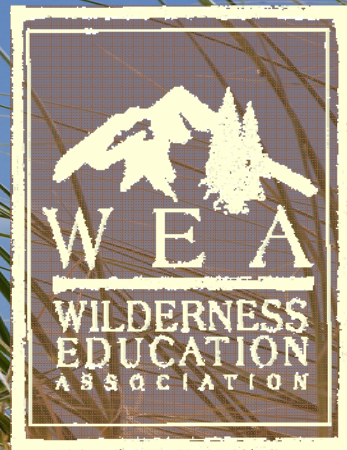


Proceedings of the 2008 & 2009 National Conference on Outdoor Leadership

"Connecting with Nature"

*February 12-16, 2008
Mission Bay San Diego, CA*



Celebrating 30 Years

"Necessary Journeys"

February 4-7, 2009
Bloomington, Indiana

Hosted by:



Wilderness Education Association

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“Connecting with Nature”

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“Necessary Journey”

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Proceedings of the National Conference for Outdoor Leadership

Introduction & Acknowledgements

To all WEA Members, Conference Attendees and Outdoor Professionals:

Thank you for your continued support of the Wilderness Education Association. Special thanks and gratitude go to the 2008 & 2009 Conference Committees for coordinating outstanding workshops, training, guest speakers, awards, vendors, socials, discussions, debates and networking at the Bahia Resort in San Diego, 2008 and Indiana University in Bloomington, 2009.

In the following pages, please find the WEA's 2008 & 2009 National Conference on Outdoor Leadership Proceedings. WEA truly appreciates the time, effort, research and practical field application of our workshop presenters and their willingness to share their work to improve our profession. My hope is that the invaluable information contained within will further the growth of the WEA both as an organization and as an outdoor leadership curriculum steward. Furthermore, I look forward to a larger and larger Conference Proceedings in the years to come.

Lastly, I wish to thank Dr. Maurice Phipps and Aya Hayashi for compiling, editing and formatting these proceedings.

Chris Pelchat
WEA Board of Trustees President

A Brief History

The Wilderness Education Association helps people enjoy and protect our nation's most precious resource: Our wilderness areas. The WEA has been training and certifying outdoor leaders around the world for nearly 30 years, teaching students safely and effectively to lead groups in the outdoors without harming the environment.

In addition, working with national conservation groups and government agencies, the WEA educates the general public in how to appreciate and conserve the wilderness through special curricula and public service information campaigns.

Legendary mountaineer Paul K. Petzoldt, Chuck Gregory, Robert Christies, and Dr. Frank Lupton, founded the WEA in 1977. The organization's mission includes "...promoting the professionalism of outdoor leadership and to thereby improve the safety of outdoor trips and to enhance the conservation of the wild outdoors..."

The WEA founders set out to develop an organization that could train outdoor leaders, instill a sense of stewardship toward the wild outdoors, and provide the skills and knowledge necessary to lead and teach the public in the appropriate use of wilderness areas. The result is one of the most comprehensive wilderness education and outdoor leadership training organizations in the country.

The WEA 18-point curriculum emphasizes experiential teaching in the field with a primary focus on judgment and decision-making. WEA course graduates not only know their abilities, but also learn to respect their limitations.

WEA courses are offered through a network of 50 accredited affiliates around the world. Many WEA courses earn college credit.

Consulting and program development services are an integral part of the WEA mission. Contact the National Office regarding curriculum development, risk management, instructor recruitment, and standards for outdoor leaders.

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Sea Kayak Navigation I & II

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Abstract

A hands-on, experiential workshop. Topics include: nautical charts, kayak navigation and weather issues, tide tables and currents. No previous experience required, only a strong desire to plan a kayaking trip.

Workshop Outline:

1. Nautical Charts: What they can tell you about the area where you will be paddling.
2. Point-to Point navigation: How do you use nautical charts and the compass rose to determine your magnetic compass bearing from one point to another.
3. Tides: What kayakers need to know about tides and tidal currents.
4. Wind and Weather: Some important points to consider before launching your kayak, even in protected inter-coastal waters.

The Role of Navigation from a Kayak

Sea Kayak Navigation is not so concerned about getting lost as in wilderness hiking. Navigation focuses on avoiding hazardous areas that could threaten a paddler's safety: strong currents, winds, waves or ships.

Once underway with a well-planned route, navigation consists of keeping track of where you are along that route. You should always be able to look at a chart and point to where you are.

Nautical Charts and Chart Reading

Charts show water depths, shoreline composition, tidal range on shore, rocks, navigation aids (buoys and such), compass directions and shore side buildings, etc visible from the water.

One 7 inch hand span = 1 nautical mile at 1:10,000 scale; 4 miles at 1:40,000 scale, this is the smallest scale that is good for kayak navigation.

Chart No. 1 is a list of all markings on the chart (same name in Canada, slightly different meanings).

Water depth (**soundings**) measured in fathoms, feet or meters (Canada). May combine fathoms and feet up to 11 fathoms.

Foreshore (uncovers and covers with tide) is **green** on the chart.

Choosing a Landing site – Check the width, composition and slope of the foreshore and beach from the chart. Wide foreshores provide a gentle slope, but will require a long boat haul at low tide. Composition may be mud, sand, stones or rocks. The composition details are described in Chart #1

Blue is shallow water, White is deep water, Yellow (Tan) is land.

Nautical mile = 1.15 miles, 6080 feet, 1852 meters (exactly), 1' of latitude.

Longitude at equator, 1' = 1 nautical mile, at 45 deg latitude, 1' = .66 nautical miles.

Compass Rose – Outer scale is true scale, inner is magnetic and points (1 point = 11.5 deg)

Heading – Direction the boat is pointed

Course – Direction you want to go

Bearing – Direction to some landmark

Aids to Navigation – external to vessel, lights, foghorns, etc.

Lights – F fixed; G Green, R Red, Nothing White; Fl Flashing

FL 6sec 27ft 10M – Flashing white light every 6 sec, 27 ft above MHW, visible 10 Miles

Topographic maps provide information not available on charts such as specific terrain contours on land.

Compass Use

Magnetic north in Pacific NorthWest is about 20 deg east of True north, in New England it is about 20 deg West. True/Mag north is equal along west coast of Florida and northward.

The difference between true and magnetic north is the **deviation**

To get true reading for magnetic in the NW, **add** the deviation to the compass reading.

Unlike hiking compasses, marine compasses have no adjustments for magnetic variations. **Note:** true bearings are seldom used in kayak navigation, all bearings are given in magnetic readings.

A Marine compass is usually mounted on the front of a kayak between 3-6 feet ahead of the cockpit. It must be mounted so that the **Lubber's line** of the compass is parallel to the boat center line.

The Effect of Wind on a Kayak

A 15 knot headwind exerts equivalent pressure to paddling 3.5 knots with no wind. To maintain 3.5 knot speed, you must paddle twice as hard, or you will slow to approximately 2.5 knots. With a 20 knot headwind, you will slow to approximately 2 knots.

A 15 knot tailwind will increase your 3.5 knot speed to approximately 4 knots. A 20 Knot tailwind will increase your speed to approximately 4.5 knots.

15 knot wind will cause you to drift at approximately 2 knots

Beaufort wind scale

4+ knots – feel the wind on your face

7-10 knots – scattered white caps

11-16 knots – numerous white caps, small waves becoming larger

17-21 knots – many white caps, some spray, moderate waves taking longer form

22-27 knots – whitecaps everywhere, more spray, larger waves forming

Sea Breezes – Generally blow from the area of most water to most land

Increase in strength rapidly after mid-morning, Peak about 2 hours after mid-day and die off by sunset. Routinely build to 20+ knots in some areas.

Wind in the morning or night is not from a sea breeze.

In Northern latitudes, fair winds are usually from the NW quadrant, foul winds from the South. A shift of winds from NW to W to SW to S indicates a coming storm. However, along a coast, the afternoon sea breeze will tend to blow toward the land, possibly shifting the wind to the West on the West coast. A lack of sea breeze or dying in the afternoon, may indicate an approaching system, especially if accompanied by a change in cloud type.

Tides and Currents

Tidal bulges are created by the moon circling the earth and the earth rotating around the sun. The sun's gravitational pull is considerably less than that of the moon. There are typically two tidal bulges (high tides) per day. The average tidal bulge in mid-ocean is only about 18 inches, however, in specific locations along the shore, it may be up to 40 feet.

A lunar or tidal day is 24 hours, 50 minutes long.

Semidiurnal tides – two highs and two lows of similar height, US East coast, most common worldwide

Diurnal – One high and one low each day, northern Gulf of Mexico, some places in BC – this is the least common

Mixed – Two highs and two lows, but one is a high-high the other a low-high or low-low and high-low, typical along the north American pacific coast (e.g the San Juan Islands)

Mean range of tides tends to be larger in inland waters at Northern and Southern Latitudes. (Alaska and Chile).

Tide tables often do not reflect daylight savings time, so in the summer, you may have to add one hour to the tidal predictions.

Tide tables include primary and subordinate stations. Find the subordinate station nearest your location to get the value to add or subtract from the height and time predicted at the primary station.

Primary tables have entries for every day of the year, subordinate stations only include the differences.

Spring tides occur at full and new moons, neap tides at ¼ moon. Spring tides are about 20% higher than average, neap tides 20% lower. The largest Spring ranges occur near the solstice (June 21, Dec 21)

Tide heights determine how much beach is exposed when landing and launching. This is also important if planning to cross tidal flats and other shallow waters.

Tidal currents are impacted by the tides, but land shapes and water depth impacts the timing and intensity of these tidal flows. Logic would suggest that slack currents correspond to low and high tides. This is true in some cases, but just as often, it is not the case.

In some complex waterways, the current may ebb or flood continuously, regardless of the tides.

The strongest tidal currents occur at constrictions in inland waterways that lay between large bodies of inland water and the open ocean.

Winds, atmospheric pressure and river flows may impact actual tides and currents from predictions.

Tidal currents include a long and lat to the nearest minute (one mile), this is not very accurate, the written descriptions are much better. (e.g., .8 miles NW of point Roberts). Tidal current time predictions are usually within 30 minutes, speed within 30%.

Most tidal references are at mid-channel and do not represent flows closer to land where kayakers tend to paddle. Don't forget to add one hour for daylight savings in the summer.

Back eddies develop in bays behind points protruding into the waterway.

Shallow underwater banks can increase current flow and create tidal rips as can points of land jutting out in to the tidal flow.

Steady winds blowing for ½ day or longer create surface flows of approx 3 % of the wind speed. A 20 knot wind can create a .6 knot current. When wind blows in the flood (or ebb) direction, it will both strengthen and lengthen the flood flow.

Waves move at .7x the wind speed and are about 25x longer than they are steep. If a 10 knot wind generates waves into a 1.5 knot current, the wave shortens to 7x its height. At this steepness, the wave can break.

Crossing Tidal Currents

While navigating a kayak, it is not necessarily imperative to know the exact speed of the current, just knowing the direction and its relative speed is usually sufficient. Strong - (over 1.5 knots), Moderate (.5 to 1.5 knots) or Weak - (less than .5 knots).

A GPS can often give you a good idea of actual current as it is affecting your travel speed. Once you benchmark your average cruising speed in various non-current conditions, the difference between your actual GPS speed and your known benchmark speed is a rough estimate of the current. For most intermediate paddlers, the benchmark on flat water with no wind is between 3 and 4 knots.

A crossing current will cause you to drift off course. The amount of drift (called set) is equal to 6 degrees for a current that is 1/10 of your paddling speed. So, if your paddling speed is 3 knots, a .3 knot current will set you 6 degrees, a 1.5 knot current will set you 30 degrees. To complete the crossing, adjust your course 30 degrees up or down from your pre-calculated course.

Ferrying - Usually the best option to deal with drift is too ferry into the current. The ferry angle in the above scenario with a 1.5 knot current will be 30 degrees into the current. Although it is important to calculate an estimated ferry angle before starting to cross, it is not usually necessary to rely on your calculations once the crossing is initiated. The preferred option is to use two range markers on the shore ahead. Set your ferry angle so that **the two**

range markers remain lined up and you will have the perfect ferry angle for the current and paddling speed you are working with. If the current speed changes during the crossing, simply adjust your ferry angle.

As current speed approaches paddling speed, ferrying puts you in the channel for an extended period of time. If the current is equal to the crossing speed, the ferry angle is 60 degrees and the crossing time will double. In this case, you might want to consider reducing the ferry angle to say 30 degrees, allow yourself to drift downstream and then either paddle back up stream in the eddy on the far side or on the departure side.

Timing the crossing – The safest time to cross or traverse a channel is at slack water. The time and duration of slack is listed in the NOAA Tidal Current Tables.

When traversing downstream, you may choose to go with the flow. Currents of up to 3-4 knots can provide a fun, fast ride as long as the wind is calm or blowing with the current. If the wind is blowing against the current, dangerous standing waves can develop very rapidly while in the middle of a channel.

Marine Radios – Limited to line of sight. Between kayak communication is usually limited to 3-4 miles.

Channel 16 – Emergency calls or Coast guard (switch to 22A if non-emergency)

Channel 9 or 16 – to contact other vessels, then switch to 68, 69, 72, or 78

Channel 13 or 14 – monitor ship traffic, port operations, visibility reports.

Channels 24 to 28 or 84-88 for marine telephone operator, varies across locations.

Rules of the Road

If you are being overtaken by another vessel (defined as within 67 degrees of your course from the stern), you have the right of way. In this case, it is usually best for you to maintain your course and allow the other vessel to alter his. Otherwise, the only rule is that other vessels do not have the right to run over you.

In all cases, you must take whatever action you feel is necessary to avoid a collision.

In **Narrow Channels**, kayaks should stay as close to the right side of the channel as reasonable. You may not impede large vessels in the channel, to impede means to cause them to alter course.

When crossing defined **traffic lanes**, do so at right angles to the traffic - kayaks have no right of way in traffic lanes.

If a large ship sees you in a potentially hazardous situation, it will sound one long blast of its horn. Five short blasts indicates imminent danger

Night Rules – Kayaks must carry a bright white light to shine at approaching vessels. It is a good idea to have a lesser white light on your hat or back of life vest so others can see you at all times. Red and Green lights are not legal for kayak use since they may be confused with power boat running lights.

In addition to a bright light, all vessels must carry three coast guard approved visual distress signals at night. Hand-held or aerial flares are preferred by most kayakers.

On Inland waters, a strobe light is considered a distress signal.

Navigation Planning

Float plans should be filed with a friend before every trip: Where you plan to go, when you plan to be back, the number of people in the party, a description of the boats, contingency plans, where you will be parking, car make, model and license. Be sure to call when you return.

Chart Preparation before departing is the key to good navigation. Mark the chart with the following items:

Magnetic course bearings

Mileage along the bearings

The estimated time for each departure day, crossing, arrival time, etc. Then when paddling, note the actual time on the chart you reached each point.

Other Interesting Navigational Facts and Tricks

Two or more Lines of Position (LOPs) required for a position fix. LOPs should be at least 30 degrees apart. Also, use the closest range to get highest accuracy.

Use a tree and a mountain peak as natural ranges to detect current drift.

Use a tree and a moving boat to determine if you are on a collision course with the boat.

2 foot object (kayaker eye level) can see 1.5 miles to the horizon. 1.5 is the square root of 2.

100 foot object is visible 10 miles (the square root of 100 is 10)

Winking – a trick used to figure your distance off of the shore. Hold your finger at arms length, calculate the distance between objects for your left eye, then right eye. Multiply

this distance by 10 for distance off. E.g. If the actual distance (from a chart) between winked object is 1.5 miles, your distance off shore is 15 miles.

Waves break when water depth diminishes to **1.3 times** the wave height.

To interpolate current speeds between slack and peak, divide the time into three steps, during the first step after slack, speed with increase to 50%, during the second step to 90%, during the third step to 100%.

Tidal current in shallow water along a shore line is slower than deep water mid-channel due to the frictional drag of the bottom slowing the water.

When working with Tidal Current Tables, a rule of thumb for calculating the duration of slack below .5 knots is to divide the maximum current speed into 60. For example, if max ebb will be 3 knots and max flood will be 4 knots. You will have a slack window of $60/3 + 60/4 = 35$ minutes. The problem is that current tables only provide an estimate of the exact time of slack. These times are often off by +/- 30 minutes, so it is always a good idea to arrive 30-60 minutes early and sample the water to determine the actual best time to cross or traverse the channel.

Fog – Radiation fog comes with no wind and burns off as the day progresses. Sea fog comes with heavy wind and may last for several days. Sea fog is especially dangerous because it may move in rapidly and unexpectedly.

In fog, ships will sound two long blasts, one second apart, every two minutes. If you hear a horn, it is recommended to set your stop watch and point toward the sound with all boats lined up single file. You can also cup your hands over your ears. This puts you in the best position to detect the location of the vessel on the next blast. If after two minutes, you do not hear another blast, the vessel is headed away from you.

Personal whistles may be used to keep paddlers together in a fog.

Suggested Readings

Navigation

Fundamentals of Kayak Navigation, 3rd ed

By David Burch

Sea Kayak Navigation Simplified

By Lee Moyer

Sea Kayak Navigation

By Franco Ferrero (UK)

Current Atlas: Juan de Fuca Strait to Strait of Georgia (A map of hourly tidal currents to be used in conjunction with the Washburne Tables)

The Washburne Tables (Annual Supplement to Accompany Current Atlas)
By Randel Washburne

U.S. Coastal Pilot: Pacific Coast
NOAA (Detailed weather and navigational information on Pacific coastal waters)

Sailing Directions, British Columbia Coast
Canada Department of Fisheries and Oceans, Scientific Information Publications
(Same as U.S. Coastal Pilot, for Canadian waters)

Nav-Aid for Kayakers (A great item for working with charts on the deck of your kayak.
Includes a little booklet on using the nav-aid for kayak navigation).
To order send \$8 to: Chuck Sutherland, 2210 Finland Rd., Green Lane, PA 18054

Marine Weather

Northwest Marine Weather: From the Columbia River to Cape Scott
By Jeff Renner

Introductory Kayaking

Sea Kayaking: A Manual for Long-Distance Touring, 5th Ed.
By John Dowd

The Coastal Kayaker's Manual, 3rd ed: The Complete Guide to Skills, Gear, and Sea Sense
By Randel Washburne

Complete Book of Sea Kayaking, 5th ed.
By Derek Hutchinson

Basic Book of Sea Kayaking
By Derek Hutchinson

Sea Kayaker's Savvy Paddler (Interesting tips for setting up your kayak)
By Doug Alderson

Safety and Skills

Sea Kayaking: Safety and Rescue
By John Lull

Sea Kayaker's Handbook of Safety and Rescue
By Doug Alderson and Michael Pardy

Sea Kayak Rescue
By Roger Schumann and Jan Shriner
Sea Kayaker's Deep Trouble
By Matt Broze and George Gronseth

The Bombproof Roll and Beyond
By Paul Dutky

Eskimo Rolling
By Derek Hutchinson

Nigel Foster's Surf Kayaking
By Nigel Foster

Sea Kayak Trip Narratives

(Note: Each of these is a special gem, well worth your time)

Homelands: Kayaking the Inside Passage
By Byron Ricks

Rowing to Latitude
By Jill Fredston

Arctic Crossing
By Jonathan Waterman

Southern Exposure: A Solo Sea Kayaking Journey Around New Zealand's South Island
By Chris Duff

On Celtic Tides: One Man's Journey Around Ireland by Sea Kayak
By Chris Duff

The Hidden Coast
By Joel W. Rogers

Outside Adventure Travel: Sea Kayaking (Outside Books)
By Jonathan Hanson

Kayaking the Vermilion Sea: Eight Hundred Miles Down the Baja
By Jonathan Waterman

River: One Man's Journey Down the Colorado, Source to Sea
By Colin Fletcher

Passage to Juneau: A sea and Its Meanings (A sailors tale, but worth your time)
By Jonathan Raban

Highliners (Nothing about kayaking but a great story about commercial fishermen of Alaska)
By William McCloskey

Sea Kayak Travel Guides

The Cascadia Marine Trail Guidebook

By Washington Water Trails Association (You must be a WWTA member to get this one)

Kayak Routes of the Pacific Northwest Coast

Edited by Peter McGee

Kayaking Puget Sound, the San Juans and Gulf Islands: 50 Trips on the Northwest's Inland Waters, 2nd ed

By Randel Washburne

The San Juan Islands: Afoot and Afloat (Not kayaker specific, but an excellent reference)

By Marge and Ted Mueller

Sea Kayak Around Vancouver Island

By Doug Alderson

Island Paddling: A Paddler's Guide to the Gulf Islands and Barkley Sound

By Mary Ann Snowden

Guide to Sea Kayaking in Southeast Alaska: The Best Day Trips and Tours from Misty Fjords to Glacier Bay

By James Howard

Kayaking the Inside Passage: A paddling Guide from Olympia, Washington to Muir Glacier, Alaska

By Robert H. Miller

Sea Kayaking in Baja

By Andromeda Romano-Lax

River Guide to Canyonlands National Park and Vicinity (the book for paddling the Green and Colorado Rivers through Canyonlands)

By Michael Kelsey

Boater's Guide to Lake Powell

By Michael Kelsey

Miscellaneous

Oceanography and Seamanship (A real monster, but a true classic)

By William G. Van Dorn

Oceanography of the British Columbia Coast

By Richard Thomson

Waves & Beaches: The Dynamics of the Ocean Surface
By Willard Bascom

Baidarka: The Kayak
By George Dyson

The Starship and the Canoe
By Kenneth Brower

Web Sites

NOAA Tide Charts http://co-ops.nos.noaa.gov/tide_pred.html

NOAA Tidal Current Tables <http://140.90.78.170/currpred.html>

U.S. Coastal Marine Forecasts <http://www.nws.noaa.gov/om/marine/zone/west/sewmz.htm>

Sea Kayaker Magazine Online <http://www.seakayakermag.com/>

American Canoe Association <http://www.acanet.org/>

British Canoe Union North America <http://www.bcuna.com/>

Rocky Mountain Sea Kayak Club <http://www.rmskc.org/>

Kayak Expert Center –Atlantic Kayak Tours <http://www.atlantickayaktours.com/index.html>
A lot of excellent kayak information online

Aqua Adventures (San Diego) <http://www.aqua-adventures.com/index.html>
Jen Kleck is the best of the best for North American BCU Sea Kayak coaches

Discovery Sea Kayaks – San Juan Island <http://www.discoveryseakayak.com/index.html>

Body, Boat and Blade – Orcas Island <http://www.bodyboatblade.com/>
Some of the best instruction available, Shawna and Leon are world class.

Anacortes Kayak Tours <http://www.anacorteskayaktours.com/>

San Juan Kayak Expeditions <http://www.sanjuankayak.com/>

Lopez Kayaks in the San Juan Islands <http://www.sanjuankayak.com/>
Excellent boats and the best prices in the islands for kayak rentals.

Paddling South <http://www.tourbaja.com/paddlsth.html>
Did I mention paddling in the Baja? Good prices, great food and fun/local guides

Winter Backpacking on the Appalachian Trail

Dale DeVoe, Colorado State University

Abstract

This presentation chronicled the experiences of a backpacker during the winter months. Most Appalachian Trail long distance hikers start their trips in spring. Starting in January guarantees hiking in winter conditions for much of the first several months in which hikers will encounter blow-downs, high water at stream crossings, wet and muddy trail, and snow especially at higher elevations. The degree of preparation, experience, and self-sufficiency required is far greater than for summer hiking. Advantages of this alternative itinerary include crowd avoidance, lack of ferocious bugs, open campsites, missing uncomfortably hot and humid conditions, and the opportunity for solitude.

Key Words: Backpacking Trip, Physical Activity, Lipids, Lipoproteins, Cholesterol

Introduction

Long distance hiking requires a unique blend of cardiovascular fitness, muscular fitness, resistance to musculoskeletal problems, and psychological stamina as well as the necessary outdoor skills. Proper planning and preparation are the keys to a safe and successful wilderness journey of any length including a long distance backpacking trip on the Appalachian Trail. Wilderness backpacking offers a paradigm that could profoundly affect the way in which an individual views their potential. The main purpose of this account was to more accurately portray the principle dimensions of winter wilderness travel. This presentation covered equipment selection, re-supplying, trail safety and the psychology and philosophy of long distance hiking. Open discussions and slides were used to cover additional information.

Numerous studies have been carried out on a variety of intensities and durations of physical activity that have shown a moderate positive effect on metabolic and cardiovascular risk factors. A review of 51 published studies of aerobic exercise performed at moderate to hard intensity, of at least 12 weeks in duration, found inconsistent results to improvement in blood lipid profiles (Leon & Sanchez, 2001). The most commonly observed change was an increase in HDL (change in HDL ranged from a decrease of 5.8% to an increase of about 25%, with a mean increase of 4.6% across these reviewed studies) with reductions in LDL (5.0%), total cholesterol (1.0%), and triglycerides (3.7%) less frequently observed. In an additional review (Kelley, Kelley, & Tran, 2004) of 25 walking programs of at least 8 weeks in duration, reductions in lipoproteins were found to be independent of changes in body composition.

In 2002, 73.5 million people in the United States hiked and 24.5 million backpackers spent an average 17 days a year in the wilderness (NSRE, 2002). The Appalachian Trail is the

premier recreational hiking trail in the United States, a continental-scale wilderness pathway set aside by the Congress and the National Park Service for foot travel only. The route of the trail closely follows the ridge line of eastern America's Appalachian mountain chain for 3,500 kilometers with its southern terminus in northern Georgia and northern terminus in north central Maine. The Appalachian Trail Conservancy (Harpers Ferry, WV) estimates that 3 to 4 million visitors hike a portion of the Appalachian Trail each year with almost three thousand yearly reported long distance backpackers. Most of these reported long distance backpackers fall in the 25-and-under or 45-and-older age groups. There has been little assessment of the health needs of long distance backpackers (Boulware, Forgey, & Martin, 2003; Crouse & Josephs, 1993; Poretz, 1992) and no formal documentation on the impact of backpacking long distances over an extended period of time on cardiovascular disease risk factors (dyslipidemia, elevated blood pressure, high abdominal adiposity). Accordingly, this field study provided the extended time necessary to properly assess the conditioning effects of a long distance hike. The significance of this study lies in the usefulness to future long distance hikers and the need to promote the use of public lands to enhance physical and psychological health.

Method

The participant (male, aged 49 years) was an experienced backpacker possessing the necessary outdoor skills. Assessment of body fat (%) by hydrostatic weighing and skin-fold assessment (seven-site), vital signs and electrocardiogram, anthropometric measurements, height, and weight were taken pre- and post-hike. Vital signs and electrocardiogram were taken at rest, while sitting and standing, and during graded exercise testing. Dietary analysis, standard fasting (12 hour) blood work and urinalysis were determined pre-, during-, and post-hike. Standard fasting blood work and urinalysis for pre-, during-, and post-hike were analyzed by the same laboratory.

Results

The participant completed a long distance hike of 118 total days on the Appalachian Trail during which 104 days were spent hiking a distance of 2669 kilometers. The participant began the hike in Georgia on January 3rd and finished in the White Mountains of New Hampshire on May 1st. During this time the participant was backpacking under a wide assortment of environmental conditions and terrain. On higher altitudes (1,500 – 1,800+ meters) in the southern Appalachians the participant encountered snow for 5 weeks with typical temperatures in the -6 to 0° C range. Snow depths ranged from 5 to 7 centimeters to 40+ centimeters and on many mountain ridges the participant encountered drifts knee to thigh deep. Throughout March and April the participant encountered customary east coast spring temperatures ranging from -6° to 10° C. High winds and rain on a number of days also were factors which made for hiking in very demanding climatic conditions. Pulse rate was measured periodically and the average hiking heart rates ranged from 60% to 73% of maximal indicating a relatively moderate level of exertion. The episodic measure of heart rate demonstrated variability related to difficulty of the terrain and speed of the hiking gait.

An additional component of this presentation demonstrates that a long duration backpacking trip normalizes lipids without medication. Studies undertaken to explore the physiologic and metabolic responses from backpacking and other outdoor activities conducted in natural outdoor conditions have been for relatively short durations. This single subject study provided the extended time necessary to properly assess the effects of a long distance hike in order to determine the physiologic and metabolic responses (changes in body composition and blood lipid profile). Assessment of body fat (%) by hydrostatic weighing and skinfold assessment, circumference measurements, height, and weight were performed pre- and post-hike. Dietary analysis, standard fasting blood work and urinalysis were determined pre-, during-, and post-hike. Pre-post differences showed decreases in body weight (kg) 85.3 to 73.9 [-11.4 (-13.4%)]; body fat (%) hydrostatic weighing 25.18 to 14.31 [-10.87 (-43.2%)]; body fat (%) skin-folds (seven-site) 23.79 to 11.61 [12.18 (-51.2%)]; and BMI 29.37 to 25.46 [-3.91 (-13.3%)]. Pre-post differences in blood lipid changes over the course of 17 weeks were: triglycerides (mg·dl⁻¹) 319 to 79 [-240 (-75%)]; cholesterol (mg·dl⁻¹) 276 to 196 [-80 (-29%)]; HDL (mg·dl⁻¹) 46 to 63 [+17 (+37%)]; LDL (mg·dl⁻¹) 167 to 118 [-49 (-29%)]; LDL/HDL Ratio 3.63 to 1.87 [-1.76 (-48%)]; Cholesterol/HDL Ratio 6.00 to 3.11 [-2.89 (-48%)]. The results of this field study demonstrated that the physical activity associated with an extended backpacking adventure can significantly reduce and clinically normalize blood lipids and lipoproteins without medication and very positively impact body composition and weight.

Discussion

The caloric demand of engaging in this type of extended physical activity is high. During a single-day exposure to backpacking the main metabolic fuel would be glycogen; however, repeated bouts of this type of activity would also result in an increase in fat metabolism. The associated mobilization of free fatty acids suggests the possibility of using hiking as a pleasant method of treating high adiposity. The participant's caloric needs were increased in response to colder temperatures, an increase in daily hiking time as the participant became more conditioned to the physical activity and subsequently increased the usual daily amount of time spent hiking, and a change in body mass to a higher muscle to fat ratio that occurred during the long distance hike. Consequently, the participant consumed larger quantities of food with high fat content during re-supply stops along the way which exceeded the standard consumption during the hike. Both type and amount of food were considered carefully during the replacement of provisions along with impact on backpack weight and the participant self-selected a diet with a high percentage of fat. The participant gained significant health benefits attributed to the large amount of extended physical activity in spite of consuming a diet with a high percentage of fat as evidenced by the dietary analyses.

Changes in blood lipids have been shown to be associated with reduced body fatness rather than increased aerobic fitness (Katzmarzyk, et al., 2001) however, walking has reduced LDL and the ratio of TC/HDL independent of changes in body composition (Kelley, Kelley, & Tran, 2004). Both the effect of environmental factors and genetic factors on cardiovascular

diseases risk factors requires more well controlled studies. With extended knowledge on these factors it may be ascertained as to when and at what rate specific changes in body composition, weight, and blood lipids occur.

The observed changes in blood lipids and lipoproteins in this study were considerably more marked than the moderate positive effects found in previous published studies on exercise training alone or in combination with dietary intervention (Leon & Sanchez, 2001). The findings of the present field study demonstrated that the physical activity associated with an extended backpacking adventure can significantly reduce and clinically normalize blood lipids and lipoproteins without medication and very positively impact body composition and weight.

This presentation is significant to the fields of recreation and public health by promoting healthy lifestyles through physical activity in America's great outdoors. Health is a primary reason American adults say they engage in outdoor recreation and backpacking has a rapidly growing group of participants. Further, this inquiry supports the Department of Health and Human Services' Steps to a Healthier US initiative and the need to promote the use of public lands to enhance physical and psychological health and encourage physically active lifestyles.

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The Role of Ritual in Wilderness Leadership Training

Jack Drury

Workshop Description: There is a Wilderness Education Association National Standard Program outcome that says that outdoor leaders need to be able to “implement and ritualize the decision-making process”. This session will explore what is meant by “ritualize”, how you can ritualize decision making, and other aspects of wilderness leadership training that might be “ritualized”.

Outcome: Participants will develop their own definition of “ritual” and have a deeper understanding of how one might ritualize a variety of components of the WEA curriculum

- What did it take to be successful at lining up by the number of days you have spent on WEA courses? (brainstormed/distilled by the group)
 - Knowledge
 - Remember your # of days
 - Memory – your group number
 - Skills
 - Math
 - Communication
 - Self-assess (critical thinking)
 - Dispositions
 - Humility
 - Trust
 - Cooperation
 - To be totally present
 - Willingness to participate

Quality Conversation Criteria: (front loaded)

We will see and hear the following to let us know that a “quality conversation” is taking place in this workshop:

1. Everyone has an equal opportunity to take part
2. Open body language
3. Focus on the issues not on the people
4. Attentive body language (eye contact, nodding etc.)
5. Appropriate tone of voice
6. Checking for understanding (echoing and paraphrasing)

Essential Elements of the WEA Experience – Brainstormed/distilled by the group

1. Physical and mental challenge
2. The assessment process
3. Takes place in the outdoors (wilderness)
4. Opportunity to deal with conflict
5. Leader of the Day opportunities

6. Teaching/Learning of judgment and decision making
7. Teaching/learning of the 18 point curriculum
8. Certification opportunities
9. Journaling
10. SPEC teaching/learning opportunities
11. Fun
12. Teaching/learning LNT principles and practices
13. Student teaching
14. Good cooking (Jack added)
15. Stretching the comfort zone (Jack added)
16. Short days of travel – as a rule – so you have time for classes and enjoyment (Jack added)

W.A.S.H. (We all speak here) activity – Brainstormed/distilled by the group

1. WHAT do we mean by “ritualizing decision making”? (or ritualizing anything else for that matter)
 - a. Consistency in the process to get through the process
 - b. Habit or pattern in taking a plan of action
 - c. Implementing a protocol
 - d. Something having intrinsic value
 - e. A learned and practiced pattern
 - f. May include the idea of sacredness
 - g. Includes valued reflection
 - h. Preparation leading to competence
 - i. There may be a symbolic element
2. WHY is ritualizing important in teaching/learning about decision making and/or leadership?
 - a. It is a way of simplifying something complex and over time gaining meaning
 - b. It provides a link to teaching judgment and the DM process
 - c. Provides the importance of consequences
 - d. Adds to a level of comfort
 - e. Promotes transference
 - f. Provides a framework for leadership and DM
 - g. It lends to the idea of larger commitment - responsibility
 - h. Reflection comes from ritual
3. HOW might we ritualize decision making?
 - a. Awareness – make students aware of the rituals that you are using and explain that they are indeed rituals
 - b. Debrief/provide feedback
 - c. Mentoring/role modeling
 - d. Use/teach the tools e.g., the rational DM model
 - e. Use teachable moments and case studies
 - f. Create a framework/structure allowing rituals

- g. Provide intentional guided practice
 - h. Repetition
 - i. Initially make it mandatory and eventually it will become ritualized
4. WHAT other content areas might benefit IF we were to “ritualize” certain activities?
- a. As things become habitualized eventually they take on special value and become rituals
 - b. Almost anything – the ritual moments
 - c. Activities of daily living
 - d. Adapting to the context
 - e. Journaling
 - f. Assessment
 - g. Priorities
 - h. Safety practices

(See the Challenge below that might be appropriate for WEA students.)

WEA CHALLENGE

Created by Jack Drury

Knowledge Outcome	Title	Skill/Disposition Outcome
<p><i>Outdoor leaders provide evidence of their knowledge and understanding by...</i></p> <p>18. Teaching, Processing & Transference</p> <ul style="list-style-type: none"> ▪ Describe a selection of activities, tools, and techniques that will facilitate learning in the wilderness 	<p><i>Ritualizing</i></p> <p>WEA Practices</p>	<p><i>Outdoor leaders provide evidence of their dispositions by...</i></p> <p>1. Decision Making & Problem Solving</p> <ul style="list-style-type: none"> ▪ Ritualizing and modeling the decision-making process

Essential Question or Key Issue:

The WEA outcomes say that outdoor leaders need to be able to “implement and ritualize the decision-making process”. What do they mean by “ritualize”? How do we ritualize decision making? Are there other things on WEA courses that should be “ritualized”?

Description of Challenge/Task/Performance:

Robert Fulghum defines ritual as “Habits that take on special meaning”. Some have defined a WEA Course ritual as a symbolic activity that, owing to the learning and/or satisfaction that group members experience through its repetition, is acted out in a systematic fashion over the duration of a course. Through their special meaning and their repetitive nature, rituals contribute significantly to the establishment and preservation of the group’s collective sense of self, and maximize learning of certain skills and dispositions.

In your group create a brief presentation (<10 minutes) on the concept of ritual on WEA Courses. Be sure to address the essential questions:

- How do we ritualize things on a WEA course to enrich learning and establish the group’s sense of self?
- What does/might “ritualizing decision making” look and sound like on a WEA Course?
- What other things might be considered (or should be) ritualized on a WEA Course and what do (or should) they look and sound like when they are happening?

In preparation for your presentation please fill out the attached “Ritualizing Worksheet. Please be ready to present at: _____

Criteria for Assessment & Feedback:

Form Criteria: (presentation)

1. Communication clearly states the primary theme or purpose
2. Communication provides credible background to support or justify the primary theme
3. Communication contains properly sequenced ideas
4. Depth of communications is appropriate to the audience
5. Choice of words and terms is appropriate to the audience
6. Communication reflects the needs of the audience
7. Length of communication is appropriate to the situation
8. Correct grammar is employed in written or oral communication
9. Voice quality is appropriate to the situation
10. Volume is appropriate
11. Words are pronounced correctly
12. Speed of delivery is appropriate
13. Secures audience attention at the beginning
14. Portrays credibility
15. Does not distract with physical mannerisms
16. Does not distract with verbal habits
17. Uses appropriate transitions when proceeding from one topic to another
18. Summarizes key points at the close
19. Uses phrases, facts, or stories to increase audience interest
20. Appears poised
21. Uses body language to add interest
22. Pauses appropriately to emphasize points
23. Displays energy and enthusiasm
24. Answers questions with ease and confidence
25. Uses visual aids when appropriate
26. Communication is at the correct level of formality

Content Criteria:

- Shares the group's understanding of "ritual"
- Accurately and appropriately addresses the focus questions

Knowledge:

Curriculum Point: 18. Teaching, Processing & Transference

Outcome: Describe a selection of activities, tools, and techniques that will facilitate learning in the wilderness

Indicator:

Disposition:

Curriculum Point: 1. Decision Making & Problem Solving

Outcome: Ritualizing and modeling the decision-making process

Indicator:

Date:	Product Quality Checklist	Class Period:
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Product Author(s):	Product Title/Name:	Evaluator Name(s):
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Observed	Standard/Criteria	Possible Points	Rating
	FORM Criteria		
	1. Communication clearly states the primary theme or purpose		
	2. Communication provides credible background to support or justify the primary theme		
	3. Communication contains properly sequenced ideas		
	4. Depth of communications is appropriate to the audience		
	5. Choice of words and terms is appropriate to the audience		
	6. Communication reflects the needs of the audience		
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	21. Uses body language to add interest		
	22. Pauses appropriately to emphasize points		
	23. Displays energy and enthusiasm		
	24. Answers questions with ease and confidence		
	25. Uses visual aids when appropriate		
	26. Communication is at the correct level of formality		
	Content Criteria		
	27. Shares the group's understanding of "ritual"		
	28. Accurately and appropriately addresses the focus questions		
	Total		

Observations:	
Elements of Questionable Quality...	Elements of Exceptional Quality...

Ritualizing Worksheet

How do we ritualize things on WEA course to enrich learning and establish the group's sense of self?

What does/might "ritualizing decision making" look and sound like on a WEA Course?

What other things might be considered (or should be) ritualized on a WEA Course and what do (should) they look and sound like when they are happening?

Adventure Education in Taiwan's Higher Education: Team Power and Adventure Learning Programs

Ru-Syuan Hsiao
Chih-lin Wong
Yun Chang
Chuan-Hui Sun
Syuan-Ci Ding

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Abstract

The presentation focused on two portions. One was the introduction of Team Power (TP) which is a group originated from a formal practicum course in the Department of Recreation and Leisure Industry Management (RLIM) in National Taiwan Sport University (NTSU). Following the TP's mission statement, the trainings we do include basic trainings and outdoor skills trainings. The other portion of the presentation was about NTSU's graduate curriculum called Adventure Learning Programs (ALPs) which are annual student-initiated programs that focus on leadership. From 2005 to 2007, the ALPs' destinations were backpacking in King's Canyon, sea kayaking in Alaska, and mountaineering and service-learning in Himalayas. The latest ALP in 2008 is ongoing and they will go to Mt. Kilimanjaro and Mt. Kenya and do service learning in Kenya. In this presentation only the Alaska and Himalayas programs were highlighted.

Team Power's Origin and Current Status

Taiwan is in the early stage of developing its adventure programs and the NTSU has played a pivotal role in this process. Nine years ago, Dr. Hsieh brought the idea of experiential education and adventure education into National College of Physical Education and Sports (now the National Taiwan Sport University). He and his students created Team Power (TP) which is a division in the department that teaches and promotes experiential education. Dr. Hsieh is not only our professor, but also the president of Association of Asia Experiential Education. He has committed himself to outdoor education for many years.

For us, 2007 was a brand new start under the supervision of Dr. Wu. First, the curriculum structure is clearer and fulfills the needs of all students. Second, the operation of the team has changed. To be closer to the real world, we work as project teams under the lead of project managers. We elect a CEO as the leader of TP, who also represents the whole group. The CEO and project managers meet once a week to discuss the projects and new issues. Project managers and the team work together, from programming client analysis, implementation, to self-review. During this process, we learn, grow, fail, and succeed.

Self-directed learning has become the central concept since Dr. Wu started leading TP. Students are responsible for designing their entire semester curriculum after discussions with Dr. Wu. Whether it's time management or other content of the course, we must complete it by searching many resources actively. We also need to follow the concept of self care to

prevent burnout due to long courses, training, and activities which require much time and energy.

We started with the limited resources and knowledge. Over these years, we have gradually increased our abilities and capabilities as well as setting up a funding system “TP Fund” by organizing different activities. This “TP Fund” not only helps us upgrade our equipments, but also increases more learning opportunities for us because it pays for part of our external training. People who get the financial support from the “TP Fund” will find ways to give back to other TP members. So, this system allows us to continually professionalize our skills and knowledge.

What Do We Do in Team Power?

TP’s Mission Statement

As an academic training program in National Taiwan Sport University, Team Power is committed to prepare future leaders for all walks of life through holistic adventure-based activities. In addition, as an experiential education provider, TP offers non-for-profit organizations high quality experiential programs which encourage a lifelong journey of self discovery and development. Based on our mission statement, we do lots of training to prepare ourselves. The training is divided into two parts, one is basic training, and every ‘TPer’ has to learn these basic skills. The other part is outdoor skills trainings and this is explained later.

Basic Training

The first basic training is physical fitness training. The aim of physical fitness training is to let TPer have good health so that we can have more energy in the outdoors. The second basic training is facilitation training. In this part, we have to learn and lead portable games and ropes course initiatives along with the facilitating and debriefing skills. We also experience and learn more new games to make our program interesting. In addition, we have regular ropes course training. The first part of the ropes course training is to make sure TPer introduce the rules and the environment of the ropes course correctly. Then, we have to have abilities to tell the participants how to use the equipment and lead ropes courses safely. In order to ensure the safety of the operation, we have to possess rescue skills including the ‘cut the way rescue’ and replace ropes and check high elements. As an experiential education provider, we also need to learn how to facilitate our clients, and through debriefing make them learn from actual experiences for application in their daily life. To be brief, the trainings’ aim is to make us become good facilitators. The third part of basic training is first aid. Every ‘TPer’ has to get the standard first aid certification which is examined by the Red Cross of Taiwan. Some TPer also have the WFR certification.

Outdoor Skills Trainings

Our outdoor skills trainings include four groups, which are backpacking, river tracing, rock climbing, and sea kayaking. According to the student’s own interest, he or she can choose one group to participate. All skill trainings are designed and scheduled by students. The senior students will teach the juniors, and the role of Dr. Wu is our supervisor. If we need to invite other teachers outside of school, the TP fund will pay for the expense.

The first group is backpacking. The training courses we have done include backpacking, equipment maintenance, navigation skills, LNT principles, and the using of GPS. The second group is river tracing. The training courses we have done include rigging skills, rappelling, waterfall climbing, and river terrain consideration. The third group is sea kayaking. The training courses we have done include paddling, rolling, rescues, and hydrology. The fourth group is rock climbing. The training courses we have done include bouldering, climbing up and down, anchor set-up, yoga, and rappelling. Besides all the above-mentioned, there is a special training during the end of the summer vacation. The special characteristic of 'Big Adventure' is that participants will never know where it is until three days before the day they start off. Moreover, not all 'TPers' can go - only if they get the qualification. To get the qualification, the participants have to...

- Run the NTSU campus 10 times (about 5 km each time with some uphill)
- Rock climb or boulder 5 times
- Pass the running test, running the NTSU campus. Females have to finish within 29 minutes and males have to finish within 28 minutes.
- Master the ascending and rappelling systems.

Internship

In TP, we have a lot of training. After this, where can we apply our professional knowledge or skills? The answer is that we will have internships in every summer and winter vacation such as Outward Bound Taiwan, summer camps, youth NPOs, and other business training companies. Most of our clients are school students (from junior high school to college students), high-risk students, NPO social workers. Sometimes we get clients from corporations and Christian groups.

TP Values

The TP community, its students, teachers, and alumni share a commitment to safety, wilderness, self-initiated learning, teamwork, leadership, and excellence. These values define and direct who we are, what we do, and how we do it. Next, we will introduce the ALPs in Alaska and Himalayas.

2006 Adventure Learning program: Sea kayaking in Alaska

Project Mission

- Our project mission is to awake the adventure character of Taiwan's people, and continue developing adventure education in Taiwan's society.
- Let dropout students challenge their limits, develop their inner strength, and find value and meaning of their life through adventure education.

At the beginning of this program, the professor gave us three conditions:

1. USA location- because our teacher is more familiar with USA. If any emergency should happen, he could do better arrangement than in any other country. That's why he chose America as the location of our adventure.
2. Sea kayaking- there are twelve members in our group. Eight male, four female. Seven of them are graduate students. Most of the members have experience of mountain climbing, and some of them were professional guides. So, because we know that

change often happens in the stretch zone, and not the comfort zone, kayaking was used.

3. The cost should be under 2,200 US dollars. The purpose of this program is to make adventure education more popular in Taiwan. We are also seeking support from society.

The Journey Begins

In order to make this project run smoothly, we divided ourselves into different groups for different assignments. Two experienced members take the roles of Chief Executive Officer and vice CEO. They are responsible for leading the group to accomplish our task. Other groups are responsible for administrative management, course planning, public relation, academic research, and records.

Course Planning

The group is, responsible for arranging the kayaking instruction course and medium, long distance skill training in Taiwan. We also had a lot of support from the Taiwan Kayak Association. They provided us with two hours of indoor class every Monday night, and instructed medium and long distance open water training. As for our adventure in Alaska, we worked with NOLS, and it provided us with a 10 day sea kayaking program.

Administration Management

The itinerary planning included the transportation and lodging to make our training more effective. Also, the administration management was responsible for controlling the budget and using our funds appropriately.

Public Relations

There were two assignments for public relations. First was to seek for sponsors to support our project. Second was to connect with the media. The idea of establishing an adventure school for dropout students attracted the attention of the Mayor of Taipei County. Taipei County has the highest ratio of dropout students, and the Mayor offered us considerable support in seeking other sponsors.

At the beginning, our story went public only as sports news. But later, we got an anchorman from Taiwan's TVBS television station, who showed high interest in establishing this adventure school for dropout students. He helped us a lot in introducing adventure education to Taiwan's society.

Academic Research

We completed three areas of research during this course: (1) A dialogue with the sea while sea kayaking in Alaska; (2) Research of tandem kayak paddlers' communication behaviors and interpersonal relationships; and (3) Research of how sea kayaking affects participants' risk taking.

Our Learning

Learning how to adjust ourselves in a difficult and unfamiliar environment was the most challenging part of our learning, including adventure, communication skills, decision making and problem solving, with a global perspective.

2007 Adventure Learning Program: Outdoor Leadership and Service Learning Program in the Himalayas

Program Announcement

At the beginning, we had a meeting in November of 2006 in which Dr. Hsieh announced that there were three principles for this project. First, we would climb in the Himalayas in Nepal. Second, we would complete a service learning project. Third, the cost of this trip per person should be under 2,000 US dollars.

Early Stage in the Group

Initially, we had seventeen members in the group, but we encountered some problems. First, our team lacked cohesiveness and consensus. Second, we quickly become overly dependent on some of our members because of their expertise in the outdoors. Three months later, five members backed out the group including the CEO and all the leaders in all the divisions. After that, Dr. Hsieh brought us back together. Then Chieh-Lun volunteered to assume the role of CEO and reassigned our duties. At last, we were ready to go! We began training, training, and more training.

Leadership

We received leadership training during this trip. Everyday we had one LOD (Leader Of the Day) to lead us. The LOD would plan the day trip and make sure everyone was safe. This trip also taught us decision making and risk management skills. We also learned from our Sherpa guides. For example, one day, we walked on the bridge and one of the guides yelled at us and told us to walk faster, because some yaks would pass through, however you didn't know what the yaks would do to us in the narrow bridge. Besides, we observed the guides and they demonstrated good servant leadership. Besides climbing, we had to read one book about leadership back in Taiwan - *It's Your Ship: Management Techniques from the Best Damn Ship in the Navy* by Michael Abrashoff. Another was *Leading with Questions: How Leaders Find the Right Solutions by Knowing What to Ask* by Michael Marquardt. We shared something about the books we read when we had free time everyday.

Service Learning

Besides the mountaineering trainings, we also thought about what was service learning. Were we doing service learning because of the need to satisfy ourselves, or to meet the true needs of the Nepalese?

Information about Nepal

During that time, we found a Taiwanese young lady, Nana, who has been volunteering in Nepal for several years. We helped her collect raise funds to build the classrooms, and recruited teachers for a village. At the same time, we knew that reasons for sickness in Nepal are the lack of safe drinking water, and lack of medical care. So we invited a medical team from Taiwan to do the medical service for the community, and we raised money in Taiwan to help them build a reservoir for clean drinking water.

Our Learning

Through this trip, we learned the ability of problem solving and how to raise funds to serve others. Moreover, through service learning we learned: (1) Service learning is to satisfy client's needs; (2) Service learning helps us grow and learn; (3) Service learning requires integrated resources; (4) Selflessness and virtues bring people together.

Conclusion

You may ask why we like to be the part of TP? There are several reasons to answer this question. First, through outdoor skills trainings, we find out about Taiwan's beauty and identify with the island. Second, experiential education and adventure education with giving and sharing makes us jump out of the traditional education box. Third, learning as a team makes us considerate of others and explore ourselves. In addition, while cultivating our leadership we learned about good teaching skills, sound decision making, and client assistance and caring. Most importantly we challenged ourselves to do things we have never experienced before. The ALPs continue the experiential learning spirit and combine the adventure education with the public relations, service learning and a global vision. If you are interested in these programs, please contact us at maxfish4303@yahoo.com.tw. Thank you!

Benefits and Strategies for Facilitating Solitary Reflection on W.E.A. Courses

Andrew J. Bobilya, Montreat College
Kenneth R. Kalisch, Montreat College
Brad Daniel, Montreat College
Betsy Lindley, Utah Valley University

Definition of Solitary Reflection

This refers to any amount of time that an individual is intentionally provided a period of time alone for the purpose of reflection. A longer time is typically called a “Solo.” A shorter time is typically referred to as a “mini-solo”, “quiet time” or “time alone.” These times can be programmed with an assignment or with freedom from it.

The Value of Solitary Reflection

A fundamental precept of experiential education suggests that reflecting on experience significantly enhances learning. Solitude provides an environment conducive for such reflection. While W.E.A. courses emphasize reflection involved in such things as self-assessment and peer-reflection, participants can also benefit from time spent reflecting more broadly on the course experience and their lives.

Operational Definition of a Solo

The Solo refers to an extended period of time (24-72 hours) during which the participants are intentionally placed alone for the purpose of physical rest and reflection. Typically, they will have spent some days traveling together along with other wilderness activities before the Solo begins.

Educational Benefits of the Solitary Reflection (including a Solo)

To provide individuals with the opportunity for an intentional time of solitude to promote:

- A. Reflection (life, their course, leadership, decision-making, social interaction, etc.)
- B. Time Alone
- C. Unstructured Time
- D. Physical Rest
- E. Renewed Perspective and Sense of Priority
- F. Increased Attunement (relationships with oneself, others, nature and God)
- G. Contrasting Experience (from other course components and the routine of life)

Summary of Roundtable Discussion

Solitary reflection is used in a variety of ways on W.E.A. courses. Some instructors indicated preference for a multi-day “Solo” and others preferred including shorter reflection times. Instructors acknowledged the challenge of setting aside regular time for solitary reflection, and yet confirmed the benefits of doing so. Many hoped the new W.E.A. curriculum design would offer instructors greater opportunity to utilize reflection as a course component regardless of the curriculum competency focus.

Summary of Results from Seven Years of Solo Research

Data Sources

Below you will find a brief summary of the results from Solo research conducted by the presenters. This data was collected from a wilderness course for incoming college freshman at Wheaton College (16-18-day course with 1-3 day Solo) and the North Carolina Outward Bound School (youth and adult open enrollment courses with Solos of 1-3 days). Data were collected from 2000- 2007. For more detailed information, please consult the publications listed on the back of this sheet or contact the presenters directly.

- 1) The top 3 most enjoyable characteristics of the Solo are:
 - a. Solitude
 - b. Lack of activity
 - c. Journaling
- 2) The top 3 most difficult characteristics of the Solo are:
 - a. Fasting
 - b. Solitude
 - c. Unstructured time
- 3) The greatest number of participants was primarily excited to experience the Solo.
- 4) The majority of participants were primarily at peace during Solo.
- 5) Younger participants struggled with boredom more than older participants.
- 6) The natural environment affected the participants’ perceptions of their Solo.
- 7) Participants appreciated regular reflection times previous to their Solo experience (Ex: journaling opportunities and “mini-solos”)
- 8) The wilderness Solo provided an opportunity for each participant to reflect on their ...
 - a. relationships
 - b. life circumstances and choices
 - c. future goals.

- 9) The results from Wheaton College and NCOBS studies were similar, despite the difference in program goals and the age diversity of the participants. This confirms that programmed wilderness solitude has common themes regardless of age, location, etc.
- 10) The participants valued solitude, novelty, unstructured time, and reflection time in nature -- things needed for health and growth.
- 11) A majority of the students indicated that completing the Solo survey helped them draw meaning from their experience.

Solo Guidelines for Instructors

(These guidelines are suggestions varying by course location and group)

1. Solo Preparation

- Students will have had an opportunity to spend smaller periods of time alone prior to a longer Solo.
- There will be at least one instructor on “Solo watch” at all times, located at the group’s base camp which is ideally centrally located to the Solo sites.
- Students must receive a safety briefing prior to the Solo which includes:
 - The boundary of their Solo area
 - The location of the Solo base camp
 - The emergency procedures:
 - Blow your whistle three times and go to the nearest person for help.
 - Instructors will have drawn a map of the solo area with student names at each solo site.
 - Students will be checked at least once every 24 hours.
 - If the Solo site is on a ridge, shelters must be constructed away from open spaces and exposed caves due to lightning danger.
 - Swimming is not permitted on Solo because of the potential for an un-noticed drowning.
 - Knives and fires are not permitted on Solo because of the risk involved.
 - Arrive at the Solo area early enough in the day to allow for a relaxed atmosphere in which to choose individual sites, brief students, and escort students to their sites.
 - Solo will be a new experience for many people. Intentionally place those with fears of being alone in the wilderness closest to the instructor base camp.
 - If a participant needs to “break” their Solo they should return to the base camp and not disturb other students unless their assistance is needed.
 - Be sure to locate students along a water source or provide water during your visits.
 - Students should not have to practice any skills necessary for the solo that they have not already demonstrated earlier in the course (i.e. shelter construction, water purification, journaling, etc.).

2. Framing the Solo

- The framing of the Solo experience is critical to the success of the activity. Allow enough time to clarify expectations of staff and students.
- Be sure to discuss the rationale behind taking time for intentional solitude and any activities you want the students to do while alone.
- Discuss any logistical information that they will need to know. (Ex: do they have enough water, what if they need to use the bathroom, what if they have an emergency, how will Solo end)
- The intent of the Solo is to provide an opportunity to experience silence and solitude in the wilderness, something many of us have never done. It is to be a personal time of rest and reflection in a small personal area of the wilderness. Use this time to focus on the personal reflection section of the journal. Please do not go for a hike, visit other group members, etc. This can be a distraction and a safety concern.
- Consider the individual Solo sites. Find a place that offers an opportunity for solitude! Can you provide a space for each student that is along a lake or stream or on a high vista? This can enhance their experience. Instructors **MUST** know where each student is, and students **MUST** know how to return to the “base camp” in an emergency.
- You may want to provide the students with a guided reflection question(s) or activity to do during part of their Solo. Find a balance between providing structure and allowing them to utilize their time as they wish.

3. Solo Activities or Questions:

- Students can be assigned to write about their role within the group, their decision-making, their leadership and teaching style, their strengths and weaknesses, etc.
- Have students set goals for after the course that connect what they are learning now with life at home. (This can come in the form of a letter that is mailed to them later).
- Ask students to reflect on the important relationships in their life.
- Consider asking them to reflect on one or more of the following questions:
 - List 5 things about yourself that you like. List 5 things about yourself that you would like to change.
 - Name one person in your life that you admire and why.
 - What is the group’s greatest strength and greatest weakness?
 - Describe the leadership qualities that you have observed in yourself and others in the group and make recommendations for areas of improvement.
 - List one or more things that you would like to change about your role in the group.
 - Name something about each group member that you respect and something they could improve.
 - When have you felt the closest with the group and why?
 - When have you felt the most separated from the group and why?
 - What have you learned about yourself and how do you plan to apply that learning after the course?

4. During the Solo

- Students should be located out of sight of each other if at all possible but must be close enough to respond to hear/respond to a whistle blast in an emergency.
- Respect the students' experience and do not bother them. Be clear regarding when they can expect you to come by to visit at the end of their experience.
- Do not disrupt the students with instructor activity at the base camp, etc.

5. At the End of the Solo

- Consider walking out individually to each student and taking the time to check in 1:1 with them regarding their experience on the course thus far, their role in the group, etc. Research shows that a 1:1 discussion with instructors prior to rejoining the group is very helpful in transferring the experience.
- Plan a group debrief and celebration of the experience soon after the solo. It is NOT recommended to return to the group in the early afternoon and wait to debrief the experience until the evening gathering. Have a plan for what you would like individuals to share and encourage students that their experience is unique. There is no RIGHT way to experience a Solo.

Presenters' Note and Publications

Most of the information presented in this workshop has been shared in various formats at recent conferences and symposia. For more detailed information regarding these studies consult the following publications or contact the presenters directly. We hope the information shared is beneficial and welcome the opportunity to be of service to you or your program.

1. Dissertations:

Bobilya, A. J. (2004). *An investigation of the solo in a wilderness experience program*. (Doctoral dissertation, University of Minnesota, 2004) *Digital Dissertations*, AAT 3129201.

Daniel, B. (2003). *The life significance of a spiritually oriented, Outward Bound-type wilderness expedition*. Antioch University – Antioch New England Graduate School.

2. Refereed Publications:

Bobilya, A. J. & Kalisch, K. R. (2007). The wilderness solo: The Effect of Intentional Design. In Paisley, K., McAvoy, L., Young, A. B., Shooter, W., & Bochniak, J. (Eds.), *Research in outdoor education: Vol. 8* (pp. 145-146) Cortland, NY: Coalition for Education in the Outdoors.

Daniel, B., Bobilya, A. J. & Kalisch, K. (2006). The life significance of the wilderness solo and strategies for Intentional Solo Design: A summary of two studies. *The Journal of the Wilderness Education Association*. 18 (3), 11-18.

Bobilya, A. J., McAvoy, L.H., & Kalisch, K. R. (2005). The power of the instructor in the solo experience: An empirical study and some non-empirical questions. *Journal of Adventure Education and Outdoor Learning*, 5 (1), 35-50.

Bobilya, A. J., Kalisch, K. R., & McAvoy, L. H. (2005). An investigation of the role of the instructor in the solo experience [Abstract]. *Journal of Experiential Education*, 27 (3), 318-321.

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3. Book Chapters:

Bobilya, A. J. (2005) Wilderness, solitude and monastic traditions. In Knapp. C. E. & Smith, T. (Eds.), *Exploring the Power of Solo, Silence, and Solitude* (pp. 61-74). Boulder, CO: Association for Experiential Education.

Bobilya, A. J., McAvoy, L. H. & Kalisch, K. R. (2005) Lessons from the field: Participants' perceptions of a multi-day wilderness solo. In Knapp. C. E. & Smith, T. (Eds.), *Exploring the Power of Solo, Silence, and Solitude* (pp. 103 – 120). Boulder, CO: Association for Experiential Education.

Daniel, B. (2005). The life significance of a wilderness solo. In Knapp. C. E. & Smith, T. (Eds.), *Exploring the Power of Solo, Silence, and Solitude* (pp. 85 - 102). Boulder, CO: Association for Experiential Education.

Lessons from the Outward Bound Solo: Intended Transfer of Learning

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Background

The results of many studies of wilderness experience program outcomes indicate that we do not know much about what happens during specific components of the program or how these components contribute to the overall outcomes of the experience (Ewert & McAvoy, 2000; McKenzie, 2000). Meanwhile, the Solo experience continues to be a popular and consistently chosen component of most wilderness experience programs (Knapp & Smith, 2005). Recent studies have confirmed this by showing the Solo to be one of the most influential program components related to participant learning and growth (Daniel, 2003; Maxted, 2005; McFee, 1993). Bobilya (2004) and colleagues conducted recent research to better understand the participants' perceptions of their Solo experience during extended wilderness experience programs. The results of these Solo studies have assisted in better understanding this often influential program component.

The Solo is a time when the students are intentionally separated from their expedition group for 24-72 hours for the purpose of reflecting on their lives, the lessons learned while traveling in the wilderness and their role as a small group member. Because of the Solo's continued use and documented impact, there is clearly a need to better understand participants' experiences during the Solo (Bobilya, Kalisch, & McAvoy, 2005). This study begins to uncover the meaning that participants attribute to the Solo as they look beyond their wilderness experience – something that most Solo research to date has yet to do.

The purpose of this exploratory study was to understand what students at the North Carolina Outward Bound School thought they learned from their Solo experience. The questions on the survey tool were guided by the Hendee-Brown Model (1988). This model aided in understanding the personal growth that is facilitated through programmed Solo experiences. The model consists of four postulates: (a) personal growth depends on receptivity, (b) personal growth depends on optimum stress from the experience, (c) wilderness experiences provide change and attunement, and (d) wilderness provides metaphors. This study was not intended to test the model.

Methods

This study utilized a dominant-less dominant design (Creswell, 1994) as a means of combining qualitative and quantitative methods for exploring the Solo experience. The qualitative features of the study remained as the "dominant" and the quantitative features as the "less dominant" method. Participants included 335 students (200 male / 135 female) who

chose to enroll in a North Carolina Outward Bound School (NCOBS) course and agreed to participate in the study. The participants were selected based on simple criterion sampling (Patton, 2002). In particular, the participants had to complete a NCOBS course of at least seven days, including a Solo experience of 24-72 hours during the summer (June – August) of 2007.

The study captured the participants' self-evaluation of their Solo experience while still alone in the wilderness. On the final day of their Solo, prior to returning to their group, the instructors asked the students to complete the written Solo questionnaire. This questionnaire allowed the students to reflect on their experience without being influenced by the responses of their peers. There were a number of questions asked of the participants, but the focus of this study is on the question that explored the lessons that they wanted to take with them as they transitioned to life after the expedition. The question was, "What are three lessons you learned during your Solo experience that you want to apply to your life at home?" Data collection was completed on August 27, 2007. The qualitative analysis followed the Constant Comparative Method (Glasser & Strauss, 1967) whereby emerging themes are constantly compared with data being analyzed. The data were analyzed by two researchers and twenty percent of the data were checked for inter-coder reliability with a third researcher.

Results and Discussion

The results indicate that the NCOBS (2007) students - regardless of participant age, Solo location and other factors – had a primarily positive experience of wilderness solitude. The key themes that emerged were: a) participants valued structured time for reflection, b) solitude enhanced participants' attunement to self and appreciation of others c) the wilderness Solo increased participants' appreciation for the outdoors and their desire to spend more time outside, and d) the participants valued the Solo as a contrasting experience to the pace of life on the course as well as prior to it. The participants also shared that they intended to transfer lessons back home related to a) self-reliance, b) self-worth, c) perseverance, d) responsibility and simplicity of lifestyle. With respect to lifestyle, participants intended to give more attention to

a) setting aside personal time, b) addressing physical needs, and c) seeking new challenges. The results clearly indicate that many participants desired more time for reflection and solitude in their lives – both in the wilderness and at home.

The North Carolina Outward Bound School is one of many wilderness experience programs operating in the United States which include over 200 programs using the Solo for personal growth (Friese, Hendee & Kinziger, 1998). Given the increased attention to the lack of direct experiences in nature among youth (Louv, 2005) and the importance of offering young people structured opportunities for increased autonomy and personal reflection; these results are instructive. These findings extend the previous Solo research by investigating a program which operates different courses (length, activity type, age, group and location), all of which attempt to include a Solo experience. Finally, the results help uncover the meaning participants attribute to the Solo experience and what lessons or practices they intend to transfer back to their home environments. These results also give program administrators and

instructors some insight into how to best utilize the Solo experience as a tool for personal growth within their participants.

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**Professional Development in Outdoor Leadership:
A study investigating the certifications, experiences and competencies of
Wilderness Education Association graduates.**

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Abstract

The purpose of this presentation was to report back data collected as a part of a Master's Degree thesis project in which the WEA membership served as the subject. This study investigated the Professional Development of Outdoor Leaders, and what characteristics make up an "Outdoor Professional". The field of outdoor education is continuing to grow every year, and as a result stands at the transition of moving toward defining itself as a profession. As this field makes this transition there is an increasing need to more articulately define what makes an outdoor education professional and what terms define the development of outdoor educators. The purpose of this mixed-methods study was to examine the professional characteristics (certifications, experiences and professional roles) of students who have completed a Wilderness Education Association course. Then, given the current research in Outdoor Educator core competencies as established in the literature, the compiled student data was compared with the established outdoor education core competencies.

This study utilized a survey for the initial data collection phase. The goal was to work toward identifying where WEA Graduates' self reported competency levels were similar to those that are reported as desirable by academics, and secondarily to identify which types of graduates report higher competency levels. Findings include characteristics exhibited by WEA course graduates in regards to their professional development, and the function of professional communities in the development of professionals. Also, discussed are the implications of certifications and experiences on self-reported core competency levels as well as the role of academic program and professional roles in the development of outdoor leadership core competencies.

Key Words: Professional Development, Outdoor Leadership, Wilderness Education Association, Core Competency

Outdoor Leadership as a Profession

William Sullivan, senior scholar of the Carnegie Foundation for Advancement of Teaching and author of *Work and Integrity: the Crisis and Promise of Professionalism in America*" (2005), defines a profession as an occupation that is based on a formal knowledge base and set of trained skills that are organized in a collegial way. Also, these skills are carried out in a spirit of service. He notes that as society shifts from rural communities (what he calls a local base) to urban communities (technology based) there begins to surface a need for expertise and coordination. This is where the roots of professionalism are found.

Steven Guthrie (2001) summarizes the different theories of what constitutes a profession. He states that professions have a shared body of knowledge that is written in professional literature as well as established programs of higher education that are engaged in ongoing research. Also, he notes that a profession has a shared technical language along with shared norms and values. Professions have meaningful standards, professional associations and provide a public service. At the present time Outdoor Education is still in its formational stages as a profession. While, ongoing research has increased over the years and adds to the validation of this industry being classified as a profession, the research being done still is miniscule in quantity compared to other professions. Also, Outdoor Education it is not yet a field that is generally and universally recognized by the public (Guthrie, 2001). The literature surrounding this topic defines the four categories (Certifications, Experiences, Academic Programs, and Service in Professional Roles) as markers of Professional Development in Outdoor Leadership for individuals.

Purpose of Study

This study had 3 main objectives to research:

- What are the specific professional characteristics of WEA graduates?
- How do those professional characteristics of WEA graduates compare with core outdoor leadership competencies proposed by Priest and Gass (1997)?
- How do those professional characteristics of WEA graduates compare with core outdoor leadership competencies proposed by Martin, Cashel, Wagstaff, and Breunig (2006)?

The Survey

The survey itself has three sections. The first section of the survey discusses demographic data of the certified outdoor leaders and the courses they participated in. The second section asked the participant to identify certain characteristics of his/her professional life. For these questions participants selected from a list of responses, with the option of adding additional open ended responses. The third section of the survey directly addressed competencies in outdoor education. It was a section of 30 statements pertaining to outdoor leadership competencies.

The Core Competencies

1. Foundational Knowledge
2. Self Awareness
3. Decision Making and Judgment
4. Teaching and Facilitation
5. Environmental Ethics
6. Program Management
7. Safety and Risk Management
8. Technical Ability
9. Communication Skills
10. Professional Ethics

Results

Professional Characteristics of WEA Graduates

The survey results showed a high concentration of NSP/PSC graduates among the survey respondents. It also revealed that there was very little significant difference between the perceived competency levels of NSP, PSC, and WSP graduates. This could be due to the fact that these programs are all based on the same curriculum. Also a high number of WSP graduates held or were in the process of completing academic degree programs in outdoor leadership.

Role of the Academic Program

This study revealed no significant difference between those with outdoor related degrees and those without. This could be due to the fact that the competencies are self reported and/or related to the influence of field based courses on the development of these competencies. It is expected that those who have spent time in an academic program would have a broader and deeper understanding of the history and context of the field that they operate in (Guthrie, 2001). The results of this study do not show that to be true. This data also indicates at first glance that the field based course work, such as a WEA course, has a more powerful effect on the development of the outdoor leaders' competencies and therefore the academic coursework is still beneficial, but not along these vectors. Research reports that those students who feel that they are more involved in the decision making processes of their learning (such as participating in an intensive field based course), will retain more knowledge (Arthur-Banning, 2004; Herdman, 1994).

The modern professions have been developed through significant contributions from the academic community (Sullivan, 2005), and therefore are inextricably tied. The body of research surrounding this topic acknowledges a broad spectrum of benefits for the aspiring professional when outdoor leadership is tied into an academic environment (Garvey, 1999; Medina, 2001; Plaut, 2001). In regards to this research, the question that is strongly raised revolves around why increased competency is not revealed by those students who have participated in these programs.

Certification and Experience

It is shown in the literature that experiences aspiring professionals have and the certifications they hold are both driving factors in their development. What isn't agreed upon is whether or not more investment should be put into one or the other when trying to attain competency and professional status in the field of outdoor leadership. After taking a broad look at major certifications and major experiences there are a few conclusions that can begin to be drawn from the competency levels reported from these populations.

The Professional Community

A significant number of respondents reported that it was their WEA course that set them on the path of their current profession, and additional respondents noted that their WEA course has defined their professional identity. When asked why respondents chose to take a WEA course the majority of responses indicated that it was because of an academic program, but the second most noted response was that they took the course because the course was

recommended to them by a mentor or an instructor. Also, a significant number of responses noted that the course has affected their professional life because it got them involved in a community of other professionals via networking and the annual conference.

Given this knowledge, and the responses from the survey revolving around development through involvement in the professional community, it can be seen that this involvement in a professional community is significant for the development of the outdoor leader. Respondents stated that it was their WEA course that got them interested in pursuing the field of outdoor leadership professionally, but also that continued involvement in the community also attributes to the professional development of the individual.

Discussion

Implications for Professional Development in Outdoor Leadership

In regards to the characteristics of the WEA graduate the research reveals some relevant trends. One is that graduates are strongly tied to academic programs, though the effect of these academic programs on competency levels isn't entirely clear. It is the academic programs that bring a good number of students to the courses as well as allowing for a broader look at outdoor leadership. Results of this study do not indicate a significant difference in competency levels for those with degrees in outdoor leadership, but the self-reporting nature of those competencies make it difficult to draw too strong of a conclusion from this.

This research also reveals that WEA graduates are experience rich. Many of the survey respondents have participated in multiple forms of experiences and courses both before and after their WEA course experience. Graduates are also seeking out certifications both before and after their course. Via their involvement in gaining experiences and certifications this population reveals that they value both forms of professional development. Certifications and experiences nurture each other. However, the results of this study show certifications to have a stronger impact on competency than experiences do. This shows the field that while certifications are contested as to their importance in the field of outdoor leadership, they are making an impact in the development of outdoor leadership competencies.

Across many of the variables it is seen that leadership experience plays a large role in the development of competencies. This population had a vast amount of leadership experience and on the whole reported relatively high competency levels. Also, when the variables were isolated it was those with leadership training experiences, trip leading experiences, and facilitation certification showed significantly higher competency levels than those respondents who had not participated in these leadership experiences. While leadership itself is not one of the measured competencies, there are aspects of leadership that are entrenched in each of the ten competencies. The cultivation of leadership experiences (regardless of what form they come in) are showing to be critical to the development of competencies in this field.

Lastly, the WEA graduates who participated in this research see the value in the professional community that comes with being a graduate of this type of course. These graduates seek the advice of mentors and instructors as a part of their professional development. They also stay actively engaged in the organization through networking and participation on the annual conference. It is the course that brings students to the profession, but it is the community of professionals that keep students in the profession.

Recommendations for Future Research

The intention of this research was to cast a broad net to gather preliminary information about the professional characteristics from one of the organizations offering courses intended to develop outdoor professionals. This research is limited in drawing many conclusions about the professional outdoor leadership community as a whole in that its participants are all from one organization. Studies that build on this one, but expand it to a broader scope of organizations would help to inform the field of outdoor leadership even more so on some of the questions and issues discussed here.

Also this research doesn't provide concrete answers to the discussion about the validity of certifications versus experiences in the development of the outdoor professional, but only addresses these two means of professional development in concert with all of the other variables that could affect competency. This makes it difficult to discern what truly is causing the increased competencies in certain sections of this population. The question as to whether the differences in competency levels revealed in this research are a cause or effect of course participation is still not fully disclosed by this data. Research that attempts to isolate these variables (certifications, degrees, experiences) and their relevance to the development of outdoor leadership competencies would aid organizations knowing how to best prepare students for their futures in the field of outdoor leadership.

The other major question raised here is what effect do academic programs have on the development of the professional outdoor leader? This research reveals no significant effect by outdoor leadership academic programs on the 10 competencies reported in this study, yet the body of research surrounding this topic suggests that this isn't the case. The literature advocates that academic programs make a significant contribution to the development of the professional outdoor leader. In simplest terms, the prolonged exposure to the field of outdoor leadership, and the exposure to the variety of models in the field should increase general competency over those who have only had field based experience as a means of professional development. It is possible that field based experience holds that much influence in the development of competency that it renders the academic experience relatively superfluous, but conventional wisdom about the nature of professional development and research surrounding this topic would argue otherwise. Research that specifically addresses the effect of academic programming on competency levels in outdoor leadership would help the field to gain a better understanding of the relational impacts of academic based program in the professional development of outdoor leaders.

Lastly, the competency tool used as a part of this study was developed based on the published literature regarding outdoor leadership competencies (Martin, 2006; Priest, 1997). The method in which this competency tool was used was gathering static competency levels from a section of outdoor leaders. However, competencies are developed in a dynamic nature. A study that used the same competency tool, but in a pre and post test method would give depth to the data gathered here by means of studying how competencies develop and what variables of professional development impact change along the competency vectors.

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Collaboration - To Infinity and Beyond: The Pixar Model

Jack K Drury

Abstract

Pixar Animation Studios, the company that has created blockbuster computer animated films such as *Toy Story*, *Monsters Inc.*, *Cars* and many more, uses a collaboration model that is worth emulating. This presentation explored how Pixar creates a collaborative environment that has allowed the company to have such consistent success in the incredibly competitive movie industry.

Presentation Summary

The presenter is a Pixar Animation Studios fan for two reasons. They make great films and his cousin, Eben Ostby is Vice President of Software at Pixar. Ostby was the supervising Technical Director of *Cars*, Modeling Supervisor for both *Toy Story* and *Toy Story 2* as well as the recipient of a 1998 Oscar for Scientific Engineering. As a result of this connection when the book *To Infinity and Beyond! The Story of Pixar Animation Studios* by Karen Paik came out in 2007 the presenter was eager to learn more about the company behind all the blockbuster hits. The book paints a picture of a company that values collaboration and attempts to model it at all levels. A subsequent interview with Eben Ostby confirmed that Pixar indeed tries to hire good people and let them play to their strengths.

The session addressed the question, via a PowerPoint presentation, why is Pixar so Successful?

Pixar believes in the true nature of collaboration. How?

- The company has four legs: Creative, Technical, Production Management, Business
- They treat all legs equally and ask for input between all four areas.
- The creative and production people ask the business and technical departments for input on the story
- The business department asks for input from the creative folks on business issues
- They ask for peer review from EVERYONE!
- No one is threatened and people willingly ask for and accept feedback
- During *Toy Story 2* eight months before it was to be released they realized that they didn't have a quality product so they scrapped the entire project and started over.
- Their target is a great film not a great box office return
- Reflection is part of everything they do
- What did we do well that we want to remember and what do we want to do differently next time?
- They are believers of life-long learning and have created Pixar University to prove it.
- The challenge to Pixar's 700 employees: Make more films. Make them even faster. Make them even better.

- To that end, Pixar University -- a professional-development program that puts as much emphasis on employee education as it does on company training - is the company's secret weapon.

- Pixar University expands the notion of employee education by broadening its focus from skills training to a more general fine-arts education. Employees choose from a full palate of classes -- about 14 per week -- which they are allowed to miss work to attend. They offer the equivalent of a B.A. in fine arts through their courses.
- The university's primary purpose is to build morale, spirit and communication among employees.
- They are not afraid to hire people smarter than themselves and aren't threatened by it.
- Their mantra is:
 - provide jobs where people can be creatively satisfied and give them opportunities to control the project.
 - Make great movies
 - Provide a fair wage
 - Have fun!
- The feeling is that there are just as talented people at other companies but the level of collaboration there is not the same. According to employees the commitment to keep doing it until you've got it right is unique to Pixar.

After the PowerPoint presentation participants created small groups and addressed the following focus questions:

1. How would you define collaboration?
2. How would you link the four Pillars of Pixar to the IP3 quadrants in the Collaboration chapter of *The Backcountry Classroom 2nd Edition*?
3. How is WEA Training similar and different from WEA training?
4. What role has Pixar University played in Pixar's success?
5. If you had to pick one thing that contributed to Pixar's success what would it be?
6. How well does your workplace function regarding the key skills and dispositions?

SKILLS

- Leadership
- Decision Making
- Problem Solving
- Communication
- Organization
- Management
- Creative Thinking

ATTITUDES /DISPOSITIONS

- Ownership
- Self-Direction
- Quality
- Character
- Collaboration
- Curiosity & Wonder
- Community

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Step Back in Time - A Fireside Chat with Paul Petzoldt

Jack K Drury

Abstract

This session allowed participants to step back in time and hear Paul Petzoldt tell his most famous story, that of his first ascent of the Grand Teton. Presenter Jack Drury compiled a DVD that allows today's generation of outdoor leaders to hear Paul tell some of his greatest stories and share some of his outdoor philosophy. Following the showing of portions of the video, discussions were facilitated to set the context of Paul's observations.

Presentation Summary

After a brief introduction explaining the role Paul Petzoldt played in the field of wilderness education and Petzoldt's influence on the presenter, a portion of video was played where Paul talked about the history of Outward Bound, the National Outdoor Leadership School and the Wilderness Education Association. He talked about the evolution of low-impact camping and how many of today's "Leave Not Trace" practices came from experimentation on early NOLS courses. In addition he talked about the 1963 Wilderness Act and how it set land aside for wilderness protection but had no provision for educating people how to properly use the wild outdoors. After this portion of the video participants were asked to form small groups of three or four people and discuss two questions: 1) What were the implications of what Paul said? 2) What did Paul mean when he said...? Highlights were shared with the entire group. In the second portion of the video Paul told the classic tale of his first ascent of the Grand Teton. The same two questions listed above were used to stimulate small group and eventually a large group discussion.

Time ran out before Paul's story of rescuing a parachutist from the top of Devil's Tower could be shared.

References

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So, You want to be an Outdoor Leader - Now What?

Hugh Gibson, Professor - Missouri State University,
Jerel Cowan, Instructor - University of Central Oklahoma,
Mary Williams, Executive Director - Wilderness Education Association
Joel Meier, Paul Petzold Award Winner and retired professor

Many emerging outdoor leaders have made the decision to become an outdoor leader and then finding themselves asking...“Now what?” They all have the same questions about what is the best path to becoming an outdoor leader. It is a question that each of us have slightly different answers for, because we have taken our own meandering paths to success. We gathered a panel of four professionals who have each taken very different routes to becoming professionals in the outdoor leadership industry. Each accounted their journey throughout the profession of outdoor leadership in an effort to aid emerging professionals in tackling some of these big questions. The panelists included the above authors. The following words are not exact quotes from the panel but rather reoccurring themes that were discussed throughout the session.

There is no right or wrong way to enter this profession, but the panelists hope that this information will prove useful to assist young professionals in their personal development to being the best the outdoor leaders they can be.

There is not one path

It is safe to say that pretty much every person entering this industry wants to know the best path and finds themselves seeking the same journey of an admired mentor or a famous adventurer – looking to replicate the path of seeming success that someone else has already paved. Fortunately (or unfortunately) the “right path” is a bit of a pipe dream and it is an easy trap to fall into. Most veterans in the outdoor leadership field find a significant level of appreciation for their own unique path, the good along with the bad, the successes along with the failures because each of those experiences is what has ultimately made them who they are as a leader. Everyone is different and will have a different path to follow so do not get bogged down trying to recreate someone else’s path and look for opportunities in your own reality. Find ways to rejoice in the experience you have at this moment, because five, ten, fifteen years down the road this maybe the single experience or attribute that gets you that dream job. Furthermore, every person on the panel took a very different route to become successful in their pursuits. Take advice from professionals you trust, learn from their mistakes, learn from their successes and work to apply those within each of your own opportunities. You too can create a successful path and have a career in this industry, but don’t expect the ‘right path’ to be laid out in front of you, no one can do that for you – you are in charge of your own destiny! The field of Outdoor Leadership has not developed over the years with only one way to the top. Rather just the opposite, this field is has increased it’s over all quality by being accepting of peoples’ differences, valuing what experiences they have and offering ones they might not have had.

Be Humble

No matter what you do or where you go, be humble about your skills and experience, it is vital. The concept of humility was noted as a critical element by the entire panel. We have all been exposed to outdoor leaders who are ‘braggy’ about their latest outdoor feats and conquests and it is generally unbecoming and can get you into trouble. No matter how good you are (or think you are), realize that you will meet someone better or you may have an off day from time to time. Every panelist had an experience where lack of humility got them into trouble, either with their job, their peers or even with their lives. Humility is nothing to scoff at. When one is humble there is no need for the spot light every time they go out in the field. Many of the great leaders were and are people that don’t have headlines written about them or need to be in the public eye. This does not mean that you shouldn’t be confident in your skills and experiences; it is about finding the right way to display that confidence to your peers, the individuals who hire you and the students you take into the field.

This leads to critical element of Judgment that the WEA preaches so stringently on courses. It is all about knowing what you know and knowing what you do not know. Work to obtain a sense of self awareness in your skills and your leadership ability. Don’t be afraid to say that you don’t know something. Admitting that you have something to learn opens the doors to learning; and as educators we all know that those doors should never be closed. Many a mistake and accidents have occurred in the field because people were not being honest with themselves about what they know and what they can do. We all have our specialties and our limits. Know yours and those of your co-instructors and participants. Humility will take you far and it will gain you respect.

Experience is Key

If you pay attention, you will have opportunities to gain a variety of experiences. Some will be paid and some volunteer. As an entry level professional, expect more of the latter. The reality of this industry is that you don’t get paid until you have experience and you cannot get experience sitting on your ‘duff’. Each panelist started working for free or for cheap, we’ve all done it and you will have to as well. You shouldn’t do it forever, and as you gain experience, certifications and training you should be paid for your investment. The more experience you have the better. It becomes about time management – focusing your work and other life activities so you can make getting outdoor leadership experience a priority. The more leadership experiences a person can expose themselves to the more knowledge they will gain. This all adds up and over time as the bank of information and prior experience develops so will your judgment. You will be able to make better decisions and be able to make them faster as you draw upon your bank of past experiences. You will learn tips and tricks and you will learn pitfalls to avoid. You will be a better leader with all that experience and knowledge. In addition to field experience, get involved with your peers through memberships with professional organizations and get as many certifications as possible. It is one thing to have the knowledge it is another to have paperwork and peers supporting what you know. Volunteer for things that may make you more marketable down the road. Connect yourself with well established agencies and businesses in your area and look to build your own personal network, the more effort you put into these things, the more opportunities will

be opened up for you. And last but not least - don't forget to document your experience. Keep a detailed leadership and training experience log along with references and evaluations, doing so will aid you in accounting for and validating your experience.

Diversify your education

It is possible for educational diversity to open doors you never thought possible. Having a background outside of recreation can serve to diversify you and allow you to stand out from your colleagues. Sociology, chemistry, environmental studies, business administration, and physical education were all educational areas brought up by the panelists that contributed to their success in outdoor leadership. It does not matter what you study as much as how you are able to incorporate that information in helping you in the outdoor leadership profession. You not only broaden your personal knowledge base, but you also open up networking opportunities with individuals, companies and industries that overlap with outdoor leadership. Outdoor leadership is a physically demanding job. Unfortunately our bodies are not designed to take that kind of abuse infinitely with no adverse effect. No one likes to talk about injuries and not being able to go into the field, but it is important to understand as a potential reality. Another unfortunate reality is that a lot of jobs in the industry are currently seasonal with no benefits. That works for a while and sometimes people are happy with that for the duration of their career, but most people eventually want stability and benefits, which are easier to obtain in a full time job if you have a diverse background.

This goes directly along with the concept of there not being a 'right path'. It must be stated that education should not be only thought of as formal education. Conferences, workshops, personal experience, books, and networking can all serve as a means to broaden education. Every educational opportunity that you come across is an opportunity to become engaged and enlightened in a new content area that can benefit your outdoor leadership career. Make it your personal objective to never walk away from an experience feeling like you didn't learn something. Make every experience valuable whether it was "good" or "bad", even though those difficult experiences seem to stick with us a little longer and a little deeper. The Outdoor leadership field is the career of a lifetime learner. If you think you have made it please see "*Be Humble*", above.

Make your destiny

Too often, people in the field concentrate on what others are doing or have done instead of critically analyzing where they are and what they have done. Learn from your successes and more importantly, learn from your mistakes. Be critical in your self-evaluation and work to make yourself, your teaching, your leadership more effective. Look for those around you that allow you to make mistakes, take them out with you and have them push you to do better. In fact, why not wipe the word 'mistake' out of your vocabulary and start calling them learning opportunities, because that is what they are. Look for opportunities that others do not see or may miss – both personally and professionally. Be forward thinking, but remember to take time to reflect. Most importantly, do not wait for things to happen to you

for opportunities to walk up and step on your toes; make opportunities and connections for yourself and if you don't see any.....put your head on a swivel and get creative. Conferences, higher education and social arenas are the time and the place to swing for the fences. Make your life as much as it can be at any given time.

Don't ignore the rest of your life

Remember, you have family and friends who you probably want to keep as you pursue your career in outdoor leadership. Making time for all of these things is a combination of time management and an understanding what you want out of life. Each of the panelists answered questions about 'the rest of life'. Questions ranging from family and finances to college loans and beyond. All of these other areas make up a significant part of our lives and often play readily into your quality of life. There is give and take as you pursue your career. Remember to take care of yourself and those you love. Be fiscally responsible and live within your means. Make good general life decisions and you will be a happier outdoor professional. Every panelist has a life outside of their career and there too, is no 'right way' but all agreed that obtaining a balanced life is an important component of being a happy individual.

Wilderness in the Northern Rockies: An Analysis of the Northern Rockies Ecosystem Protection Act

Brett Haverstick

On September 3, 1964 President Lyndon B. Johnson signed the Wilderness Act into law. It immediately designated 9.1 million acres of land as Wilderness and established the National Wilderness Preservation System. Today, there are close to 50 million acres of designated Wilderness in the contiguous US; 107 million acres including Alaska. The Alaska National Interest Lands Conservation Act, 1980 (ANILCA) was signed into law by President Carter, and preserved 56 million acres throughout the last frontier state. The Northern Rockies Ecosystem Protection Act (NREPA) aims to preserve the vast track of road-less country, 24 million acres of public land, in the northern Rockies bioregion. It would designate approximately 1,700 miles of waterways Wild & Scenic, as established under the Wild & Scenic Rivers Act of 1968. NREPA (HR 980) is currently awaiting a hearing in the House Sub-Committee of National Parks, Forests, and Public Lands. The bill has bi-partisan support.

The Northern Rockies Ecosystem Protection Act was conceived by the Alliance of the Wild Rockies in 1992. The Alliance worked with conservation biologists, local economists, and citizen groups to protect the road-less base from future development, and work towards establishing a set of scientific principles for ecosystem management in the northern Rockies bioregion. The northern Rocky Mountains still contain all of the species that were present during the Lewis & Clark expedition over two-hundred years ago. These unspoiled wild-lands are the last strongholds of the Grizzly, the Woodland Caribou, and the Bull Trout, and provide habitat for free-roaming herds of Elk, Moose, Cougar, Wolves, Big Horn Sheep, Bison, and more. The northern Rockies bioregion has been identified by conservation biologists as the largest intact ecosystem in the Lower 48. This can be largely attributed to the amount of federal public lands in the region, allowing for natural ecosystem functions and cycles to occur as they have for thousands of years.

In 1971, Congress ordered the US Forest Service to conduct a review (RARE I) of all the road-less lands within their jurisdiction, and appropriately make recommendations to Congress for Wilderness designation. After much political haggling and citizen complaints, the US Forest Service was again ordered by Congress to conduct a more thorough and honest inventory (RARE II) in 1978. The new inventory showed there were approximately 67 million acres of road-less lands, and the US Forest Service recommended less than 10 million acres for Wilderness designation in the Lower 48. Over the last thirty years, Wilderness designation has been scarce in the northern Rockies bioregion. Wilderness designation has manifested into political gridlock, with stakeholders working in collaboration to produce robust coalitions bent on seeing their vision for management of public lands succeed. The result has produced no new Wilderness designations in Montana or Idaho for twenty-five years. The last bill to pass Congress was the Lee Metcalf Wilderness and Management Act of 1983.

The Northern Rockies Ecosystem Protection Act would designate the remaining 24 million acres of road-less wild-lands as Wilderness in the northern Rockies bioregion.

Approximately 1.5 million acres in eastern Washington, and north-eastern Oregon would be granted protection from extractive development, as well as 9.5 million acres in Idaho, 8 million acres in Montana, and 5 million acres in Wyoming. The majority of Wilderness designation would occur on US Forest Service lands, with the road-less wild-lands of Glacier, Yellowstone, and Teton National Parks receiving designation too. Approximately 1 million acres of wild-lands managed by the Bureau of Land Management would receive protection as well.

Wilderness designation comes from three main sections in the Congressional bill: the Greater-Ecosystem additions, Sky Island additions, and the Connected-Biological Corridors provision. Conservation biologists have identified five core/greater ecosystems within the northern Rockies bioregion as keys to preserving native biodiversity in the bioregion: the Hells Canyon/Wallowa, Salmon/Selway, Cabinet/Yaak/Selkirk, Glacier/Northern Continental Divide, and Yellowstone. These 5 core wild-lands contain over 16 million acres of undeveloped road-less country. The Sky Islands are made up of isolated road-less mountain ranges in Washington, Oregon, and Wyoming and contain approximately 3 million acres. The Biological Corridors would build land and waterway bridges for migrating terrestrial and aquatic species in search of food and habitat during climate change. The road-less base is approximately 5 million acres.

Wild & Scenic River designation would occur throughout the bioregion, with all protected river miles occurring in Idaho, Montana, and Wyoming. Headwaters for the Clearwater, Salmon, Snake, Green, and Missouri Rivers would be permanently protected from development, a set of waterways that flow into 3 different ocean bodies: the Pacific Ocean, the Sea of Cortez, and the Gulf of Mexico. Designation could greatly benefit threatened/endangered fish populations, particularly the Bull Trout, West-slope Cutthroat Trout, Chinook/Sockeye Salmon, and Steelhead. With an inter-connected watershed approach, NREPA would work towards maintaining ecosystem function and integrity, deny road building erosion to devastate riparian zones, and filter water for down-stream rural and urban communities. The aquatic component of NREPA aims to protect the landscape from further mechanized degradation, and supply an abundant of excellent white-water recreational opportunities and solitude.

A greater ecosystem/core wild-land unit can be defined as an ecological land unit of sufficient scale to support native wildlife and plant associations, as well as large populations of vertebrate species through natural processes and cycles. Centuries of industrial extraction, elusive management, private development, and now climate change have scientists concerned that the current habitat and food supply for threatened/endangered species in the northern Rocky Mountain bioregion may not be adequate. With a predicted rise in temperatures, and shifting mosaic of vegetation, a larger, more productive range may be necessary at lower elevations for species to safely migrate and mate. Genetic exchange, instead of isolation, is the key for species robustness and production. The biological corridors provision of the Northern Rockies Ecosystem Protection Act is aimed at providing the necessary bioregional approach that many scientists feel is necessary to avoid further species degradation, and possible extinction.

Much of the northern Rockies are home to Nez Perce, Shoshone, Crow, Blackfeet and other Native American tribes. NREPA respects and honors all Native American treaty rights. Private property owners would not be directly affected by any provisions in the bill, and citizens would be encouraged to participate in a collected eco-stewardship effort. Land owners would be able to sell their land to the federal government, or place their lands into a conservation easement, perpetuating protection and management goals. The US Forest Service, National Park Service, and the Bureau of Land Management would be charged with the cooperative management of all lands mentioned under the bill, and no US Fish & Wildlife Service lands would be involved.

Instead of further development as hoped for by extractive industries, a National Wild-land Recovery Corps would be established, and responsible for the planning and restoration of 9 wild-land units within the bioregion. Over 1 million acres of damaged wild-lands would be restored through road removal, slope stabilization, invasive species eradication, native seed plantings, and the removal of unnecessary fish barriers. Local economists have predicted the entire costs of recovery labor/equipment would be at close to \$130 million. Current plans for logging the road-less base of the bioregion would be subsidized at a cost of \$375 million to the American taxpayer. Even with figures adjusted for economic trends today, NREPA would save the American taxpayer in the upwards of \$250 million.

The Northern Rockies Ecosystem Protection Act is currently awaiting a hearing in the House Sub-Committee of National Parks, Forest, and Public Lands. If passed in the House, the bill would move to the Senate floor for the first time. This is an excellent time to contact your local Congressmen and voice your support for the bill! All of the lands contained in this bill are public lands, lands that are your heritage and waterways that contain our natural history. No matter where you live, or how frequent you are able to recreate in these vast unspoiled wild-lands, I am urging you to take action and lend a voice for wildness. Now is the time to move ahead and resolve the long, drawn out road-less battle of our generation. A strong citizen position is needed to combat power politics and greed. The time has come for us to give back to the land.

To learn more about NREPA please go to www.friendsoftheclearwater.org or www.wildrockiesalliance.org. These websites will direct you on how to contact your local Congressmen. Thank you.

Aldo Leopold's Land Ethic: Fostering Sincere Care for the Outdoors

Ginelle Heller & Ben Speicher
Indiana University

Abstract

This presentation provided tools for outdoor educators to cultivate connections to nature within participants during wilderness courses. The tools were based on Aldo Leopold's essay "The Land Ethic" published in *A Sand County Almanac and Sketches Here and There*.

Introduction

Aldo Leopold, in his foundational essay "The Land Ethic", declared that society should extend its ethics to include a respect and love of nature. He argued that soil, water, and biota have intrinsic value separate from any economic or practical value ascribed to them by humans. He went on to say that unless humans learn to care for the land beyond their personal benefit from it, conservation efforts will always be in vain.

Outdoor educators often serve as important conduits for students desiring to experience the natural world. This presentation was an attempt to equip instructors with tools for fostering a love and respect of nature in students during wilderness courses.

Presentation Description

Aldo Leopold's essay "The Land Ethic" was introduced at the beginning of the presentation in order to lay the foundation of the presentation. Leopold said that society must develop an ethic concerning humanity's relationship to the environment—that society should stop viewing the natural world merely as something to be exploited and begin to view it as a resource which has rights. In 1951 he said that such an ethic had not yet been realized and until such an ethic is realized, sustainable management of natural resources would not occur.

In regard to methods of encouraging this ethic, Leopold stated that our current education need not be bolstered simply in quantity, but that perhaps a whole different type of educational strategies must be employed. The second part of this presentation contained ideas for different kinds of environmental education. The main idea of these educational techniques is interaction of participants with nature. Several educational "tools" were discussed during the presentation, but the two exercises below were practiced during the presentation.

1. Leopold Education Project Task Cards (from Pheasants Forever's Land Ethic Curriculum-the Leopold Education Project: Lessons in a Land Ethic)
2. Developing of One's Own Land Ethic

Conclusion

Until society learns to connect with nature in a personal way, effective natural resource management will not occur. Outdoor educators and instructors are often some of the key actors in an individual's life who can affect how that individual perceives and relates to nature. Activities such as those presented in this workshop may be effective techniques for fostering those individual connections with nature.

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Lets Get Wet: Service Learning on the Water with the Warren County Blueways

**Steve Spencer, Ed.D. and
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Western Kentucky University**

Abstract

This presentation detailed a service learning program for students at Western Kentucky University known as the Warren County Blueways. Over the past three years, the students have been involved with multiple facets of this unique program. The Warren County Blueways integrates the rivers in the community as a recognized part of the Greenways' park and trail system and is an effort to, "*Bring the rivers back to the community.*" A natural extension of this program is utilizing and accessing rivers and streams for recreation and sport. However, the Warren County Blueways goes beyond simply establishing a river trail system.

Blueways are more than just river trails

A Blueways definition might read: *Designated River trails following existing rivers and streams which may be traveled via paddle craft or motor craft.* However, a blueway system involves numerous trails for all conceivable uses. The blueways movement has been gathering momentum as more and more towns and cities develop linear parks to link together other existing parks and natural areas. These linear parks, also known as "greenways" or "greenbelts", often follow the most natural route which includes existing river riparian zones.

Riparian zones are the area on either side of streams and rivers, often in the flood plain. Riparian zones are usually unsuitable for buildings, but provide a natural corridor for wildlife. The riverside vegetation serves as a filter for stream water quality, maintain moderate water temperature, and to hold soil thus preventing or reducing soil erosion. Unfortunately, many of our rivers and riparian zones have become polluted and have been left as "waste areas" in our towns and cities. Many United States towns and cities were established along rivers and streams. These same waterways were integral to the success of the community for drinking, transportation, sewage, and refuse disposal. As our country grew larger and became more mobile and reliant on train and eventually automobile and truck transportation, the rivers often faded into the background as a neglected part of the landscape. In many cases they became open sewers for chemicals as more and more of our cities needed outlets for waste. Unfortunately, people believed the old axiom, "the solution to pollution is dilution", and the concept "out of sight, out of mind." People believed that the water could absorb and neutralize all the liquids and that the trash would simply disappear as the current would quickly whisk it out of sight. In most cases, our more educated populace no longer uses the rivers and streams as alternatives for landfills or as treatment systems for liquid pollutants. Today more than at any point in our country's history, we see Best Management Practices

(BMP) being applied with respect to the rivers. The old mantra, “the solution to pollution is dilution” has been replaced with, “we all live downstream.” Even with attitudinal and behavior changes, we can still see evidence of poor water and river conservation practices.

Warren County Blueways: Student Service with Tangible Results

This program was designed and continues by engaging students in development and maintenance of a Blueways trail system with access points throughout Warren County, KY and the region. The goal was active participation of students in completing a practical, valued project at the local level. The result of this project was *applied action* by students (think globally, act locally) and should serve as a model for other communities. As noted previously, the project goes beyond a river trails system. WKU Outdoor Leadership students worked with the community in various ways. This included documenting and mapping the rivers in Warren County for the purpose of motorized and non-motorized watercraft use. Students were actively engaged throughout this project. As the project continues to evolve, it will provide more opportunity for active student engagement in segments yet to come to fruition.

Technical Aspects of the Warren County Blueways

The Warren County Blueways is a unique project with multifaceted goals. A tangible and most obvious goal was to “*Bring the rivers back to the communities*” through greater awareness and stewardship programs. This project went way beyond basic establishment of a water trail system. Technological goals included a state-of-the-art GIS web-based mapping information system displaying the network access points in the over 180 miles of rivers in Warren County and small segments in the surrounding six counties. The web site contains pictures of access and river features throughout all of the featured rivers and streams (<http://gismaps.wku.edu/website/WCBWPics/WCBWBluewayBrochure.pdf>). Additionally, a printable brochure is available on the web page which shows a map with access points, roads, river distances between access points, and a verbal description of the access points. This website and brochure were developed as *living documents* which may be easily adjusted as the project evolves.

Students from WKU have been involved throughout this project. The WKU Outdoor Leadership Program is a part of the Physical Education and Recreation Department at WKU. Students from this program have collected data and provided input for numerous segments of this project. Because of the “living document” design, the Warren County Blueways project continues to evolve as more access points are developed and improved pictorial representation are gathered. WKU students have had interactions with various types of agencies, including government, not-for-profit, and private businesses during this process. No project of this magnitude could be accomplished without help from a number of sources. A brief summary of various partners and resulting student interaction that aided this project follows.

1. Western Kentucky University's Center for Geographical Information Systems continues to provide the expertise in GIS mapping and web page presentation. In particular, Kevin Cary, the Director of the Center for Geographical Information Systems has been a constant help in this project, providing technological expertise, advising and directing students from the GIS Center.
2. We Make Things Happen Corporation (WMTH), a local entity, donated web resources, graphic design and promoted the project. Their development of the printable map of the area was a great help.
3. Western Kentucky University's Outdoor Leadership Program provided the data collection, and fieldwork on the project. This involved students at the *ground level* collecting GPS coordinates and taking over 3,000 pictures of designated sites throughout the region. Students were also involved in designing and making signs (picture 4), sign placement, and monitoring stream segments. They were and continue to be *ambassadors for river stewardship*.

Multiple levels of government agencies were also involved. These included county, municipal and state government. Some of these included:

1. Greenways Commission of Bowling Green and Warren County provided a launching platform for this program. River access was identified as a priority in the Greenways Master Plan. Students have been active in these planning meetings and have become aware of the values associated with Greenways in communities.
2. The Warren County Fiscal Court supported by Bowling Green City Government implemented many structural improvements. By working with the entire Warren County government system, students have become more aware of civic responsibility.
3. The Warren County Parks Department provided assistance in maintenance, planning and continued site development. A number of our WKU students have been employed by this park system and they continue to contribute as citizen volunteers and paid employees.
4. The Bowling Green Parks Department provided assistance to city access points. Again, a number of our WKU students are both volunteers and are employed by this park system.
5. State government interactions with The Governors Office for Local Development (GOLD) required through grant requests through the Recreation Trails Foundation Grant program. Grant writing continues to be an ongoing challenge to Outdoor Leadership Students. As opportunities become available, this is yet another way to adapt and improvise ways to keep this program going.
6. State Government departments like the Kentucky Department of Fish and Wildlife Resources (KDFWR) provided support related to river access points. This state agency has expanded student networking opportunities for students through interaction and association with professionals in the field.
7. The Kentucky Division of Water gave their blessings in the hope that layering of water quality data might be displayed in future GIS Mapping efforts. Numerous students in the Outdoor Leadership Program have participated in training for Water Quality analysis with the Kentucky Division of Water who trained them for community outreach and civic interaction with water improvement issues.

8. County and state highway departments provided advice and suggestions when working on access at bridges and highways.
9. Not-for-profit agencies like the American Canoe Association's (ACA) Water Trails program were also involved. The ACA provided a framework for developing the trails system in accordance with national program expectations. One of the ultimate goals of this project is to be recognized by the American Canoe Association as an *ACA-Recommended Water Trail*. Each summer, the American Canoe Association selects twelve water trails from the U.S. and Canada as ACA-Recommended Water Trails. ACA-Recommended Water Trails meet a set of basic criteria and stand out as particularly good destinations for paddlers. These trails earn the right to use a special ACA logo in maps, signs and other printed material related to the trail. They also receive special recognition in the ACA Water Trail database on their website. *ACA-Recommended Water Trail* program requirements that were met for the Blueways project include:
 - a. Published information, mapping access information and distances (Blueways map on the web page).
 - b. Conservation and Leave-No-Trace educational materials to encourage appropriate low-impact ethics for water trail users (Blueways web page).
 - c. Inclusion of the Blueways map, Conservation, and Leave-No-Trace educational materials on the Greenways webpage.

What are the Project Benefits?

Although the Warren County Blueways is still in its infancy, multiple benefits are already being seen, including:

1. The improvement of the quality of life in Warren County and the region by opening up new possibilities for recreation.
2. By improving awareness of rivers and riparian areas in the region, citizens have become aware of the resources and their necessity for conservation of riparian zones.
3. Improvement of river access has resulted in more and easier access to river opportunities.
4. Economic development through tourism has resulted as the rivers become a destination for travel and recreation.
5. Blueways have become another venue for marketing and promotion of opportunities in Warren County
6. A new paddling club has developed as greater interest in rivers has developed.
7. Western Kentucky University's Outdoor Leadership Program students have benefited by providing a valuable public service and becoming engaged with various forms of government during the process.
8. Motorized boat traffic has been provided a way to distinguish which areas are suitable and safe for motor-boating. This includes jet skis, water skiing, and wakeboarding.
9. Fishing and hunting areas have been realized (out of the city limits of Bowling Green)

10. Instruction for all forms of watercraft uses and river rescue will be a natural extension of this program. Instruction in various types of activities like canoe, kayak, and river rescue are currently available.
11. WKU Outdoor Leadership students have experienced a real and applied positive influence in the community. They have made a difference and were recognized for their efforts by the Warren County Judge Executive.
12. And ultimately, by *bringing the rivers back* to the people of the region, the health of our community has improved.

Project Development-Timeline

How long has this effort taken and what were the steps? This project materialized over a number of years and was spearheaded through the Western Kentucky University Outdoor Leadership Program. Following is a timeline of steps chronicling how the project evolved.

1. Initial contact of community boaters with knowledge of the region and river access points.
2. Research, featuring Sehlinger's *A Canoeing & Kayaking Guide to the Streams of Kentucky*. The first edition of this was produced in 1978. The 5th edition added Johnny Molloy as a co-author and was published in 2004 as *A Canoeing & Kayaking Guide to Kentucky, Fifth Edition*.
3. Development of a rough map establishing known points from Sehlinger & Molloy's work with known navigable streams that were not included in *A Canoeing & Kayaking Guide to the Streams of Kentucky, Fifth Edition*.
4. Obtained Provost Initiative for Excellence as starter money to develop the project.
5. Coordinated the Project with the Western Kentucky University's Center for Geographical Information Systems in development of protocol for GIS and photographic data.
6. Utilized students in the WKU Outdoor Leadership Program (OLP) (trainees) and the University's Center for Geographical Information Systems (trainers). OLP students then gathered GIS Data and took pictures of river access and stream features (see picture 4). This was a community service provided by these students (The WKU students were recognized by the Warren County Judge Executive for their efforts).
7. Added partners of support for the program for grant funding purposes: The Kentucky Department of Fish and Wildlife Resources and The Kentucky Division of Water.
8. Received Recreation Trails Foundation Grant to develop access points and further develop the Blueways program.
9. Worked with We Make Things Happen (WMTH) a company that develops web pages, graphics, and tourism brochures to develop Blueways logo, web banner, printable map, and brochure.
10. WKU Center for Geographical Information Systems developed a template and GIS maps with assorted layers for the project.
11. Continued to add/update pictures and GPS data for GIS mapping process using WKU Outdoor Leadership Program students.
12. Refined/updated/corrected pictures and GPS data

13. Designed, made, and placed signage at all access points (see pictures 5 & 6).
14. Continued monitoring signage locations for changes, vandalism/maintenance
15. Provided PR with the help of WMTH Corporation regarding the project. Continued work with Greenways Commission of Bowling Green and Warren County, Warren County Parks and Bowling Green Parks departments in Blueways coordination.
16. Continued updating the GIS web page and making presentations about this project.

The Future

1. Work toward submission and recognition of the American Canoe Association's *ACA-Recommended Water Trail* for the Warren County Blueways
2. Maintain signage
3. Add pictures to access points and river features (OLP students) on the website
4. Maintain access points
5. Add new access points
6. Seek and write new grants for the program.
7. Continue to work with partners for the Warren County Blueways
8. Promote the development of a Whitewater Venue at Mitch McConnell Park.

WKU's Outdoor Leadership Program and the future of the Warren County Blueways

Western Kentucky University's focus on student engagement and community service led to the active participation of the students in the Outdoor Leadership Program (OLP). They have served and continue to serve, a primary role during the Warren County Blueways project. This civic project could serve as a model for other communities. Through active participation, students completed a practical, valued project at the local level. In essence, student efforts produced applied *action* (think globally, act locally). The project continues and is evolving. As the project continues, students will have more opportunity for active engagement in segments yet to come.

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Sustaining Expertise and Leadership in the Outdoors

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Introduction

The aim of this paper is to investigate how a leader's hard won expertise which is born of wide ranging and meaningful experiences in the outdoors can be sustained more productively. An essential part of developing good outdoor leadership is the ability to utilize knowledge gained from previous experience acquired in complex, ambiguous and sometimes unpredictable environments. The intention is to report a number of key ideas on how to support an individual's capacity to develop more effectively from these experiences. It has been proposed that adaptive expertise (an individual's ability to successfully deal flexibly with novel and unstructured situations) is an essential learning property for sustaining leadership practitioners in the outdoors (Galloway, 2008; Tozer, Fazey & Fazey, 2007). By providing an outline for thinking about what makes an adaptive expert we can then broaden the approach to what can be included to sustain leadership expertise in the outdoors.

Why Sustain Expertise?

In some circumstances, there is potential for outdoor leadership to become a routine matter rather than an evolving learning process that engenders self aware and adaptive practitioners who are able to master a diversity of challenges. This could be due to restrictions imposed by policies and operating procedures or a lack of task variation. It might be that a leader possesses insufficient capacity to operate independently, take the initiative or adapt to change. A possible consequence of these restrictions and monotony is the attrition of skilled practitioners from our professional community that leads to the creation of an expertise 'void' that is hard to fill.

In the outdoors, the nature of leadership is often varied. As such, most leadership practitioners should aim to achieve an appreciation of the situational complexities that they operate within to ensure decisions are appropriate and outcomes are more effective. Consequently, this can provide them with extensive experiential knowledge. The particular physical, social or intellectual skills they learn or use, such as utilising local knowledge, developing situational skills, or acquiring greater awareness of participants, all contribute to the development of the leader's personal comprehension of the dynamics in which they find themselves (Tozer *et al.*, 2007). By losing these practitioners, knowledge gaps will form and leadership development in the outdoors could well stagnate.

What Is Expertise?

It is widely regarded that expertise consists of those characteristics, skills and knowledge of a person that distinguish experts from novices and less experienced people. In

many domains there are objective measures of performance that can distinguish experts from novices. Expert medical specialists are more likely to diagnose a disease correctly; expert leaders are more likely to assess a risk accurately and so on (Ericsson, 2000). Expertise implies a capability toward skilful physical, cognitive and meta-cognitive behavior; an organised body of knowledge that is deep and contextualised; retrieving and applying knowledge flexibly to a new problem or new knowledge to existing problems; and an ability to notice patterns of information in a novel situation (Bransford, Brown & Cocking, 2000). Experts who are highly competent and have developed what they understand in a way that allows them to deal flexibly with new situations are described as having developed ‘adaptive expertise’ (Hatano & Inagaki, 1986). Understanding the distinctions between routine and adaptive problem solving and reasoning has important implications for learners as well as leaders, because adaptivity enhances learning through problem solving. In particular, this notion could have a bearing on how to preserve expertise within the dynamic and variable environment that outdoor leaders are embedded.

It is generally accepted that time served and purposeful experience play key functions in the development of expertise (Ericsson; 1998). Herbert Simon remarks that “It takes 10 years of extensive practice to excel in anything” (Simon, 1976, p.100). This view is upheld in the pedagogic and coaching literature (Gobet & Waters, 2003; Taylor, 2006). Similarly, narrative reports suggest that outdoor leaders may not hit their peak performance until at least five years of on-the-job experience. Experience alone certainly will not make an outdoor leader an expert, but it is likely that almost every expert leadership practitioner has had extensive experience in the outdoors. An important consideration then is the retention of this hard earned and valuable expertise within our profession.

What is Adaptive Expertise?

The concept of *adaptive expertise* is concerned with the idea that people who have had extensive, purposeful and varied experiences of doing something (which includes intellectual, physical, emotional and social undertakings) and are capable of responding to novel unstructured situations skilfully and successfully (Fazey, Fazey & Fazey, 2005). This element might be recognised in any outdoor leadership practitioner who is able to act more flexibly when problem solving in complex, ambiguous and unpredictable environments (Tozer *et al.*, 2007). Such flexible performance is one of the characteristics that can distinguish an expert from a novice (Bransford *et al.*, 2000). Moreover it is what sets apart different types of experts (Hatano & Inagaki, 1986). This concept has important implications for how we can ensure the longevity of leadership practitioners staying in the job, they are acting within the endlessly varying, dynamic conditions that can occur in the outdoors (Galloway, 2008; Tozer *et al.*, 2007).

Hatano (1982) proposed the notion of adaptive expertise as an ideal for educational researchers looking to find ways to teach students so they can apply learned procedures flexibly or adaptively. Keith Holyoak (1991) aptly makes the distinction that “...whereas routine experts are able to solve familiar types of problems quickly and accurately, they have only modest capabilities in dealing with novel types of problems. Adaptive experts, on the

other hand, may be able to invent new procedures derived from their expert knowledge” (Holyoak, 1991 p. 310). Giyoo Hatano and Kayoko Inagaki (1986) take this characterization further and state that adaptive experts are able to (1) comprehend why those procedures they know work; (2) modify those procedures flexibly when needed; and (3) invent new procedures when none of the known procedures are effective. According to Warren Bennis (2003), adaptability is a critical quality of leadership that determines how a leader will fare in any given situation, as it enables them to respond quickly and intelligently to demanding changes. Bennis sees it as the ability to identify and seize opportunities. It allows leaders to act and then reflect upon results instead of attempting to collect and analyze all the facts before acting (Bennis, 2003).

Developing Adaptive Expertise

Where does the “adaptiveness” of adaptive experts come from? Adaptive experts are assumed to possess as the source of their flexibility and inventiveness, conceptual knowledge of the objects of the procedures (that is, what each of these objects is about). “Flexibility and adaptability seem to be possible only when there is some corresponding conceptual knowledge to give meaning to each step of the skill and provide criteria for selection among possible alternatives for each step within the procedure” (Hatano, 1982 p. 15). Such conceptual knowledge enables experts to construct mental models of the major entities of the domain, which can be used in mental simulation. Using Holyoak's (1991) expression, the key to adaptive expertise is the development of deeper conceptual understanding of the target domain. Needless to say, such conceptual understanding must be connected to procedural competencies and meta-cognitive awareness and monitoring of one's own understanding.

Adaptive experts exhibit a strong proactive desire to continuously learn from their experiences, improve performance and accept that their understanding will always change (Hatano & Oura, 2003). Underpinning beliefs and attitudes, along with the behaviors that are inevitably associated with such views can be both learned and taught (Perkins & Grotzer, 1997; Perkins, Jay & Tishman, 1993b). For any leader who is more able to learn flexibly in new situations, as with any learning, the process will become natural, unconscious and automated (Shuell, 1990). Fazey *et al.*, (2005) suggest that a person who learns how to be a good learner will eventually develop greater openness to change and become more adaptive. It is anticipated that they will become a more effective outdoor leader as a consequence.

This paper now considers some key aspects that, through understanding their principles and interactions (Figure 1), can influence the development of adaptive expertise for outdoor leaders. While studies of learning may provide differing perspectives on how to assist individuals in gaining adaptability, this section now explores the importance of: (1) practice, (2) variation in practice (3) reflection in learning and (4) ‘good thinking’

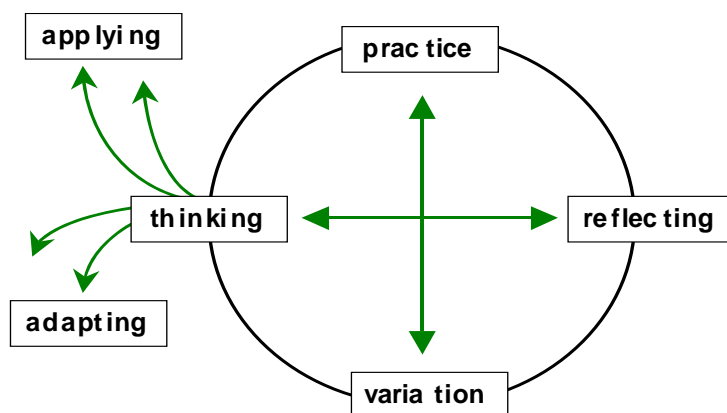


Figure 1. Interactive Aspects of Learning (Tozer, Fazey & Fazey2007).

For learning to be effective, practice should be contextualized and relevant thus creating enhanced opportunities for retention and transferability (Cross & Lyle, 1999). A useful *koan* in addition to ‘practice makes perfect’ and ‘perfect practice makes permanent’ might be ‘purposeful and varied practice makes portable’ (Tozer *et al.*, 2007). Retaining and transferring what an individual has learnt can be improved by experiencing variation in practice and/or frequent changes that introduce unrelated elements, which in turn can lead to improved adaptability, rather than constantly practicing the same thing (Magill, 2006). Those who have experienced variation during practice are more likely to develop adaptive expertise (Tozer *et al.*, 2007). An illustrative example here could be of learning to navigate in only one mountain region as opposed to many areas. We can expect that the leader who has experienced greater variation of navigating is more likely to adapt to the challenges of navigating in a new location.

Acquisition of knowledge through the medium of reflection is not a new concept. Plato argued that to know something required recollection and is therefore a reflective and introspective process. Boyd & Fales (1983) take the view that whilst reflection enhances our knowledge it may also confront our ideas and underpinning personal theories or conceptions. Reflecting on a situation allows us to develop and view things differently or recognize and acknowledge unexpected similarity. Roberts (2002) considers it a transformation process whereby experience and theory become knowledge. Leberman and Martin (2004) state that “...reflection is fundamentally important, provides a major contribution to personal growth and therefore affects the transfer of learning” (Leberman & Martin, 2004, p. 174). Taylor (2006) regards reflection to be a potent process in gaining a deeper understanding of the reasoning behind why things do or don’t work. All these can be accommodated in the idea of understanding as a relationship.

Becoming adept at taking different perspectives by applying ideas like variable and reflective practice can induce change in our person-world relationship. While this notion does not capture fully the active learning process, it does provide a useful heuristic to communicate accepted wisdom on how an individual changes their understanding. By evolving as good thinkers we are more likely to seek different perspectives allowing us to question our

understanding of ‘good leadership’ (Higgs, 2003). According to Perkins, Jay and Tishman, (1993a) good thinking can be characterized by seven broad dispositions: to be broad and adventurous; aim toward sustained intellectual curiosity; to clarify and seek understanding; to plan and be strategic; to be intellectually careful; to seek and evaluate reasons; to be meta-cognitive. Each disposition has three elements: *inclination* (a person’s felt tendency towards a particular behavior), *sensitivity* (a person’s alertness towards a particular occasion), and *capability* (the ability of a person to follow through with a particular behavior). A good leader may be disposed towards all of the thinking behaviors and appropriately exhibit one or more of them depending on the situation. The theory of good thinking is based on logical argument (Tishman & Perkins, 1995; Tishman, 2001) and growing empirical evidence for the importance of dispositions (Facione, Facione & Giancarlo, 2000). Perkins *et al.* (1993a) contend that it raises provocative questions about existing models of thinking, casts new light on controversial issues in the field, connects in interesting ways to findings in other promising areas of cognitive research, and has important implications for the education of good thinking.

Broader Implications

Within the field of outdoor leadership, the capability of individuals to appropriately solve complex and often risk laden problems, whilst adapting to the challenges faced by ungoverned circumstances, remains critical to group outcomes, participant safety and the profession as a whole (Galloway, 2008; Tozer *et al.*, 2007)). The outdoor context is an important dynamic in terms of the demands placed upon the adaptability of the leader. This includes the uncertain and complex nature of their followers, group goals, individual needs as well as that of the environment itself. As a leadership practitioner begins to acquire specific competencies and hence establish their expertise in the outdoors, it is important that the capability to be innovative and flexible is factored into their development pathway. Any display of adaptive expertise will guide an outdoor leader’s depth of understanding and habits of mind that in turn may shape success in their career; potentially enabling leadership practitioners to be pioneers in their field. It is suggested here that a desirable outcome of developing a leader’s ‘adaptiveness’ is their continued participation in and contribution to our professional community.

Research on adaptive expertise demonstrates that the skills, knowledge, and dispositions comprised by adaptive problem solving and adaptive practice plays an important role in fostering learning and the development of expertise and excellence. It is my view that the concept of adaptive expertise holds great promise in sustaining the professional development of leaders. The notion of adaptive expertise can help us gain analytical purchase on the habits of mind, forms of knowledge, and skills that enable some leaders to engage in continuous learning through practice and to ‘take more’ from experience as they develop and refine expertise, improve their instructional practice, and help their followers develop adaptive learning processes. Educational researchers have begun to focus on adaptive expertise as an important process to understand and promote in an increasingly complex, knowledge-intensive, and fast-changing world (Bransford *et al.*, 2000).

Summary

Using the practical context of outdoor leadership, my aspiration is to establish the value in recognising how a leader's hard won expertise, born of wide ranging meaningful experiences, can be guided productively towards adaptability and thus sustained more effectively. Embracing adaptive expertise as a goal for leadership development also requires a fresh look at the processes of learning. In this setting, learning involves the need for practice, variation in that practice along with effective reflection and seeking out new perspectives through good thinking to achieve understanding within the domain of leading.

In recognising the importance of experiential knowledge for effective leadership and outdoor practice, I am not making an argument for solely using this dimension as a replacement for appropriate training to inform decision-making or for developing what an individual understands about leadership.. Rather, this paper aspires to call for increased rigor in using what is already known about turning experience into more rounded understanding and reframing some of the currently used learning approaches to promote the effective development of adaptive expertise in leadership practitioners and subsequent continued professional development in order to sustain the valuable expertise that exists within the outdoors.

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Emergent Group Development

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Introduction

What group development models do you know? Well, if you are like myself and most of my students, the model of group development that you have the most experience with, or perhaps the only group development model that you are aware of, is some form of Tuckman's (1965; Tuckman & Jensen, 1977) "orming" model of group development.

Why is this *the* model that adventure education always tends to go back to when literature in our field, such as Attariam & Priest (1994) or more recently O'Connell & Cuthbertson (2009), have shown that there are many potential models that could be used in adventure education settings? Based on my own personal experience and discussions with many adventure education students and professionals, I believe that we use Tuckman's "orming" model because it is relatively simple to remember, due to the alliteration of the stages; it intuitively seems to fit, to some degree, the experience of many groups; and, most importantly, it has a certain heuristic value.

The first time one of my past professors described an explanation as a heuristic I was sent to my on-line dictionary to understand what he was talking about. In that case, the heuristic was a strategy to help explain how Monte-Carlo methods of statistical sampling worked; however, in the case at hand, adventure educators often use group development models to give their groups of context of hope. I, personally, have taught lessons on group development to teach the implicit lesson of, "Hey your group isn't broken. It's healthy to have this 'storming' stage."

Unfortunately, using Tuckman's model has some distinct problems. First, it is sometime difficult for students identify how actual tangible events fit in the model. For some it may take time to personally identify with the stages of the model. Second, I question the wisdom of presenting a single, overarching view of group development. If we present Tuckman's model as "the truth", then there lies the distinct possibility that the group's own experience may deviate from the model enough that the heuristic value of the model may be undermined. These quandaries led me to develop a group development model lesson that was more relevant for the individual student and the group, allow different ways of viewing group development, but still meet the heuristic goal of providing a context of hope for students.

Lesson

Let me start by giving some context. I have taught this lesson for adventure education students on wilderness expeditions, at staff trainings, and as part of a graduate level class on facilitation techniques. Each of these groups of students and learning contexts offer different opportunities and constraints; therefore, although I am presenting this lesson in singular

manner, I encourage you to modify this lesson to fit your own needs. This lesson is focused on providing a heuristic to help students understand their own group development process that is personally meaningful for them.

Rather than imposing the Tuckman model on the group, this lesson is designed to help students identify and understand models of group development that are already personally meaningful to them. This is based on the assumptions that there are implicit models of group development in many of the stories which we all consume and live. Therefore, the first step is intended for students to help identify stories with implicit group develop processes in them.

What small groups have you personally or vicariously experienced? Most modern Americans likely have more vicarious group experiences than personal ones. There are stories of group development in the books we read, the movies we watch, and stories in the news. Every student I have worked with has always had multiple group experiences that they personally understand and often personally identify with. These groups include the ones in movies such as Toy Story, The Wizard of Oz, or The Breakfast Club; in books; such as, Mutant Message Down Under, Lord of the Flies, and the children's book The Great Brain; or in stories about the development of political or sports teams. But which one of these group experiences is most meaningful for your students? Well the first step is to ask them.

The lesson starts with a journaling assignment. I ask students to identify a story that is based on a small group of 4 to 15 individuals. First, I ask the students to explicate the basics of the story. What is the setting? Who are the characters (group members) and how do they change over time? What challenges does the group face? What strategies do they use to deal with those challenges and what levels and types of success do they achieve? The next step is slightly more complicated. I ask students to identify how the group changes over time and to abstract a model of group development based on that group's experience.

Often it is helpful to give students an example to help them conceptualize what the lesson entails. One of the stories of group development that I like to use is Tolkien's famous Fellowship of the Ring. Although the recent trilogy of spellbinding movies makes this a contemporary example, the story is personally meaningful to me due to the hours that I spent listening to my fifth grade teacher read the trilogy to me and my classmates.

The setting is Middle Earth. This is a place much like our own (in sort of a middle ages European type of way), but the sentient denizens are not as limited as they are in our own world. In fact, the fellowship of the ring is a group that is populated by not only humans, but also halflings (hobbits), a dwarf, and an elf. Although Frodo Baggins is holding the greatest weight of responsibility in this story, all of the characters have a story of their own. As this group sets out on a quest to rid their community of the evil that resides in their community, they face avalanches as well as subterranean and fiery antagonists. At some points the group overcomes these challenges, while at other times the group finds itself stymied or facing the loss of a group member.

After the basics of the story are discussed now comes the opportunity to abstract a model. First, I caution students that a model is a simplification of reality. Second, I caution them that while many models (such as the one I am about to present) are made of discrete sequential steps, I challenge them to go beyond this if it makes sense for their group's experience.

The model that I derived from Tolkien's story is a seven stage model. First, the group members are motivated to join together. For Frodo and the other hobbits this motivation is delivered by Gandalf the Grey. Second, the members make the journey to joining the group. For the prominent story of the hobbits, they are aided by the mysterious ranger, Strider, as they attempt to evade the ring wraiths and reach the land of the elves. It is only at the third step that the group actually forms. This is a formal occasion where a diverse group of individuals devote themselves to the group's goal. This group then faces challenge as it tries to pass through the mountains and is then faced with the gigantic fiery demon in the Mines of Moria. They barely escape through these challenges as they arrive to another elven haven and have a moment for reflection before they continue on their journey. It is at this point that the Fellowship ends, the group disbands and smaller groups of individuals split up to continue the group's goal.

After students have had enough time (fifteen minutes to a week of time) to write about their groups and identify the implicit model of group development, the next step is to have student understand other models of group development. Students should gather in small groups of two or three, share the basics of their stories and explain their group model. Next the dyads or triads of students are charged with combining their models into a single unified model that best explains the group development process in all of their stories.

The last part of the initial lesson is a whole group presentation of the lessons. Each of the dyads is given the opportunity to orally and visually present their emergent group development models and briefly explain the underlying stories. The oral presentation of the model can be a straightforward explanation or it can take a slightly more artistic bent (a song, an epic poem, a dramatic reading) if the group is inclined to do so and the time allows. Similarly, the visual presentation of the model can be a drawn model, a sculpture, or bit of theater. The remaining dyads and triads are then given the opportunity to pose questions to the presenters about their model.

Conclusion

At this point, the students have thought deeply about group development and they have shared a story to other group members that is interesting or meaningful to them. I, especially, appreciate this sharing as it offers interesting insights into which stories students choose. Does the group in their story fail miserably and sputter into failure? Does the group break down during a time of challenge only to reform into a stronger whole? Or does their group barely flirt with any notion of challenge? While some students may choose obscure and erudite stories, others will choose popular stories, or talk about the book that they just finished reading to their child. The insights that I gain about my students from their choice of stories and how they abstract a model from their story often provide good conversational starters or meaningful metaphors to use when counseling them through difficult moments.

This exercise also results in a plethora of models of group development. These models can be referred to at different stages of the group experience. During a course, I regularly challenge students to revisit their model, use it explain their group's experience, or modify the model to better fit the experience. Not only is this useful to create a context of hope (assuming their model has some level of success after a period of challenge), but it can

also lead to some lively discussions about what actually happened and what was the associated meanings of those transpired events!

I challenge you to take this lesson, try it out, mix it up, and let me know how it works for you. I would be interested in collaborating with other researchers to understand how individuals' and groups' implicit models affect their experiences during adventure education experiences and what they take away from those experiences.

“All that is gold does not glitter,
Not all those who wander are lost;
The old that is strong does not wither,
Deep roots are not reached by frost.” (Tolkien, 1965)

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