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Experiential Resonance: Tapping into Embodied Knowledge and Image Memory – A Qualitative Study of Snow Sports Instruction in New York

Summary

Snow sports instructors frequently have to take students into a realm of experience they have never before encountered. From simply putting on skis, to side-stepping up a snow-covered mountain slope and getting off the chair lift to actually controlling and commanding their first run down a beginner's trail, the experience thrills and sometimes terrifies new skiers.

Teacher-certifying organizations recognize the importance of the student-teacher relationship that goes beyond technical skills. For example, the Professional Ski Instructors of America and the American Association of Snowboard Instructors (PSIA-AASI) *Level 1 Workbook* advises instructors to listen to their students in order to develop trust, put the

students at ease, and determine their emotions and motivations.[1] Given this personal interaction between student and teacher and the requisite shifts in students' emotions, behavior, and physical skill development, gaining a better understanding of this aspect of snow sports training may help instructors develop greater insight on their students' learning path, and may also inform learning and growth facilitators from other fields while expanding our understanding of the learning process in snow sports and adding to the literature on the psycho-social aspects of student-centered education.[2]

To further explore how instructors work with new snow sports students, a small qualitative study was conducted, consisting of interviews with four instructors at a New York area mountain known for its focus on ski and snowboard training. Each session consisted of an in-depth open-ended interview lasting about an hour, and in order to make the participants feel most at ease, the interviews took place in a location of their choice, an open area at the instructors' shed.[3]

The expert interviews unveiled a set of skills used by the instructors to develop *resonance* between the students' past experiences and successes, and their unfamiliar mountain skills. The term resonance refers generally to the power to evoke enduring images, memories, and emotions.[4] In the learning context, it has been used to describe the connections that occur between different types of learning modalities: abstract/conceptual and concrete/applied,[5] and as a moment of awakening and integration of past and present experiences.[6]

In this study, *experiential resonance* reflects these meanings in two primary ways: first, through *image memory*, using previously encountered images to relate to and understand new experiences. In a typical example, the instructor asks the student to place their skis with the tips closer to each other to form a triangular shape resembling the shape of a pizza slice, to learn snow plowing. Secondly, new skills are developed through *embodied knowledge*, knowledge that is inscribed in both mind and body, and applying or adapting such knowledge to new situations and skills. The findings indicate that experiential resonance can facilitate and deepen understanding of new skills in the learning process of beginning ski students. Further investigation of how and why experiential resonance can be an effective learning tool may be useful in developing teaching

techniques and tools as well as expand our understanding of the learning process in snow sports and other educational contexts.

Finding Experiential Resonance

Snow sports are often perceived as riskier than other activities, particularly by those who are new to them.[7] While expert skiers and snowboarders might either correctly estimate or sometimes underestimate the potential risks involved, beginners might find that, though they are eager to learn to ski or snow board, they still view both as dangerous and difficult to learn.

Fidgeon and Williams[8] found that among non-skiers in Canada, positive perceptions of skiing, such as health and recreational benefits, were often overshadowed by negative perceptions, including the view of skiing as a dangerous sport, tied to images of injury, pain, accidents and risk. These images were fed not only by friends, acquaintances and family members' accounts, but also by the media. Such perceptions might interfere with a beginner's ability to focus on following instructions to learn basic skills and to trust their own capacity to master snow sports.

Additionally, beginners might feel that the skills needed for snow sports are completely different from any other activity they are familiar with, and may approach them as if they have no relationship to anything they already have experienced. The instructors in this study addressed these concerns of beginning students by connecting the skills required to learn to ski with skills known and practiced for other unrelated activities. For instance, an instructor might ask students to recall the feeling of standing up from a dining room chair in preparation to getting off the lift.

Once the instructor has helped a student identify resonating concepts and experiences, he or she can then assist the student in transferring that knowledge into developing skills applicable to skiing or snowboarding. From first moving to where the instructor is standing, to setting goals to reach one tree then the next, the instructors can direct the students' focus to get them past fear, develop appropriate technique, and broaden and sharpen their newly learned skills. This relationship can impact not only the student's technique development, but can also color how

the student feels about skiing in the long term.[9] Education Philosopher John Dewey similarly speaks of an experiential learning cycle whereby the instructor brings past experience into the current learning context and sparks a thirst for continued learning: "The new facts and new ideas thus obtained become the ground for further experiences in which new problems are presented. The process is a continuous spiral."[10] Figure 1 below shows a learning cycle of experiential resonance that emerged in the interviews.

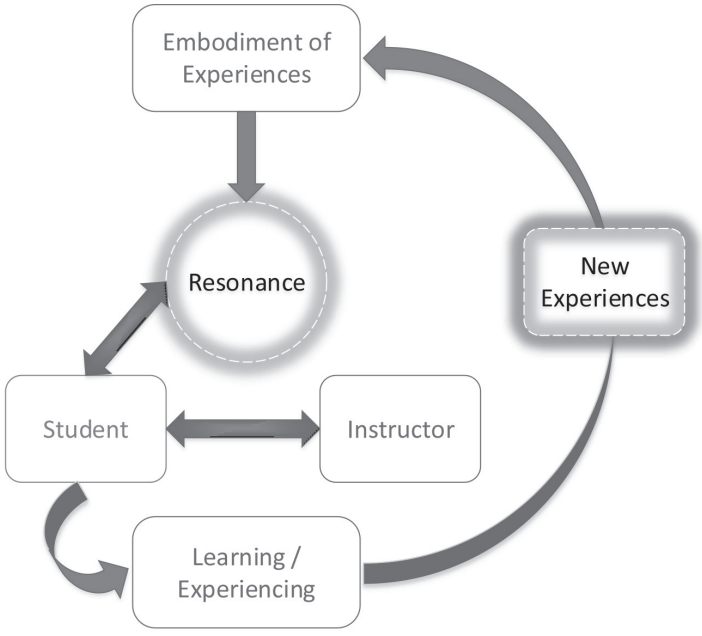

Figure 1. Experiential Resonance Learning Cycle.

The student brings previous lessons learned and experiences that the instructor can tap into to help teach new skills and overcome fear. As the student learns new skills, they are embodied and can resonate with successive instruction.

Redirecting Attention and Fear to Find Resonance

For the beginner student, the ability to pick up the necessary skills to ski or snowboard appears to be often related to the capacity to direct the student's attention away from thoughts, frequently connected to the fear of anticipated failure or rumination of the concepts and verbal instructions received, and towards the feeling of the present body experience, of posture and balance. This self-monitoring is not only distracting, but it can segment unified and fluid action impeding performance.[11] Whether negative or positive, self-monitoring can weaken students' ability to focus on both developing and fully incorporating new skills.[12]

In the example below, one of the instructors demonstrates how explaining ski technique ignites a process of *intellectualization* about skiing technique in adult students, while guiding them with poles (or broom sticks) advances their abilities through *experiencing the feeling* of skiing. In other words, they escape the segmented analytical process involved in self-monitoring and instead actually immerse themselves in a new experience.

"But an adult is rational and says, this is stupid, I'm going to point my body down the hill, that's nuts... The other thing is they need to feel what you want them to do. You can't just explain something. They need to feel what it is to turn your toe, to turn the ski to make it work.

[…]

Now I'm skiing backwards like this and I turn the adult and the adult then feels the sensation of turning because we are not on a black diamond, we are on a gentle slope. But as soon as I can get the adult to feel that sensation, that makes contact with this and we have a breakthrough.

I do that because I wanted to get the adults out of frustration as quickly as possible. I want adults to realize, this isn't as crazy or as difficult as you think it is but it is actually a process. Those are my tricks of the trade, everything that I do. That's one area, and then the other area is making them, distracting them from the fear factor."[13]

Similarly, once the student knows the basic skills needed to ski or snowboard, instructors use other techniques to direct the student's attention away from fear. Having the beginner learner follow the ski in-

structor, focusing the student's attention solely on this task, is one such technique. Modeling has been discussed as a useful technique in skill learning[14], and may influence the way that beginning skiers later show the sport to future skiers.[15] As discussed by Jespersen, modeling is not only an imitative technique, but a creative, interactive and dynamic one, constantly moderated by personal factors and environmental conditions. Instructor, student and environment, are in a changing interactive and dynamic relationship during every lesson. In this study this interactive quality of modeling was highlighted, and modeling also surfaced as a way of directing the student's attention towards their existing abilities and skills to build upon while learning to ski.

"Because they're not thinking about anything -- their only task is to follow you. So, they're not thinking should I turn now? Should I turn later? So, it kind of takes a whole piece of the equation out of it for them. It's something they don't have to think about. If they're just following in my path I'm actually taking them up the hill to slow them down. They don't have to think to turn up the hill. As long as they stay in my path I'm going to take them on a safe journey. When they're on to their own, you know, they [think], do I turn now? It's icy -- what do I do here over this ice?"[16]

Fearful Situations and Embodied Knowledge

Focusing on the fear of failure and its consequences is common among adult ski learners, pulling their attention away from learning. As noted above, new skiers often perceive snow sports as risky. Novice skiers in Fidgeon and Williams' study perceived skiing as a very physically demanding, difficult to learn and fast sport, and listed among their concerns regarding failure, not only their fear of injury and of losing control, but also of social embarrassment. Because beginners haven't skied before, they may assume that the skills they are being introduced to don't relate to any other skills they may already have mastered. But the instructors in this study pointed out that some of the skills necessary to successfully learn to ski are sometimes already applied by the students in other activities.

Recalling and putting into use this knowledge that is already part of the student's set of physical and mental skills -- the embodied knowledge they possess from other past activities and experiences -- helps students learn to ski. For example, while getting on and off a moving chair lift is often difficult and sometimes scary the first time, the required action is very similar to getting on and off a stationary chair, a skill the student is likely to easily recall and use in this new context.

"[…] we were getting close to getting off the lift. I said, by the way, what we are going to do is get up out of the dining room chair. That's just like you are standing up out of the dining room chair and don't worry about your left side, I'm on your other side and I'm going to hold you. She says, okay. This is a woman that crashed and burned every time she got off the chair.

When you are treated like a moron and you are not, and then you are not receptive to the other person trying to help you. I held her arm very tightly, I said, one, two, three and let's stand up. We stood up, I scooted her down, she didn't fall. The whole day changed and by the end of the day she skied fine."[17]

Overcoming Cycles of Negative Experiences

The above example portrays the use of embodied knowledge in teaching a student to get off the chair lift and highlights Dewey's idea of a successive experiential learning loop.[18] At the same time it is important to observe that the interviewee's quote indicated how the student's "whole day changed" even though each previous attempt to get off the chair lift failed dramatically.

Dewey conversely cautioned that not all experiences promote learning, and some may in fact create a loop of ongoing digression rather than progression in the learning cycle.[19] The interviewee's action of fostering the student's resilience addresses Dewey's concern of overcoming pre-existing negative experiences that make their way into the learning process. It also organically reflects the importance of the instructor's observational and listening skills in understanding each individual student.

Improvement and Context

The role of the instructor can be just as important from the basic through to the expert levels not just in teaching new skills but also in improving and refining performance, as Ericsson has noted.[20] Dewey agrees that instructors have the opportunity, given their greater experience and skill, to shape and direct the student's experience, to strengthen confidence, solidify new learned skills and encourage and promote growth:

"Failure to take the moving force of an experience into account so as to judge and direct it on the ground of what it is moving into means disloyalty to the principle of experience itself. The disloyalty operates in two directions. The educator is false to the understanding that he should have obtained from his own past experience. He is also unfaithful to the fact that all human experience is ultimately social: that it involves contact and communication."[21]

From this perspective, it is the instructor's responsibility to apply what has been learned through observing the student and listening to the student's previous experiences, background, needs and level of present skills. And this all must be done in a way that enhances the student's motivation to continue to learn and grow.

These shapes of student learning support reverberated throughout the four interviews and seem especially true when working with a fearful beginner as in this description from another one of the interviewees helping a student off the lift.

"Well the lift, I explain as much as I can, the getting on and getting off part. A lot of, well most of the problems come from people not making the commitment to standing up and getting off. They want to still keep sitting there. What works really well is to say, 'bow, pretend you are taking a bow when you get off.' Yes, but getting off I mean, literally I have had to pull people off."[22]

Learning from Multiple Realms of Experience

Together, these two cases of teaching students to get off the lift represent another important concept from Dewey, that the question is not about never failing, it is instead about learning from your previous expe-

riences, and that past experiences should be welcome from within and outside the realm of snow sports.

"Unless a given experience leads out into a field previously unfamiliar no problems arise, while problems are the stimulus to thinking. […] growth depends upon the presence of difficulty to be overcome by the exercise of intelligence."[23]

While these interviewees' students feel fear and don't want to fail, it is just as important to utilize experiential resonance to grow from past failures. Past failures can take on a new context, as problems to understand and overcome through analyzing and reapplying them to a successful event, which then becomes the input for new more advanced learning.

Habit Memory and Image Memory in the Learning Process

Connecting new information to concepts and ideas previously learned is helpful in getting students to accept and integrate new information more easily, according to the experiences of the instructors in this study. While body memory or embodied knowledge weave abstract thought and body experiences tightly, some concepts may be more closely tied with images. In a similar way, the notion of "habit memory" as discussed by Bergson and Merleau-Ponty, is connected with repeated actions and experiences, while "image memory" relies on visual and symbolic representation.[24]

In this study, instructors noted the usefulness of finding images known and familiar to the students and applying them to a different context. For instance, when teaching the snow plow versus parallel ski position to students, the instructors may refer to pizza for snow plow and French fries for parallel, having students recall those images to mimic known shapes in their positioning. Some of the instructors noted that image memory appeared most likely to be effective when the students drew from their own perspectives. Figure 2 demonstrates what may be intended by the instructors when conjuring the image of French fries to teach their students a position to reference for parallel skiing, along with two of the other images that may be recalled instead from the student's experience.

For example, this instructor incorporates image memory into teaching adaptive snow skills by connecting directly to the student's interests, rather than relying on an assumed image of French fries.

Figure 2. Differences in the way the image of French fries may be recalled by the student and teacher.

"[…] French fries and pizza, okay, so I have a kid, he has gone crazy... all he ends up doing is shrieking and crying, so they give him to me [...]

And I started with the pizza and French fries and things weren't working out too well and I talked to the father and the father said, he loves [...] Thomas the Tank Engine. And then I'm saying, okay let's play Thomas the Tank Engine. Let's do pizza. No good. I said, so let's do a triangle. You know what a triangle is? You know the triangle [...] I'm thinking, that's interesting so I said, let's do rail road tracks […]

I'm eating lunch with the youngster and his father and what does the kid order? He orders French fries and when the French fries come, they were all over the place. They are facing in every different direction. You say French fries to him; he puts his feet in every single direction."[25]

This example and the next illustrate how the student's engagement strengthens their learning.[26] In the case described above, the instructor leveraged the student's past experiences, rather than relying on the more common and therefore expected or assumed image of French fries among Americans, to summon personally relatable images that could be used to understand the ski positioning being taught. In the next response, the instructor brings the student's interest into focus while observing and making use of what the student already knows by asking "What do you think the soft snow looks like?", opening the potential for a deeper level of problem solving, engagement, and success.

"So, but some people don't relate to, you know, French fries, you know, the traditional ski straight French fries I guess we're assuming it's the McDonald's model where every French fry is the same thing. But people like curly fries, so how do you relate to straight skis and curly fries? So, a lot of times I just ask the kids, 'What do you think this looks like?'

So, you know, the latest thing I do now is figure the hard snow is our bread, and then the soft snow could be, it could be cream cheese, peanut butter. So I usually ask the kids, 'What do you like?' And we're going to pretend that the flat ski is our butter knife and we're just trying to smooth that out, we want that to skim while the other one carves a little bit.

So, you know, if you say, 'Well I'm allergic to nuts.' And you use peanut butter it's just not going to work for them because they've never had it, or they can't eat it. So, you know, 'What do you think the soft snow looks like?'"[27]

Conclusion

Experiential resonance and embodied knowledge appeared especially important in teaching beginning snow sports learners throughout this study. The instructors' insights align with Cappuccio's notion[28] that the connection between abstract or symbolical knowledge and body memory has a clear and strong influence in sports skills learning and performance. Excerpts from the interviews were used as examples of how experiential resonance was furthered by the instructors in part by tapping into embodied knowledge and image memory. Embodied knowledge was represented by examples in which the student moved through mental distraction or fear to accomplishment and experience. One instructor guided the student with poles, and another instructor modeled technique that the student echoed. By helping the students muffle the distracting mental chatter caused by self-monitoring and apprehensive thoughts the students were freed to feel the technique rather than the fear.

In another case, image memory was used to foster the specific skill of parallel skiing. This instance emphasized the importance for instructors to challenge their assumptions of what image the students bring from their own past. For instance, the more typical image of French fries in

the United States, depicting uniform straight and narrow sticks, is not necessarily the one that comes to mind to every American ski learner. Carefully listening to the student, through conversation and observation can help nurture a student's image resonance during the lesson.

The student-teacher relationship was also highlighted in this study, especially the importance and effectiveness of creating a supportive relationship with trust, by listening attentively for motivation, and assessing carefully the student's previous experiences, to strengthen understanding and clear communication between student and teacher.

Finally, additional research is recommended with larger and culturally diverse samples to better understand the impact of experiential resonance in the process of snow sports learning and in other learning contexts.

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