

Resilience Research for Prevention Programs

Adventure Education: Making a Lasting Difference



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With few statistics to back up their beliefs, prevention practitioners nevertheless have long seen adventure education as a way for individuals to grow healthier emotionally, socially and spiritually. And now there is substantial support to show that out-of-class-experiences like Outward Bound can foster resilience and ultimately be a powerful prevention strategy for youth in danger of high-risk behavior. Indeed, adventure education, which has not received much research attention from the drug and alcohol prevention field, holds promise of providing lasting outcomes typically associated with resilience, such as self-concept, locus of control, and leadership.

John Hattie from the University of North Carolina, H.W. March at the University of Western Sydney in Australia, and James Neill and Garry Richards with Australian National Outdoor Education and Leadership Services conducted the meta-analysis, a statistical procedure by which they examined 96 adventure program studies with a combined total of more than 12,000 participants.

Their findings can inform community substance abuse prevention planners as well as educators who are considering adventure programs. And the benchmarks established by this meta-analysis may pave the way for others to undertake more comprehensive research on new community-based adventure programs aiming to promote resilience and reduce substance use and other high-risk youth behavior.

Adventure Programs—Resilience in Action

The theory of resilience-based prevention (Benard, 1991; Benard, 1994) has grown out of examinations of scores of studies on youth education and development as well as research on issues such as effective schools, healthy families, successful learning and learning organizations. Resilience proposes that prevention programs best succeed at reducing alcohol and other drug use, or delaying initiation, by focusing on the promotion of holistic health emotional, social, physical, intellectual, and spiritual. This resilience approach addresses human developmental needs for safety, love, belonging, respect, autonomy, challenge/mastery, power, and meaning. Prevention programs are effective to the extent that they meet these needs.

The fields of health promotion, health education, recreation and leisure studies, and experiential education have long recognized that adventure education and outdoor-experience programs are a major strategy for accomplishing holistic developmental outcomes. These two- to four-week programs usually involve small groups of

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Healthy Bodies, Healthy Souls

"The moral value of exercises and sports far outweighs the physical value."

(Plato)

"To truly learn you must push yourself to the limit. Nothing is like the rush I felt after hiking 22 miles in one day. Physically I was exhausted, but my mind and soul were soaring. Accomplishing what you once thought was impossible is an emotion that every person should push themselves to feel."

[*Outward Bound youth, 1998, p.16*]

students, young and old, who go into the wilderness with a facilitating leader. The participants are assigned challenging tasks such as mastering river rapids or hiking to a remote point. Such tasks require frequent and intense group problem solving and decision making.

The establishment and fulfillment of personal and group goals in outdoor physical activities, the group experience, and the opportunity to experience and master stressful situations are all important components of adventure programs in general and the Outward Bound program in particular (Hattie, Marsh, Neill, & Richards, 1997, p. 45). Outward Bound, a private, nonprofit group, is the largest of these programs, serving more than 40,000 students worldwide each year.

Though research on adventure education has been scarce in the fields of alcohol and other drug prevention, it has sparked great interest in juvenile justice and correction circles. Many school and community prevention programs, especially those targeting high-risk youth, have intuitively included outdoors and wilderness adventure. However, experimental, large-scale, and longitudinal studies have been almost nonexistent. Most of the research is anecdotal and correlational. In fact, evaluators have been frustrated because qualitative studies of adventure programs consistently have related positive, even profound, outcomes that could not be expressed in terms of statistical significance.

What the prevention and education fields now have, however, is an extensive meta-analysis of adventure programs. Meta-analysis is a procedure that synthesizes findings across many studies and avoids problems of small samples, diverse outcomes and multiple programs. This statistical procedure can also assess the effects of various moderators and identify the major sources of variability in the program effects. The fundamental unit of analysis is the effect size. Effect size is a scientific statistical measure of degree of change.

This meta-analysis of adventure programs was based on 1,728 effect sizes drawn from 151 samples from 96 studies of out-of-school adventure programs, primarily in the U.S. and Australia. This study involved 12,057 participants; 72% were male and 28% female, ranging in age from 11 to 42. The majority were adults or university students and the average age was 22.28. The programs included in the study operated longer and were more challenging than school-based outdoor programs, which were not included in the study. A few of the programs studied served high-risk youth.

Meta-analysis Findings

The two major findings for prevention were, first, that participants made gains on 40 outcomes; and second, that these gains *increased* over time sometimes months after participants completed programs. This contrasts sharply with most educational and prevention interventions, in which effects do not last beyond the program. Because the studies focused little on the participants' backgrounds, there remains room for future research amid these intriguing results.

Wide-ranging gains: Gains made on 40 outcomes were broken down into six categories (see Figure 1): leadership, self-concept, academic, personality, interpersonal (includes increasing positive behavior and reducing problem behaviors), and adventuresome. The wide-ranging gains reflect the holistic-health approach of resilience-based prevention.

The outcomes with the greatest effects were related to self-control and included independence, confidence, self-efficacy, self-understanding, decision making, assertiveness, and internal locus of control. Adventure programs appear to be most effective at providing participants with a sense of self-regulation, of being able to actively control oneself in order to respond appropriately to environmental challenges (Hattie et al., 1997, p. 70). Not to be underrated, The effects of adventure programs on self-esteem (.26) exceeds that of other educational programs (.19). [Moreover], the overall result is very similar to the .31 reported by Cason and Gillis (1994) in their meta-analysis based solely on adolescents (Hattie et al., 1997, p. 70).

Equally impressive to researchers were improvements in academics. Given that most adventure programs do not have goals explicitly focused on academic achievement, The effects on academic performance [found in this meta-analysis in terms of] both general academic gains such as problem solving and direct effects such as mathematics scores are most impressive (Hattie et al., 1997, p. 68). The researchers believe the active problem-solving experience, which also involves communication, cooperation, and immediate feedback, generalizes not only to future problem solving but to educational attainment as well. This corresponds to the resilience literature that identifies problem

solving as a critical individual protective factor (Benard, 1991; Masten & Coatsworth, 1998).

Adventure education also helped participants interpersonal skills. In our meta-analysis, across *all* interpersonal dimensions, there are marked increases as a consequence of the adventure programs. This is particularly noted with social competence, cooperation, and interpersonal communication (Hattie et al., 1997, p. 69). These three factors are also consistently identified in the longitudinal studies of resilience as critical individual protective factors (Benard, 1991; Masten & Coatsworth, 1998).

The category labeled adventuresome is a unique attribute of adventure programming missing in most activities of daily life and prevention and education interventions. Hence, it is not surprising that while this category had high effect sizes during the program (challenge and flexibility were .39 and .42, respectively), there were no increases shown over time after the program ended.

Gains appear to be long-lasting: Most gains, however, increased over time, in sharp contrast with many educational and prevention interventions in which effects fade after the program ends (Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995). According to the researchers, A program effect of .34 and a follow-up of an additional

FIGURE 1.

Categories and Subdomains of Major Outcomes in Adventure Research

Leadership

- ¥ conscientiousness
- ¥ goals
- ¥ time management
- ¥ task leadership
- ¥ decision making
- ¥ organizational ability
- ¥ values
- ¥ teamwork

Self-concept

- ¥ physical ability
- ¥ general self-esteem
- ¥ academic/problem-solving

- ¥ self-efficacy
- ¥ self-understanding
- ¥ independence/autonomy
- ¥ peer relations
- ¥ physical appearance
- ¥ confidence
- ¥ family-self
- ¥ well-being

Academic

- ¥ direct: math, reading
- ¥ general: GPA, problem-solving

Personality

- ¥ femininity
- ¥ achievement motivation
- ¥ aggression
- ¥ locus of control
- ¥ neurosis reduction
- ¥ masculinity
- ¥ emotional stability
- ¥ assertiveness
- ¥ maturity

Interpersonal

- ¥ cooperation
- ¥ social competence

- ¥ relating skills
- ¥ interpersonal communication
- ¥ behavior
- ¥ recidivism reduction

Adventuresome

- ¥ challengeness
- ¥ physical fitness
- ¥ flexibility (imagination)
- ¥ environmental awareness

[Adapted from Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference in *Review of Educational Research*, 67, p. 48]

.17, leading to a combined pre-follow-up effect of .51, are unique in the education literature (Hattie et al., 1997, p. 70). To put these figures in context, consider prevention education researcher Joel Brown's assessment of effect sizes: While much depends on how the data is aggregated, an effect size of .30 in educational research is definitely considered significant (personal communication, June 7, 1999).

Furthermore, the study continues, The effects of adventure programs continue to increase over time, and are maintained over considerable time. These substantial follow-up effects are unlike most educational programs, where the typical follow-up effects are negative or at best zero and there is quick fading (Hattie et al., 1997, p. 57).

Not unlike other studies, the effect sizes for the delinquents in the follow-up studies were greater than for the other groups. Violence prevention leaders may wish to note the meta-analysis somewhat replicates earlier studies widely thought to establish long-term positive effects on criminal recidivism following special Outward Bound courses. We were surprised, however, at the lack of studies involving such clients, particularly given the rhetoric about the power of Outward Bound to reduce recidivism (Hattie et al., 1997, p. 59).

Questions for future studies: The studies in the meta-analysis gathered very little information about participants' ethnicity, socioeconomic status, and academic achievement. Future evaluations could be improved in this regard. In the few studies with this information, the meta-analysis found no differences relating to ethnic group, socioeconomic status, or prior academic achievement. Nor did researchers find differences in the effect sizes between non-at-risk participants and delinquents, or between high school and university students during adventure programs. Both males and females show similar positive effects. Single-gender groups had greater mean effect sizes than mixed groups.

Influential Variables and Attributes

Three program variables were found to be most influential: the type of adventure program, the duration, and the country in which it took place. Specifically, Australian Outward Bound programs lasting over 20 days had the most powerful effects. The researchers conclude that while the belief that adventure programs work is clarified by the results of this study, only some programs work, and these with only some participants and some instructors, and probably only parts of the program are influencing outcomes (Hattie et al., 1997, p. 72). They believe that instructor effects, which could explain much of the variance in outcomes between the Australian and U.S. programs, are the most under-researched and critical areas for future study (Hattie et al., 1997, p. 73). Australian Outward Bound School's policy is to appoint only instructors who are university graduates, usually qualified teachers; and to have participants, co-leaders, and supervisors evaluate every instructor. This finding, too, is reinforced in resilience research, which concentrates on the health of the helper and calls for instructors who are trained to recognize students' natural strengths and who can model the behavior they want to see in youth.

In the absence of needed formative or process studies of adventure programs, Hattie and colleagues point to four attributes of programs with positive effects. These include: (1) intensity of immediate experience, which allows the participant

"I was really impressed with how well we were treated as students. This really was OUR course and we got to make decisions as a group. That felt weird after other trips or school where everything is planned out already for you."

[*Outward Bound youth, 1998, p.18*]

"One of the fundamental requirements for the development of a person's self-awareness is to receive feedback from others as to how they see his or her behaviors."

[*Richards, 1976, p.11*]

"I had a 17-year-old student who spent her first four days on course terrified of just about everything and sure she couldn't do anything. All she wanted was to go home. Then, five days down the trail, we stopped for a group discussion, and her fellow students told her, 'We're not going to leave you. You're worth waiting for, and we don't want you to go home.' After that, she struggled but never gave up. She made a 180-degree turn in her outlook, and at the end of course swore it was the best thing she had ever done."

[*Outward Bound instructor, 1998, p.22*]

full involvement in the activity; (2) challenging and specific goals that direct attention and effort; (3) amount and quality of feedback, which is vital to the experiential learning process (Feedback is the most powerful single moderator that improves affective *and* achievement outcomes); and (4) mutual group support to reflect, discuss, and act as well as cope with and understand one s world (Hattie et al., 1997, p.75).

Moreover, the researchers hypothesize, the great outdoors itself has a role in the success of the program. Wilderness environments could be considered *restorative environments*, as they involve being away from typical surroundings, the natural is dominant, there are opportunities for fascination, [and] learning occurs in a set of regularities within the environment that leads to *coherence* (Hattie et al., 1997, p. 76). Rhoades (1972) points out that natural settings require cooperation, clear thinking and planning, careful observation, resourcefulness, persistence and adaptability (p. 26).

These conclusions and the four program attributes for effectiveness relate directly to what evaluation research on resilience, prevention and education programs has found to correlate with successful development and learning. Adventure education can provide essential externally-generated *protective processes* such as meaningful participation and contribution, high expectation messages that challenge and motivate, and supportive relationships that connect one to others in sufficient intensity to effect positive development and successful learning (Benard, 1991). By creating a protective context, effective adventure programs encourage the internally generated *protective mechanism* of healthy psychological functioning in the form of clear thinking, common sense and creativity as the individual interacts dynamically with the environment (Rutter, 1990; Pransky, 1998).

Lessons Learned

Effective out-of-school adventure programs are powerful prevention strategies. Outcomes are comprehensive and foster general well-being. While no mention was made of specific alcohol and other drug abuse (AODA) outcomes, most of the 40 outcome measures examined constitute mediating variables commonly correlated with AODA outcomes.

Adventure program attributes need to be incorporated into more "regular" educational—and prevention—contexts. This means having *experiential* programming in which youth are directly involved in real-life experiences such as hands-on learning, service learning, and physical risk-taking. This also means prevention and education interventions that involve the participants setting specific and challenging even risk-taking goals.

Ongoing feedback is vital to this experiential learning process, and creating the context that is conducive to ongoing feedback is critical. As these researchers state, There is more potential to give feedback when the goals are difficult, where class sizes are small, when there is cooperative planning and peer tutoring, and when there is challenging problem-solving (Hattie et al., 1997, p. 75). Creating this context of *mutual group support* in which youth give each other feedback allows for personal risk-taking and assessment. Participants gain perspective on goals, values, attitudes, and feelings in a safe, respectful social context.

More research is needed on the instructor-student relationship

factor. These adventure education researchers are absolutely right in stating that instructor effects are the most under-researched and critical areas for future study (Hattie et al., 1997, p. 73). Commonly written off as instructor effects or charisma, the impact the individual teacher can have on a program needs to be better examined. Other recent studies have also found that powerful relationships between caring adults and disconnected youths can serve to reconnect them and protect them from involvement in alcohol and drug abuse. It is time to explicitly study what these turnaround mentors and models do to discover how they make these connections, and what institutions can do to support them in their life-changing work.

It is how we do what we do that counts. This lesson is a common one in resilience-based prevention and youth development programs: The process is more important than the program. It is clear that adventure programs are not inherently good. There is a great deal of variability in outcomes between different studies, different programs, and different individuals (Hattie et al., 1997, p. 77). To the extent that the process includes direct experience, challenging and specific goals, ongoing feedback, and mutual group support environmental protective factors programs will be successful. And they will be successful precisely because these attributes meet human developmental needs for safety, love, belonging, respect, autonomy, challenge and mastery, power, and meaning all part of the process of resilience.

*Think
About
It!*

The numbers show that adventure education can strengthen people's resiliency skills, from sharpening their leadership abilities to improving their capacity to cooperate. Who in your community would benefit most from the adventure education and its lessons: Young people? Older students? Educators?

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The National Resilience Resource Center (NRRC) is located at the University of Minnesota. Executive Director Kathy Marshall and associate for program development Bonnie Benard guide long-term systems change initiatives in selected school and community sites. Resilience research-based systems change training and technical assistance services are available on a fee-for-service basis. For service related requests write National Resilience Resource Center, University of Minnesota, College of Continuing Education, 202A Wesbrook Hall, 77 Pleasant Street SE, Minneapolis, MN 55455 or contact NRRC@cce.umn.edu. The NRRC logo was created by John[®]B. No Runner.

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