducted via an email-based survey during the winter of 2010/2011, indicated that the avalanche school should indeed begin developing a youth specific pilot program for the upcoming winter of 2011/2012.

With support from Tucker Chenoweth, the director of AAS, and Eeva Latosuo, an Alaska Pacific University professor, we contacted Craig Gordon of the Utah Avalanche Center for curriculum development support. The Utah Avalanche Center has successfully delivered a youth specific education program called *Know Before You Go* for eight years. With Gordon's permission and support, we decided to use the *Know Before You Go* curriculum and simply adapt materials to fit the Alaskan terrain and audience.

During the winter of 2011/2012, the Alaska Avalanche School successfully hosted 8 *Know Before You Go* courses reaching a total of 163 students in the Anchorage area. After each course, we evaluated students and students evaluated the program in an effort to improve the developing program and to make recommendations on youth avalanche education for the community at large.

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2. NEEDS ASSEMENT

During the winter of 2010/2011, the Alaska Avalanche School was inundated with requests for youth specific courses. It was clear that a large portion of the youth population from Anchorage and Girdwood, had not been reached by any avalanche awareness program. To evaluate the community's interest in additional youth avalanche awareness opportunities, I conducted a youth avalanche education needs assessment in the spring of 2011, using an online survey.

The survey was sent out using email to three lists: *alumni of the Alaska Avalanche School, Alyeska Ski Patrol, and members of the Friends of the Chugach National Forrest Avalanche Information Center*. By sending the survey to these communities the goal was to gather opinions from snow professionals, educated backcountry users, and parents who use the backcountry. Of the 66 respondents to the survey, 30% were parents, 9% were teachers, and 27% were snow professionals. 34.4% chose the "other" category labeling themselves as mainly students or recreationalists.

To roughly estimate how many youth actually need this kind of education, the survey asked if the respondents know youth who access out-of-bounds/avalanche terrain, including the outer-area gates at Alyeska Resort. A staggering 79% said, "Yes." One respondent said, "I know approximately 10 athletes under the age of 18 that ski avalanche terrain." Another reported, "I work with many youth and hear about them going to *Hatchers Pass* and hiking up to get some powder lines, because it is cheaper than Alyeska." One parent said, "I have four sons who all backcountry snowboard."

The survey results demonstrated clearly that youth in Southcentral Alaska are accessing avalanche terrain, and that their parents want them to be educated about avalanches. Most importantly, 98% of respondents answered that they would be interested in having a pilot youth avalanche education program at their school, community, or club. After analyzing the results of this needs assessment, it became evident that the community was craving more youth specific avalanche education

3. KNOW BEFORE YOU GO

During the winter of 04-05, Craig Gordon

of the Utah Avalanche Center (UAC) developed a new youth focused education program called Know Before You Go (KBYG). The UAC provide this program in two different forms. One is brief and brought directly to local middle and high schools. The other is more extensive with 8 out of 11 total hours spent out on the snow.

During the first year, nearly 12,000 students were reached with 80 presentations (Utah Avalanche Center, 2011). In 2010, a record-breaking 154 presentations were given, reaching nearly 18,000 students (Utah Avalanche Center, 2011). A partnership with Backcountry Access puts avalanche beacons, shovels and probes into student's hands so they can practice with critical rescue gear. Additionally, the Know Before You Go program has been reviewed and accepted by the Utah Board of Education health and physical education specialist. Since the inception of KBYG in 2004, 115,510 students have gone through the program and not a single youth has died in an avalanche (Utah Avalanche Center, 2011).

4. KNOW BEFORE YOU GO IN ALASKA

AAS had access to all of the KBYG Utah materials, including outlines for the Awareness Lecture and Backcountry 101, the KBYG DVD, and the Utah Awareness Lecture PowerPoint, with permission to adapt it for Alaska. Tucker Chenoweth of the Alaska Avalanche School and Eeva Latosuo, of Alaska Pacific University helped with curriculum customization.

We substituted Utah photos with pictures of commonly known Alaska terrain familiar to students. Also I added an optional demonstration about slab formation and failure.

For the Backcountry 101 Course, Gordon provided a course description, and a general outline described over a phone conversation. Lectures and individual lesson plans for the course were developed in house. Most importantly, we synthesized the original 19 learning outcomes into focused learning goals, three goals for the Awareness Lecture and four goals for the Backcountry 101 course.

Know Before You Go AK Learning Goals

Originally, Gordon had 19 learning outcomes for students of KBYG. Although all of these outcomes were desirable for the Alaska version of KBYG, we paired them down to help

provide continuity and clarity of instruction for the students. In McCammon's article, *Sex, Drugs, and The White Death: Lessons for Avalanche Educators from Health and Safety Campaigns*, he says, "One of the common features of a successful risk education program is that they have precise clearly-stated goals (Montoya et al. 2003, NIH, 2002; Kirby, 2001; Lonero and Clinton, 1998). While on the surface this would seem obvious, the act of specifying a goal for a program, whether it is a drug campaign or an avalanche course, forces its designers to make deliberate choices about the methods to be used in the program and it's intended outcomes."

We chose specific goals that summarize Gordon's original learning outcomes. Initially, I chose three learning goals for the entire KBYG curriculum including both the Awareness Lecture and the Backcountry 101 course. The original learning goals were:

At the end of a KBYG Course students should be able to:

1. Identify avalanche terrain
2. Diagnose obvious red flags in snowpack and weather
3. Choose reliable backcountry mentors

These original learning goals are the fundamental ideas that were emphasized on every course in 2011/2012. It should be noted that the original learning goals were used to evaluate the effectiveness of instructing. Later we would change and add to the learning goals.

After conducting a number of courses, we realized that the main learning goals for students were quite different for the Awareness Lecture and the Backcountry 101. The Awareness Lecture is about informing students of the existence of avalanche hazard, and the main goal is to encourage students to seek out more education. This new conclusion changed the Awareness Lecture learning goals to:

At the end of the KBYG Awareness Lecture students should be able to:

- 1) Identify avalanche terrain
- 2) Diagnose obvious red flags in snowpack and weather
- 3) Seek out more education

Students who attend an Awareness Lecture are not ready to head into avalanche terrain without additional learning.

The original learning goals needed to be changed for the Students of Backcountry 101 course because the students were receiving much more information and an entirely different experience. To reflect the additional information and experience of a Backcountry 101 course we added field components to the learning goals, and an important piece on finding reliable backcountry mentors to keep this novice backcountry users safe while they gain more experience with the basics of avalanches. The new Backcountry 101 Learning Goals are:

At the end of the Backcountry 101 Course students should be able to:

- 1) Identify avalanche terrain in the field
- 2) Diagnose obvious snowpack and weather red flags in the field
 - Recent Avalanches
 - Cracking or Collapsing
 - Danger Rating
 - Heavy Precipitation
 - High Winds
 - Significant Temperature Swings
- 3) Use rescue equipment
- 4) Choose reliable backcountry mentors and partners

Know Before You Go Alaska Curriculum

Know Before You Go consists of two separate programs. The first is a free, 1 hour long, Awareness Lecture, designed to be delivered at schools, community centers, or local businesses. The second is Backcountry 101. This course is more extensive as it is 11 hours long with a cost of \$100, and it incorporates 8 hours of hands-on field time at Alyeska Resort.

The Awareness Lecture

The awareness lecture begins with a 17 minute long video created by Craig Gordon to illustrate the destructive power of avalanches. Also, the video contains testimonies, from young professional athletes about the importance of avalanche rescue gear, checking the local advisory, and seeking out additional education.

Next is a 20-minute long interactive presentation delivered with enthusiasm. The lesson focuses on conveying three important messages that are in alignment with the KBYG learning goals. The Lesson also goes over safe travel practices, the basics of avalanche rescue equipment, companion rescue procedures, and

where to obtain information for current avalanche conditions.

The final 20 minutes is allocated for a presentation from a local avalanche professional telling a story about close calls or accidents they have had as they learned about avalanches. However, if no one was available to present their story, time was filled with a miniature slab formation and failure demonstration called, The Terrain Board. This demonstration is eye-opening for students who have never seen an avalanche, because it takes this complex phenomena and creates it right in front of them. By seeing the avalanche in action on a small scale, the students establish a cognitive parking place for this incredible force of nature, which otherwise might be a far-fetched concept.

The Backcountry 101 Course

The Backcountry 101 is a course designed specifically for youth new to the backcountry. The course includes a 3-hour lecture on Friday evening and an 8-hour field day on Saturday. Traditional Level 1 classes are great for those wanting to make a major investment in their avalanche knowledge. As Craig Gordon says, "For youth it's less about the science and more about getting into the local mountains armed with a basic understanding and awareness." This class provides a dynamic and fun perspective on avalanche awareness with actual field experience, engaging videos, hands-on demonstrations, and real life testimonies from local skiers, riders, guides, ski patrollers, and rescue dog handlers. Heavy on practical, usable skills and local information, this is an effective start for building avalanche skills. Students will leave this class understanding the basics of safely traveling in avalanche terrain and sporting a great foundation for learning more.

5. EVALUATION

To evaluate the success of the program, we created two documents for the students to complete at the conclusion of their course, a program critique and a Backcountry Contract. The first document evaluates their overall satisfaction with the course. We took the AAS standard course evaluation form and modified the wording with youth language to be more fun and connected with the teenage snow sports

culture. With the use of slang, we wanted to emphasize the student instructor relationship as peer-to-peer rather than authoritative.

To summarize the student's course critiques, we analyzed the information with Excel. we recorded, their age, travel method, level of satisfaction, previous avalanche knowledge, what they liked about the instructing, what could have been better about the course, whether this course made them interested in more avalanche education, and if they would recommend this course to friends. For both the level of satisfaction, and previous avalanche knowledge, the students had three options to choose from. For the section where students wrote what they liked about the instructor, we classified their responses into several one or two word responses. For example, if a student wrote that they felt the instructor was "nice" and the "instruction was easy to follow," we would record, *Clear Instruction and Approachable*. The categories that we used to represent how the students felt about the instructors, were, *Clear Instruction, Approachable, Knowledgeable, Young, and Fun*. Although many students did not have anything to write down in the section, (*what could be better about the course?*) for those who did respond, we generally recorded their response word for word. The final two questions asked *if the students were interested in further avalanche education and if they would recommend this course to a friend*, and to record these responses, we simply wrote *yes* or *no*.

The second document is called the Backcountry Contract. It is designed to help the students analyze the bulk of information they just received, and synthesize it into three ideas they felt were most important for avalanche safety. My hope is that the students will cultivate three, easy to remember, personal rules. This document is something the students can take away from the course and hang it up next to their skis or the coat rack to reference every time they go out.

More importantly, we asked the students to fill out two copies of their backcountry contracts so that we could collect one. By collecting a copy of their backcountry contract, we were able to evaluate how well the learning goals were conveyed. The instructors never told the students directly what the learning goals were or that there even were learning goals. Essentially we can evaluate the instructing and

effectiveness of the curriculum by how closely the student's backcountry contracts reflect the learning goals.

To format the qualitative responses into a quantitative summary that represented how well the instructors conveyed the learning goals, we examined the backcountry contracts to see if the students wrote down zero, one, two, or three of the learning goals on their backcountry contract. For example, if a student wrote down three sentences, and only two were representative of the learning goals, they got a score of two. If the student's backcountry contract did not contain any statements that corresponded with the learning goals, they received a score of zero.

Unfortunately we were not able to evaluate any of the Awareness Lectures that were presented on Anchorage School District grounds because many of the students were under 18 and their parents were not present to provide consent to use their responses for research.

6. RESULTS

During the winter of 2011/2012, the KBYG Awareness Lecture reached 141 students in six separate classes. The Backcountry 101 course reached 19 students in two separate courses held at Alyeska Resort. In total the Alaska Avalanche School supported 8 KBYG courses and reached 163 students in the Anchorage area (Figure 1).

Students' overall level of satisfaction with the first BC 101 course on February 24th and 25th showed moderate success. Six out of eleven (54%) students selected the highest level of satisfaction, indicating that *"it was the sickly gnarr gnarr."* 45% of the students selected the second highest level of satisfaction, indicating that *"it was alright."*

The second Backcountry 101 course went much smoother and the students reflected this in their critiques as 100% of students selected the highest level of satisfaction. Over all, 74% of the students who took a Backcountry 101 course rated the course with the highest level of satisfaction.

As we suspected, youth feel more comfortable and are more receptive to learning from a peer rather than another adult who may be disconnected by generations. The critiques support my hypothesis because when asked what the students like about the instructing, an

Date	Course	Location	# of Students
12/9/11	Awareness Lecture	Polaris K-12	24
1/6/12	Awareness Lecture	Polaris K-12	47
2/24/12	BC 101	Alyeska Ski Club Race Training Center	11
3/2/12	Awareness Lecture	Highland Tech	34
3/8/12	Awareness Lecture	REI	18
3/23/12	BC 101	Alyeska Ski Club Race Training Center	8
4/2/12	Awareness Lecture	East High School	10
4/2/12	Awareness Lecture	East High School	11
Total Students Reached			163

Figure 1. Course, locations, and number of students in the 2012 KBYG Alaska program.

overwhelming number of responses had something to do with approachability and age. 79% of the responses indicated that the students felt the instructors were *"approachable"* and or *"fun."* One student wrote specifically that they liked how *young* the instructors were. And another student wrote that they felt inspired by the instructor's *"love for avalanches."*

In the response to *"what could have been better about the course,"* 47% reported that the course needed no improvements. However, a few students were unhappy with the skiing/riding ability of other participants. Students wrote things like, *"split up the groups by riding ability,"* *"less stopping, more skiing."* During the indoor lectures on Friday night, we noticed some heads nodding off, and this was reflected in the critiques with one student's statement, *"the lectures were a little boring."* Even though I tried to make the lectures as entertaining and bare bones as possible, the information still has to get across somehow and students are bound to be bored with information dissemination since they are inundated with it all day, everyday, at school.

A testimony to the success of the Backcountry 101 course can be seen in the student's interest in more avalanche education.

As a result of the Backcountry 101 course, 100% of students were interested in additional avalanche education. One student even crossed out the answer “yes” and wrote in, “definitely!” Also 100% of participants said they would recommend the KBYG Backcountry 101 course to a friend.

The results of the backcountry contracts from the Backcountry 101 courses are perhaps most reflective of the success of KBYG youth avalanche education. For these results, 19 backcountry contracts were analyzed for the original three learning goals. I. One student wrote down nonsensical answers, which accounts for why there was one student who had zero out of three learning goals. But, the other students answered well. X students (37%) documented two learning goals in their backcountry contracts and 11 (58%) students presented all three learning goals in their backcountry contracts (Figure 2). This shows that the students were able to synthesize the bulk of information into the most important concepts for rudimentary avalanche hazard analysis.

The backcountry contract results indicate that the amount of information and the method of presenting is appropriate, because most students were able to grasp all three learning goals. The rest were stretched a bit as they interpreted two out of three of the learning goals. The fact that 37% of the students recognized two learning goals signifies that the information is not dumbed down or too simple.

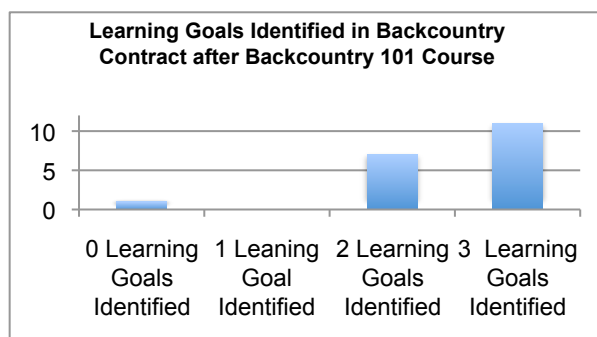


Figure 2: 11 students identified all 3 goals.

7. RECOMMENDATIONS

-Youth avalanche education courses should have meaningful concise goals to clearly guide the education process.

-Instructors should be young and enthusiastic to promote a “peer-to-peer” learning environment.

-Information should not be dumbed down, but presented differently

-Break up lectures with multi-media teaching techniques and interactive activities such as showing a segment of a ski movie (i.e. the Rocky Mountain Sherpa’s movie *The Fine Line*), or creating a model avalanche

-Send the students away with a reminder of the most important learning goals, like a *Backcountry Contract* or a permanent field card (i.e printed on inclinometer).

-Develop a brand that appeals to the teen culture of trend following. In essence we need to make avalanche education “cool.”

-The larger avalanche community should settle on a set of nationwide or international guidelines for youth avalanche education to have a consistent standards for youth avalanche education.

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