# TEENAGERS IN THE BACKCOUNTRY: A STUDY OF USE AND EDUCATION FROM THE PERSPECTIVE OF HIGH SCHOOL STUDENTS

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ABSTRACT: Teenagers are using the backcountry increasingly more and more during the winter for a wide range of activities. When growing up in mountain communities, adolescents can gain access to avalanche education programs. Their levels of education and their usage of the backcountry varies greatly. Many teens in mountain communities took internet surveys to gauge their levels of usage and education as well as their perspectives on how to better educate their age group. There are also psychological differences between adults and adolescents – particularly in the decision making process. By combining brain research and collected data from the surveys, a good look at youth avalanche education is attained. From there, suggestions can be made on how to best reach and educate teenagers in the form of avalanche courses. By using information collected directly from teenagers, this study shows a unique and vital perspective that can be beneficial to educators and program designers as they map future education programs.

KEYWORDS: teenagers, avalanche education, youth education

## 1. INTRODUCTION

Many teenagers who live in mountain communities are using the backcountry for winter recreation. While there has been limited research dedicated to finding out how many teens use the backcountry and there are educational opportunities for them to take avalanche courses, not much information has been collected from the perspective of the youth themselves. This project used internet surveys to collect data from teenagers in mountain towns across the North- American west. Many of these young men and women have some level of avalanche education. The goal of this project is to analyze and draw conclusions from survey results of high school aged kids to find the best way to educate teenagers.

This project also considers outside research conducted on the ways teenagers make decisions. Due to the fact that the adolescent brain is still developing, there are psychological reasons why teens make decisions and appear to treat risk differently than adults. Social and peer interactions also tend to be emphasized during the teenage years, and this plays a role in the way group dynamics work with teens. This affects the types of decisions teens will make in groups while using the backcountry.

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## 2. SURVEY

### 2.1 Survey Methods

The survey was sent to kids ages 14-18. This is the general age of a high school student. By August of 2016 the survey had yielded over 150 responses. Results came from various mountain towns across the Western United States and Canada. The two most represented communities were Jackson Hole, Wyoming and Sun Valley, Idaho. The majority of teens who took the survey were contacted through either their school or local ski club. The survey included questions about how often teens use the backcountry and their level of avalanche education. They were also asked about their practices and some experiences they might have had while using the backcountry. Additionally, teens were requested to give input on ways to improve avalanche education for their age group.

### 2.2 Survey Results

When asked if they use the backcountry during the winter, 75% of respondents answered “yes.” The rest of the survey questions were given only to that group who use the backcountry. Those people participate in a wide variety of recreational activities in the backcountry. These include, skiing (both alpine and Nordic), snowboarding, snow-

shoeing, snowmobiling, winter-camping, and ice climbing. Of these, alpine skiing was by far the most common with 77.6% of survey respondents taking part in that activity.

The survey looked at how often teens are using the backcountry compared to how often they are participating in winter activities total. Over 50 percent of teenagers reported that they take part in winter recreational activities over 50 days each season. However, when polled on their usage for the past two winters, well over 50% said they use the backcountry less than 10 days each winter.

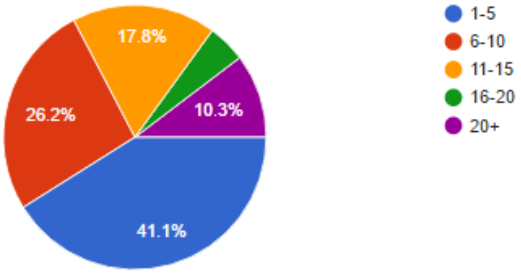


Figure 1: Results for the question: “How many days did you use the backcountry during the 2014-2015 winter season?” (The percentage for 16-20 day users was 4.7%)

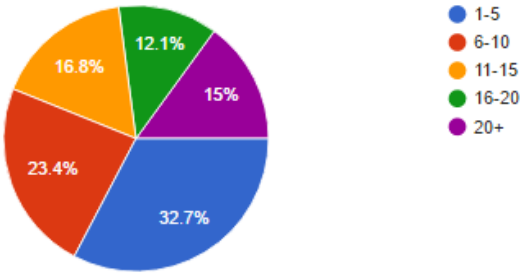


Figure 2: Results for the question: “How many days did/will you use the backcountry during the 2015-2016 winter season?”

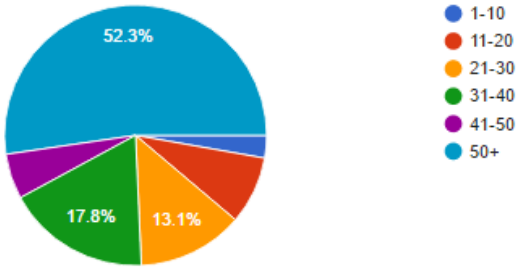


Figure 3: Responses to the question: “How many total days do you participate in recreational winter activities each season?” (Percentage for 1-10 days is 2.8%. For 11-20 days it is 8.4%. For 41-50 days it is 5.6%)

The majority of the time that teenagers are spending taking part in winter sports is actually not in the backcountry, but they are still venturing out into avalanche terrain with considerable frequency. For as often as many of these teens are heading into the backcountry, it is important that they have an adequate level of avalanche education.

The survey then looked into the practices of these teens and how safe they are being when using the backcountry. The following percentages state the number of teen survey respondents who claim to carry this gear which is considered necessary for safe travel in avalanche terrain:

- Backpack – 95.3%,
- Avalanche Transceiver- 89.7%,
- Shovel – 92.5%,
- Probe – 92.5%.

Respondents also said they carry other items such as water, first aid kits, extra clothing, etc. but the four listed above are commonly viewed as the most relevant to avalanche safety.

When asked if they check their local avalanche advisory before going out into avalanche terrain, 70.1% of teenagers reported that they do check this forecast. 19.6% said that someone else in their party checks the advisory and the remaining 10.3% do not check their local advisory before venturing into the backcountry.

Another question in the survey asked teens who is in their party when they go into the backcountry.

Table 1: The people teens are traveling with in the backcountry. (Respondents could select multiple options for this particular question).

| Person/people | Percentage |
|---|---|
| Parents | 58.9% |
| Other well-known adults | 48.6% |
| Coaches/ instructors | 39.3% |
| Friends | 74.8% |
| I go alone | 4.7% |
| other | 9.3% |

High Schoolers use the backcountry with a variety of different people. The types of people in their travel parties will affect group dynamics. For example, teenagers interact differently in a group with their friends than they do with their parents or a coach. This plays a big role in how teenagers make their decisions in the backcountry. The survey also polled teens on the ways their groups make decisions- whether it is more democratic or authoritative.

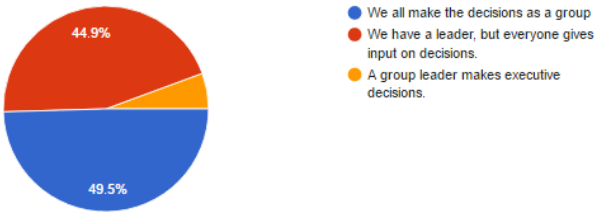


Figure 4: Responses to the question: “When you are with a group in the backcountry, who makes the decisions?” (The yellow/orange section represents 5.6%)

Teens were also polled on some of their experiences in the backcountry. When asked if they had seen an avalanche occur, about ½ of respondents reported that they had.


Figure 5: Responses to the question: “Have you ever witnessed an avalanche in the backcountry?” (Green- 8.4%, yellow- 5.6%)

Nearly 75% of people who took the survey said they had chosen not to go out or backed off a slope due to avalanche danger. When asked why they had chosen to not continue, the majority responded by saying that they saw signs of instability such as cracking. Others reasons included weather issues and unfamiliar or unsafe terrain. Some people explained that it was another member of their party who decided it was a bad idea to carry on in that particular situation. A few stated that they chose to back off because they did not feel comfortable with their group or personal abilities.

The other main part of the survey dealt with avalanche education. Teens were asked about their education levels and how comfortable they felt with their knowledge. For these questions, everyone was polled – not just the people who said they use the backcountry.

Table 2: Percentages of survey takers by education level. (Some respondents may have selected multiple levels because they have completed multiple courses)

| Education Level | Percentage |
|---|---|
| Awareness course | 35.7% |
| More than an awareness course but not a full Avalanche Level 1 | 33% |
| Avalanche Level 1 | 24.3% |
| Avalanche Level 2 | 3.5% |
| Avalanche Level 3 | 0% |
| None | 16.5% |
| Other | 4.3% |

The majority of these education programs were provided by schools. Some were taken via ski clubs/winter sport organizations. There were a few others who said they independently took a course with an avalanche education provider.

None of the respondents said that they felt their education level was so low they did not feel comfortable in the backcountry. However, many acknowledged that there was room for improvement in their levels of avalanche education.

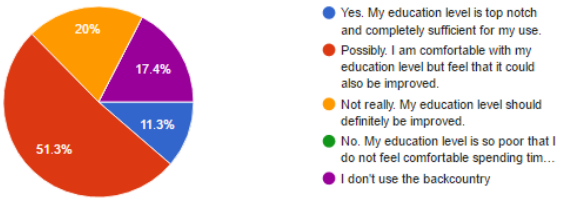


Figure 6: Answers to the question: "Do you feel like your education level is sufficient for your backcountry use?"

The last question asked on the survey was "What do you think could be improved in terms of avalanche education and educational opportunities for you and your peers?" The question was a free response and generated a large variety of answers. Their suggestions can be summarized as follows:

- More affordable and lower cost courses would help teens in further their education.
- Courses designed just for teenagers would be more enjoyable and beneficial
- Timing of most courses is not logistically possible for teens due to school and extracurricular activities.
- Implementing more courses as part of school curriculum (ex. dedicate a unit of a physical education class to avalanche education)
- Many felt that their education had prepared them well for what to do in an emergency (ex. Beacon search and digging out a victim and had included some information about snowpack, but they did not feel like it prepared them well enough to assess a snowpack and make a decision.
- Emphasize going into the backcountry with an experienced mentor or other experienced person
- Discuss group dynamics and decision making more in avalanche courses.
- Include a phone application in courses since teens rely so heavily on technology in this day in age.

## 3. PSYCHOLOGICAL CONSIDERATIONS

Many people believe and it is often stated that teenagers are prone to making bad and risky decisions. While there is some truth to this statement it is not just because teens feel like taking risks. There are psychological reasons why teenagers make decisions differently than adults.

The teenage brain is not fully developed. The frontal cortex is the region of the brain that controls reasoning and aides in thinking before acting. This region of the brain is changing and maturing greatly during adolescence. However, the amygdala- a part of the brain that deals with instinctual reactions is developed at a younger age. The amygdala is responsible for things such as "gut reactions" and "fight or flight responses" For this reason, teens rely more on the amygdala and are more likely to make impulsive decisions. (Shad 2011)

It is a common misconception that teenagers do not understand risk. An adolescent's ability to comprehend risk has been shown to be nearly equal to that of an adult. However, as described in the previous paragraph, teens are more likely to make instinctual reactions because their impulse control is not as fully developed. Also, during the teen years, emphasis on social and peer interactions is heightened. Thus, teens are much more susceptible to peer pressure. They want to follow the group and will often make their decisions based on what their peers are doing. Adolescents also tend to spend a lot of time in peer groups. This combined with the fact that the majority – if not all – of the members of their groups are not fully mature in decision making will cause teens to make more impulsive decisions. These choices present themselves in the form of high risk decisions. (Gardner 2005).

A very large part of avalanche education lies in decision making. Because the psychological decision making process in teenagers is so different than adults, there may be a method for reaching teenagers in avalanche education that is slightly different than the methods used to teach adults.

## 4. CONCLUSIONS

A high level of backcountry use by teenagers is evident. Luckily, the majority of these users are carrying proper equipment, have some form of education and appear to be aware enough to back off in dangerous situations. However, it is still vital that adolescents who are residing in mountain communities and using the backcountry for winter recreation receive a good and useful avalanche education. Using the results from the survey and the psychological research, suggestions can be made to improve avalanche education for high school students. Due to an obvious age and maturity gap as well as clear psychological differences, more consideration should be given to educating adolescents and adults separately and maybe even with different methods.

One problem for many people interested in avalanche education is money. Many adolescents cannot always afford the price of an avalanche course. There are some non-profits that have worked to fund youth education but if more scholarship opportunities were created specifically for avalanche courses, it would be very beneficial to many high school aged kids. Teens also struggle to take courses because they do not align well with their busy schedules. Attempting to implement more courses as part of schools in mountain towns would enable more high schoolers to receive an avalanche education.

A big consideration to include in avalanche courses for teenagers is to put more emphasis on group dynamics and decision making. Because adolescents are more likely to make rash, impulsive decisions, more time should be dedicated to explaining how to make good decisions based on evidence while in the backcountry. Also, because social and peer interactions are emphasized in the teenage years, there should be more education about group dynamics. Teens are prone to giving into peer pressure and it is important to let them know it is okay to say “no” and that others should respect if a member of a party does not feel comfortable at any point on a backcountry adventure.

Teenagers differ from adults in the way they make decisions regarding risk. Because teens are not as psychologically capable of thinking before they act as adults are, they may need to be educated to make decisions using a different teaching method. This is not to say that adolescents are unable to make reasonable decisions, it is just that their brains do not logically process reason in the same way as grown-ups. For this reason, there may need to be an alternative approach to explain decision making to teenagers. For example, it may work very well to tell an adult all of the factors that lead to instability in a snowpack and have them assess these factors in a situation to make a well-educated decision based off their observations. This method may work for some teens as well. However, due to the fact that teens tend to make their decisions more impulsively, they may respond better to an “If you don’t know don’t go” teaching approach or to simple acronyms and basic rules of thumb. It is necessary to acknowledge the difficulties of using basic rules in avalanche education since each backcountry situation is unique, but there are ways that avalanche courses can be tuned to better fit the minds of adolescents.

Teenagers are often also very technologically dependent. This could be used advantageously by trying to implement a phone application or technology based learning system into courses. However, there is a drawback to this proposal because technology is not always readily available in the backcountry and people should learn to function in wilderness situations without it.

It is fantastic that some avalanche education is already out there for teenagers. However, there are still large steps that can be taken to educate teens more and in a way that works better for adolescents. Hopefully the future can include comprehensive avalanche courses designed specifically for teens.

## 5. REFERENCES

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