

## FINLAV – FINNISH AVALANCHE EDUCATION: A RECENTLY ESTABLISHED EDUCATIONAL ORGANIZATION

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**ABSTRACT:** Finns are active winter recreationists and backcountry skiing and freeriding has become a popular activity. Northern Finland has many fell areas which are of interest to these user groups. Finns have started to recognize that these fells also have avalanche terrain and avalanche knowledge runs hand in hand with winter recreation. Many Finns travel also to neighboring countries and further, to reach bigger mountains and more terrain which requires even more extensive avalanche knowledge. Professionals who need avalanche knowledge at their work have also noted the increasing need for skills and knowledge. Avalanche awareness amongst Finns has developed well during the recent years thanks to FINLAV – Finnish Avalanche Education.

FINLAV has two educational curriculum tracks, one for winter recreationists such as backcountry skiers and freeriders and another for professional and work-related needs. FINLAV curriculum takes into consideration the current international standards and aims for high and even quality educational courses for both recreational and professional user groups. Emphasis is addressed to FINLAV Instructor Training, instructors' teaching tools and instructors' continuous professional development to ensure subject matter knowledge and pedagogical competence.

Since the development project, which ended year 2017, FINLAV has established a recognized position as an organization offering avalanche education. The number of participants who have been on FINLAV courses has increased steadily over its operational life. Also, the brand awareness and visibility of FINLAV has increased amongst winter recreationist, professionals and general public. Despite of limited resources and work based on voluntary work, FINLAV has been able to establish an operational administrative organization which governs the FINLAV instructors and oversees and develops the program.

In this article we share the main points of the educational track and the curriculum. We share components about the FINLAV Instructor Training and present some key figures from the development of the course participant numbers over the past seven seasons since data has been collected. Lastly, we discuss about the teaching and learning tools in use at FINLAV.

**KEYWORDS:** Avalanche Education, Education, FINLAV, Finnish Avalanche Education, Finland

### 1. INTRODUCTION AND BACKGROUND

FINLAV Finnish Avalanche Education, was founded as a development project (2015-2017) and started operating in 2018. The development project was funded by European Social Fund and was administrated by Humak University of Applied Sciences. Since 2018 FINLAV is managed by Finnish Ski Area Association. FINLAV is

guided by a steering group, which consists of representatives of various organizations linked to the avalanche field, such as Lapland Rescue Department, Lapland Police Department, Metsähallitus (Parks and Wildlife Finland), Finnish Meteorological Institute, Finnish Chemicals and Safety Agency as well as educational and guiding organizations including IFMGA guide representation. FINLAV has a small Education Workgroup of seasoned instructors that develops the instructor manuals and materials. FINLAV is closely connected to Swedish Avalanche Education (SVELAV), and monitors actively SVELAV's advancements. (Mäkelä, Muittari, Lehtonen, 2018)

### 2. FINLAV CURRICULUM TRACKS

FINLAV curriculum consists of two tracks, recreational and professional track. Recreational track

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is targeted to recreational user groups such as novice backcountry skiers and other winter recreationists including fell-ski tourers and snowshoers. FINLAV avalanche safety courses for professionals are targeted to individuals who need avalanche knowledge at their work. The professional curriculum track is designed to integrate easily with other training opportunities.

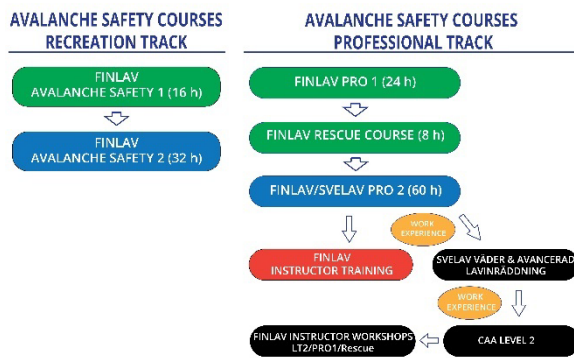


Figure 1: FINLAV Curriculum Tracks

First course, FINLAV Avalanche Safety Training 1 is an entry level course which focuses on safe travel in the backcountry. The key learning goals are to recognize avalanche terrain and learn how to avoid it. Other learning outcomes are related to systematic trip planning, recognizing human factors and avalanche rescue skills. Many winter recreationist take this course when they start backcountry skiing and to learn safe ways to do it without exposing themselves to avalanche terrain.

FINLAV Avalanche Safety 2 is a targeted mostly to freeskiers who already have experience in the backcountry and want to broaden their knowledge and capabilities to plan and execute safe and well-prepared ski trips appropriate for the current conditions. The key learning outcomes on this longer course are related to efficient trip planning with the help of FINLAV Check List Card (Figure 6.) and focusing on efficient communication and inclusive decision making in the group. Backcountry skiers who take this course are often wanting to answer the classic question: when can we ski the steep slopes and challenging terrain? This course's task is to give participants understanding of the concept of uncertainty and the importance of understanding many factors that influence to the multiple decisions during a ski day. Debriefing the day is incorporated to this course and after each day instructor facilitates a session where the quality of the decision making processes is discussed.

The FINLAV Pro1 and FINLAV Rescue Course are designed for Finland's working environments

and conditions and are similar to SVELAV equivalent courses. Professional track progression is designed to create a path for further development opportunities beyond FINLAV. FINLAV Pro 2 course is equivalent to SVELAV Pro2 course and taught in Finnish. This course is an important link for further training opportunities for those Finns or FINLAV avalanche instructors who are in need for more higher education beyond FINLAV system.

### 3. FINLAV INSTRUCTORS

#### 3.1. Instructor Training course

The first FINLAV Avalanche Instructor Training Course was run as a pilot course in 2017. Since then, FINLAV has had two Instructor Training Courses, in 2018 and 2021. Instructor Training Course has prerequisites ensuring adequate content knowledge, personal backcountry travel experience and experience teaching or leading groups. The last Instructor Training Course, 2021, was a combination of online learning and a three-day training course which gave opportunities for independent studying as well. The focus on Instructor Training Course is on how to run effectively the intro level FINLAV Avalanche Safety 1 course and how to utilize the instructors' teaching tools.

The Instructor Training Course focuses on four key pedagogical elements: 1) What to teach, 2) Where to teach, 3) When to teach and 4) How to teach. The emphasis is on how to create an effective learning situation that provides physically, socially and emotionally safe learning environment. Good instructors provide education and learning in an active and fun way, yet in a professional manner. As Riggs and Walker (2023) state about AIARE Instructor Training Courses, it is important to provide educational tools and allow practice. Each new FINLAV instructor shadows one FINLAV Avalanche Safety 1 course taught by an experienced instructor which presents an opportunity for continued mentorship.

#### 3.2. FINLAV instructor numbers and qualifications to teach variety of course types

Currently FINLAV has 46 Avalanche instructors; 37 taught courses during season 2023-2024.

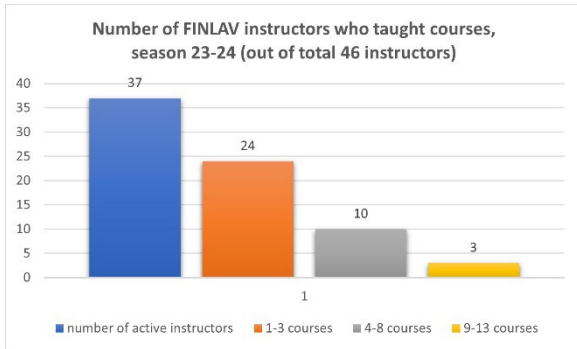


Figure 2: Number of active FINLAV instructors and the total number of courses taught by individual during season 2023-2024.

Majority of instructors (24) taught one to three courses during the season. Most of these instructors taught FINLAV Avalanche Safety 1 courses. Ten instructors taught four to eight courses and three instructors taught nine to thirteen courses. FINLAV requires instructors to teach at least one course per year (or two courses per two years) to stay eligible. They are also required to participate in FINLAV Instructor Update Seminar (online or live) minimum every other year.

Majority of FINLAV instructors are qualified to teach FINLAV Avalanche Safety 1 courses. As the organization has developed, FINLAV has gained more trained instructors and there are more qualified instructors to teach the higher-level courses.

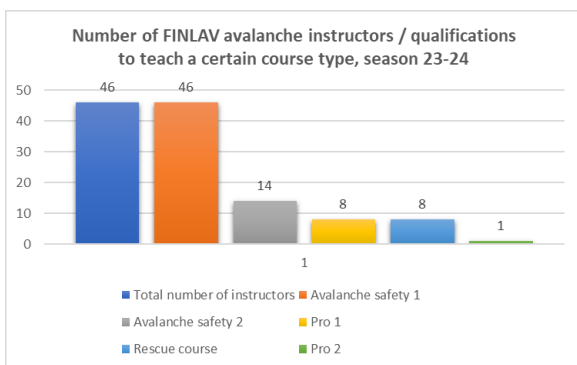


Figure 3: Number of FINLAV Avalanche Instructors season 2023-2024 according to instructor qualification for teaching different course types.

FINLAV started the curriculum development and instructor pool development by focusing on entry level recreational course, FINLAV Avalanche Safety 1 course. This entry level course is in the highest demand. It serves many recreational user groups and can be taught with the knowledge and skills gained from the FINLAV Instructor Course.

The instructor who teaches higher level recreation courses (Avalanche Safety 2) or courses for professionals, need more competencies. To be a qualified instructor at this level requires further professional training through SVELAV, CAA, IFMGA etc. training programs.

#### 4. DEVELOPMENT OF THE NUMBER OF PARTICIPANTS ON FINLAV COURSES

Finland is a country of 5,5 million inhabitants. There are almost 1 million Finns who ski (alpine, snowboarding, telemark) as their hobby (Lindfors, 2021). There is no reliable data on how many of these are backcountry enthusiasts or off-piste skiers and potential course participants on FINLAV recreational avalanche courses.

FINLAV started collecting data on course participant numbers since the beginning of its operational life. The early years had moderate but steady participant numbers and the Covid years brought a significant increase. FINLAV Avalanche Safety 1 course has had approximately 500 participants yearly for the last three years. FINLAV is also pleased to see the increase of FINLAV Avalanche Safety 2 course participants to approximately 100 participants a year.

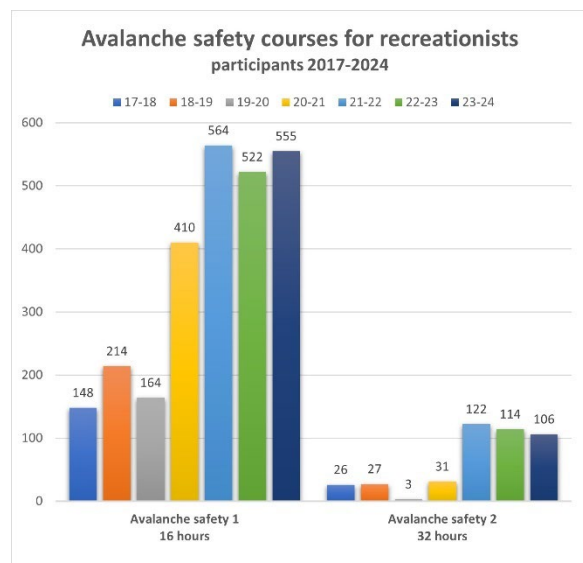


Figure 4: Development of the number of participants on FINLAV Avalanche Safety 1 and 2 courses during past seven seasons (2017-2024)

Courses for professionals and work work-related needs are in much lower demand. Most of the course participants taking professional track courses come from organizations and educational institutions with distinct needs for their specific working field. Participants on professional

track have included workers from Lapland Rescue Department and outdoor professionals such as wilderness guides, ski instructors or other nature tourism actors and students.

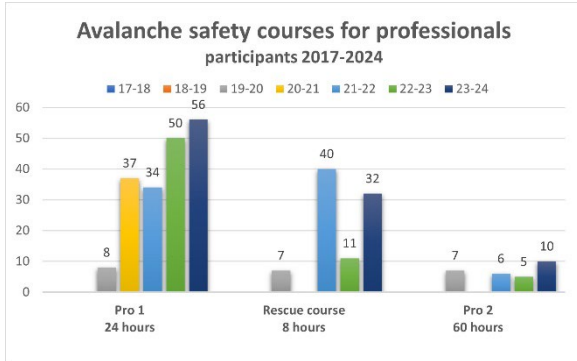


Figure 5: Development of the number of participants on FINLAV courses for professionals during past seven seasons (2017-2024)

### 5. CHECK LIST CARD AS A TEACHING TOOL

Since the initial development project, FINLAV has used a Check List Card as a pedagogical teaching tool for instructors and for participants to use after the course. The development of this Check List Card involved research of the existing trip planners and check list systems such as AVALUATOR (Haegeli et al., 2006). FINLAV had to take into consideration the limited avalanche forecast service in Finland and also the small-scale terrain in Finnish Lapland. At the same time many Finns recreate in foreign countries with detailed forecasts and bigger terrain and it was beneficial to create a tool that would work in varied settings. Some of the FINLAV courses are also taught in other countries besides Finland.

FINLAV instructors use check list card as a successful teaching tool on recreational track courses. Instructors have stated in annual instructor surveys that it guides the teaching moments and brings structure to learning moments. It has also helped instructors to introduce the group aspect into the trip planning and execution. Check list card has encouraged discussions around human factor and pedagogically capable instructor can help participants to learn more efficient and inclusive decision making.

#### BEFORE THE TRIP

**CHECK THE CONDITIONS**

**AVALANCHE FORECAST**

- Danger rating on scale 1-5?
- Avalanche problem: What, where?

**WEATHER FORECAST**

- Visibility, precipitation, wind, temps?
- Effect on the avalanche risk?

**TERRAIN ANALYSIS ON MAP**

- Identify areas exceeding 25° and 30°
- Identify the problematic areas mentioned in the avalanche forecast
- Make a route plan with alternatives

**EVALUATE THE GROUP**

- Number of participants, expectations
- Skill level, physical condition
- Minimum equipment: Transceiver, shovel, probe, phone, map, compass, FA kit, warm extra jacket, headlamp

**Is the trip suitable?**

- ✓ In these conditions?
- ✓ In this terrain?
- ✓ With this group?

#### DURING THE TRIP

**MONITOR THE CONDITIONS**

**WEATHER: Does the weather decrease the stability?**

- Visibility - can you evaluate the terrain?
- Precipitation - the amount of new snow?
- Wind - signs of windloading?
- Temperature - rapid rising?

**SNOW: Signs of instability?**

- FRESH AVALANCHES
- WHUMPING
- HOLLOW SOUNDS
- SHOOTING CRACKS

**TERRAIN ANALYSIS**

- Identify risk areas
- Identify alternative routes

**GROUP PERFORMANCE**

- Participants' physical/mental status
- Is the planned trip realistic?
- Transceiver and equipment checked

**DOES REALITY CORRESPOND TO PLANS?**

- ✓ CONDITIONS
- ✓ TERRAIN
- ✓ GROUP

**WHAT INTERFERES DECISION MAKING?**

- ✓ LACK OF COMMUNICATION
- ✓ GROUP PRESSURE OR GROUP SIZE
- ✓ EGO OR HURRY

#### SLOPE ANALYSIS

**EVALUATE THE SLOPE**

**DANGER INCREASES DUE TO:**

- Over 25° and over 30° areas
- Terrain traps
- Forecasted problem areas
- Avalanche paths
- Vast open slope
- Convex, unresponsive slope
- Overhead hazard, cornices

**OBSERVE WEATHER & SNOW**

**INCREASE IN AVALANCHE PROBABILITY:**

- Persistent weak layer
- Signs of wind drifted snow
- Signs of unstable snow
- New snow more than 30 cm / 48 h
- Rapid temperature rise
- Snowpack of variable depth

**ARE YOU ABLE TO EVALUATE THE SLOPE?**

- ✓ CAN YOU SEE THE ENTIRE SLOPE?
- ✓ ARE THERE SAFETY ISLANDS?
- ✓ TYPE, SIZE AND CONSEQUENCES OF THE POTENTIAL AVALANCHE?

ARE YOU ABLE TO FIND A SAFE ROUTE?

#### WHAT WILL YOU DO?

**DECISION**

- Will you turn back?
- Will you take an alternative route?
- Will you continue as planned?
- Decide the exact route and tactics
  - ✓ One by one
  - ✓ Spaced out adequately
  - ✓ Utilize safety islands
  - ✓ Avoid risk areas

**Traps in decision making**

- ✓ Getting stuck with the goal
- ✓ Following old tracks
- ✓ Trusting on false expert halo
- ✓ Powder fever
- ✓ Familiar location
- ✓ Group pressure

Have you made a justified decision?

Leverage from the EU 2014-2020

Figure 6: FINLAV Check list card as a teaching tool in recreational avalanche courses.

### 6. PARTICIPANT FEEDBACK AND COURSE EVALUATION

FINLAV collects participant feedback on all course types. FINLAV uses online survey, which is easily completed on a mobile phone in few minutes. 25 instructors out of active 37 instructors, collected participant feedback during season 2023-2024.

Survey includes few questions about participants own perception of their abilities and learning outcomes after the course. While this is a subjective opinion of their current understandings, it can also serve as a reflection of their learnings and needs for possible further training.

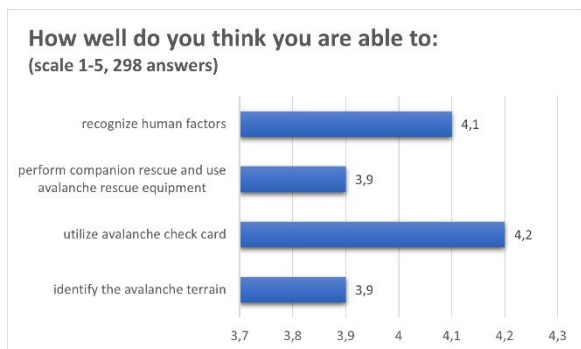


Figure 7: Course participant feedback survey, first part, collected from FINLAV avalanche safety 1 courses during season 2023-2024.

The second set of feedback questions focuses on how the course was ran and how it worked out for participants as a learning venue.

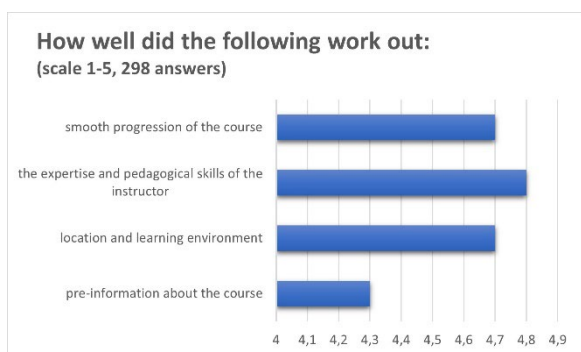


Figure 8: Course participant feedback survey, second part, collected from FINLAV avalanche safety 1 during season 2023-2024.

## 7. CONCLUSION

We can safely say that FINLAV has established its position as an avalanche education organization in Finland. The presented data above shows that the efforts to aim for a system that is based on current known best practices has been working for a small scale young organization. Also, systematic data collection has been useful to analyze the functionality of the courses, both for instructors and for participants. FINLAV has done most of the work with a voluntary effort. Moving ahead, FINLAV continues to search more sustainable financial solutions to run the organization. Ideally this could mean hiring subject matter experts for development work and resources for administration. This would allow a more professional approach to manage and develop the system.

## 8. QUESTIONS

For questions about FINLAV, please contact

[finlav@ski.fi](mailto:finlav@ski.fi)

## 9. ACKNOWLEDGEMENTS

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