Research in Outdoor Adventure: Overview and Analysis

Alan Ewert

This paper reviews the research efforts made in the field of outdoor adventure recreation. It provides a historical overview of those research efforts and provides a number of proposals for improving those efforts. In addition to this analysis, four perspectives for future research efforts in outdoor adventure are provided: psychological, sociological, economic and environmental.


"The tragedy of Science is the slaying of beautiful hypotheses with ugly facts." T. H. Huxley

How do we know the world? How do we get a sense of what is real and what is illusion? As the general public, we have the luxury of using hearsay and intuition. Program planners often employ the added benefits of reading and observation. As researchers and evaluators the questions are approached through systematic inquiry and testing. It is at this point that the question often arises as to what research has done and should do in the area of outdoor adventure recreation. This paper will provide an overview and analysis of the research done to date in outdoor adventure recreation.

In the Beginning

Outdoor Adventure recreation can be defined in the following manner: a self-initiated, non-consumptive recreational activity engaged in a natural outdoor setting, that contains real or perceived elements of risk in which the outcome is

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uncertain but influenced by the participant and/or circumstance. (Ewert, 1985a).

The history of systematic inquiry and research into these types of programs originated in the 1950's. It was during this time period that efforts were first made to identify the extent and impact of adventure-based activities upon the individual. Schraer (1954) attempted to identify the number of public schools using survival training programs in their curricula. Three years later, Morse (1957) wrote on of the first scientific articles on the therapeutic values of outdoor camping. His points concerning the advantages of outdoor programs, including: control without institutionalization, real living situations, motor outlets for catharsis, creative learning and adventures without anti-social behavior, serve to remind future researchers not to re-invent the wheel; but rather to move on to additional areas of concern.

The 1960's marked the beginning of the Social Benefits phase of outdoor adventure recreation. The works by Kelly and Baer (1968, 1969, 1971), considered a foundational work in the field, provided some initial and relatively conclusive evidence that adventure-based activities can produce socially desirable benefits such as reduced recidivism rates. In addition, the work by Moses (1968) and Moses and Peterson (1970) provided additional support for the positive effects of participation in adventure-based survival courses with demonstrated improvements in G.P.A. and eligibility for academic readmission.

It was also during this time when the first of a long line of research efforts on Benefits to the Individual was seen. Beginning with Clifford and Clifford (1967) this research tract included many noteworthy studies such as those by Adams, 1970; Smith, 1971; Wetmore, 1972; Heaps and Thorstenson, 1974; Nye, 1976; Robbins, 1976; George, 1978; Stogner, 1978; and Black, 1983. The most prolific effort has been in the area of improving self-concept, followed by self-actualization (Vander Wilt and Klocke, 1971; Young and Crandall, 1984), modification of levels of fear (Ewert, 1986) and self-efficacy (McGowan, 1986).

The third area of research could be termed the Wilderness Experience. Efforts in this area have involved investigating topics such as: motivations (Young, 1983; Mitchell, 1983; Kaplan, 1984; Ewert, 1985b), expected benefits (Lambert, 1978; Schreyer and White, 1979; Driver and Brown, 1987; Ewert, 1987) and levels of satisfaction (Manning, 1986). Inherent in many of these studies is the underlying dimension of participation in some form of outdoor adventure recreation, (e.g. backpacking, rock climbing, or whitewater canoeing).

Subsumed within all three research areas is the theme of outdoor adventure as a type of therapeutic intervention. A substantial research effort has been made linking outdoor adventuring as a form of therapy with goals such as enhanced self-concept, improved social attitudes and behavior, improved physical health or reduced emotional problems (Barcus and Bergeson, 1972; Wright, 1983; Smith, 1982, 1985a; Robb and Ewert, 1987).

To date, there is a substantial amount of research literature currently available concerning outdoor adventure. In terms of numbers alone, Thomas (1985) reports over 700 articles written on adventure education, many of which are research studies. There are also a number of concerns which have constantly appeared. The following section discusses those concerns and provides an assessment of the current state of research in outdoor adventure recreation.

A Research Assessment

One of the earliest and most comprehensive attempts at assessing the quality of the research work done in outdoor adventure was done by Shore (1977). While focused primarily on Outward Bound, this work covers a variety of different types of programs and methods. Of further use is Shore's comprehensive bibliography,
which includes a wide mix of bibliographic topics such as education, psychology, corrections, and other literature available at the time.

As a framework for discussion, Shore developed two categories of studies. These categories consisted of those studies "included" in the assessment because of their ability and research methodology and those studies "not included". It should be noted, however, that one criticism of Shore's work has been the lack of an explicitly stated criteria for categorizing the various research (Kraft, 1985). Studies which comprised the "not included" category were deemed as too flawed or conceptually unsound to warrant an elaborate assessment. Shore's conclusions concerning the quality of the research completed up to that time were guarded and reserved.

One must conclude, overall, that the research literature of Outward Bound and the research literature up to that time in adventure education is weak. It has focused on disciplinary issues (self-concept, self-esteem) to the virtual exclusion of their relationship to programmatic issues (length of course, mix of activities, and nature of instruction). There have been few attempts to link outcome measures with program components and very little statistical analysis in this sense as opposed to statistical reporting. (Shore, 1977)

While the most comprehensive, Shore's work was only one of several occurring during the 1970's. A fact not surprising when one considers that after the change and experimentation in both education and recreation of the 1960's, there was much more to write and research about in the 1970's. One particularly popular form of reporting was the annotated bibliography. Within this category, a substantial number of studies have been reported by Mattews (1976), Pollak (1976), Thomas (1985) and Colan (1986). Other useful bibliographies and listing of abstracts included: the American Alliance of Health, Physical Education, Recreation and Dance series entitled, "Research in Outdoor Education: Summaries of Doctoral Studies", and the Education Resources Information Center (ERIC) and the Clearinghouse on Rural Education and Small Schools (CRESS) supplements entitled, "Selected Bibliographies in Outdoor Education".

While useful from a documentary perspective, the annotated bibliography provided little guidance to the researcher concerning an evaluation of the conceptual basis of the study, it's methodology and the credibility of the findings. From the research perspective, of greater use are the works of Vogl and Vogl (1974), Godfrey, 1974, lida (1975), Lowenstein, (1975), Shore (1977), Staley (1979), Burton (1981) and Ewert (1983). Within each of these works, critiques of the selected studies and suggestions for the direction of future research efforts are provided. Table 1 summarizes the observations of several aforementioned authors.

The general view of the research done in the field of outdoor pursuits has been reserved, due primarily to the over reliance on self-selected samples and measures using a self-report format. Despite these reservations, there have been literally hundreds of studies which have purported benefits from participation in outdoor pursuits. These studies have employed a number of methodologies, as listed in Table 2 and have generated findings in a variety of areas. These areas have included: therapeutic dimensions, individual and group benefits, behavior modification and motivations for participation. The generalized findings of a selected group of studies in each of the above mentioned areas are presented in Tables 3, 4, 5, and 6.

While the studies listed in the Tables were selected because of their "representativeness" there are many other studies which were not listed. As lida (1975: 219) correctly notes, however, most of the
<table>
<thead>
<tr>
<th>Source</th>
<th>Overall Impression of Completed Research</th>
<th>Specific Problems</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vogl and Vogl (1974)</td>
<td>Insufficient and limited Usually done by graduate students Few national reporting on findings</td>
<td>Few historical, philosophical or course content studies Insufficient training in graduate programs</td>
<td>Larger samples More evaluation studies of program Distinguish between cognitive and affective</td>
</tr>
<tr>
<td>Iida (1975)</td>
<td>Generally positive benefits Wide range of paper and pencil instruments Self-theory framework</td>
<td>Overuse of standarized instruments UnSophisticated research designs”Ceiling Effect” of participants Small sample size</td>
<td>More measurement of behavioral modifications Reasons for non-participation Presence of long term effects</td>
</tr>
<tr>
<td>Shore (1977)</td>
<td>Focus on outcomes Lack of emphasis on program components Substantial supportive literature</td>
<td>Little statistical analysis Over-emphasis on descriptive reporting</td>
<td>Identify effects of various program components More sophisticated statistical analysis</td>
</tr>
<tr>
<td>Ewert (1983)</td>
<td>Mixed but generally supportive Substantial convergent validity</td>
<td>Few causal comparative designs Over-reliance on convenience sampling Over-projected expectations</td>
<td>Development of casual models Studies using more “main stream” populations Construction and testing of explanatory theories</td>
</tr>
</tbody>
</table>
Table 2
TYPES OF RESEARCH IN OUTDOOR RECREATION

- historical  
- descriptive  
- case study  
- observational  
- causal  
- behavioral analysis  
- ethnographic  
- correlational  
- experimental  
- quasi-experimental  
- critical-incident  
- single-subject  
- time sampling  
- mechanized collection

Table 3
THERAPEUTIC DIMENSIONS

- The Therapeutic outdoor camp  Morse (1957)  
- Self-acceptance  Vander Wilt and Klocks (1971)  
- Coping rather than defensive strategies  Bechtel (1972)  
- Re-entry problems  Robbins (1976)  
- People with disabilities  Roland and Havens (1981)  
  Smith (1982; 1985)  
- Self-actualization  Young and Crandall 1984  
- Wilderness group therapy  Nurenberg (1985)  
- Risk recreation and persons with disabilities  Robb and Ewert (1987)

Table 4
INDIVIDUAL/GROUP BEHAVIOR

- Reduced recidivism  Kelly and Baer (1969, 1971)  
- Reduced drop-out rates  Moses (1968)  
- Increases in G.P.A.  Moses and Peterson (1970)  
- More realistic perceptions of self  Yensel (1972)  
- Reduced racial conflict  Potts (1974)/Nelson and Martin (1976)  
- Reduced deviant behavior  Gaston, et. al., (1978)  
- Long-term environmental attitudes  Crompton and Sellor (1981)  
- Effectiveness in substance abuse  Stich (1983)
Table 5
SELF-CONCEPT/SELF-ESTEEM/LOCUS OF CONTROL

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Reference</th>
</tr>
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<tbody>
<tr>
<td>Improved self-concept with lower initial levels</td>
<td>Clifford and Clifford (1967)</td>
</tr>
<tr>
<td>Enhanced internal locus of control</td>
<td>Borstelman (1970)</td>
</tr>
<tr>
<td>Higher levels of self-concept after one-year follow-up</td>
<td>Heaps and Thorstenson (1974)</td>
</tr>
<tr>
<td>Significant improvement in self-concept when compared to control</td>
<td>Nye (1976)</td>
</tr>
<tr>
<td>Equalizing on pre-test (covariate) significant improvement</td>
<td>George (1978)</td>
</tr>
<tr>
<td>Increases in self-esteem</td>
<td>Bertolami (1982)</td>
</tr>
<tr>
<td>Positive relationship between program length and self-concept</td>
<td>Ewert (1982)</td>
</tr>
<tr>
<td>Situational specific self-concept</td>
<td>Wright (1982)</td>
</tr>
<tr>
<td>Increases in multi-dimensional self-concept</td>
<td>Marsh (1986)</td>
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</tbody>
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Table 6
MOTIVATIONAL CLUSTERS IN LEISURE PURSUITS

<table>
<thead>
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<tr>
<td>LEISURE ACTIVITIES</td>
<td>MOUNTAIN CLIMBING</td>
<td>OUTDOOR RECREATION</td>
</tr>
<tr>
<td>- intellectual stimulation</td>
<td>- challenge/risk</td>
<td>- excitement seeking</td>
</tr>
<tr>
<td>- catharsis</td>
<td>- catharsis</td>
<td>- escapism</td>
</tr>
<tr>
<td>- expressive compensation</td>
<td>- physical setting</td>
<td>- fitness</td>
</tr>
<tr>
<td>- hedonistic companionship</td>
<td>- recognition</td>
<td>- sociability</td>
</tr>
<tr>
<td>- supportive companionship</td>
<td>- locus of control</td>
<td></td>
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<tr>
<td>- secure solitude</td>
<td>- creative</td>
<td></td>
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<tr>
<td>- routine, temporary indulgence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- moderate security</td>
<td></td>
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<tr>
<td>- expressive aestheticism</td>
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</table>
studies done in the area of outdoor pursuits revolve around a self-theory framework. This theory suggests that individuals behave in a manner congruent with how they perceive themselves. Where outdoor pursuits come into play is in the corollary of this theory which states that an individual's response to a situation both reflects and determines his/her current state of self-concept. In outdoor pursuits, a under researched postulate of this theory suggests that an unsuccessful or debilitating adaptation to this outdoor situation may cumulatively effect the self-concept in a negative way. For example, little is known as to what happens to an individual if he/she fails to complete a course component such as rock climbing.

While as previously stated, the primary thrust of the majority of the research efforts to date in outdoor pursuits have been concerned with some permutation of the self-theory concept, there are a variety of additional areas and issues in need of investigation. These areas are listed in Tables 7 and 8.

<table>
<thead>
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<th>Table 7</th>
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<tbody>
<tr>
<td>CURRENT RESEARCH TOPICS IN OUTDOOR ADVENTURE EDUCATION</td>
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<tr>
<td>Participation Rates</td>
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<td>Demographics</td>
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<tr>
<td>Program availability</td>
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<tr>
<td>Cost/Benefit Analysis</td>
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<tr>
<td>Physical Fitness</td>
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<tr>
<td>Social Integration</td>
</tr>
<tr>
<td>Level/Types of Fears</td>
</tr>
<tr>
<td>Self-Efficacy</td>
</tr>
<tr>
<td>Motivations/Benefits</td>
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<tr>
<td>Price Elasticity</td>
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<tr>
<td>Staff Selection and Development</td>
</tr>
</tbody>
</table>

Program Components:

- length
- order of activities
- type of activities
- location and topography
- participant characteristics
- season

Model testing and Verification

Historical Events and Emerging Trends

Transfer/Generalization

Staff Burn-Out and Turn-Over

Certification

Marketing
Table 8
RESEARCH AND EVALUATION ISSUES IN OUTDOOR PURSUITS

Latent vs. Measuring Variables
Model Testing
Single-subject Designs
Naturalistic Inquiries
Behavioral/Archival Analysis
Documentary Evidence
Validity Concerns: Triangulation Techniques
Computer Applications
Multivariate Statistics
Experimental/Quasi-experimental Design
Matching/Blocking Procedures
Multivariate Analysis
Goal Evaluation
Sample Size and Type
Implementation/Measurement Problems in Programs
Attrition/Non-respondents
Multiple Indicators
Scale/Instrument Development

It should be noted that while it may appear redundant to list self-concept as a topic in need of further research, what is suggested here is a greater sophistication in this type of analysis. While studies in self-concept have historically used a self-report psychological measure, little has been found concerning the nature or reasons for any observed change. Future studies of self-concept changes through outdoor pursuits can contribute to a greater overall understanding by focusing in on how, why and when change occurs.

The lesson generated by this historical perspective on the research completed in outdoor adventure is that the future of meaningful and "acceptable" research in this area lies in the area of methodological pluralism; that is, the use of a variety of approaches and techniques. In addition, there is a need for more sophisticated analytic procedures and methods. What we know about the effects of participation in outdoor pursuits upon individuals has been generally been derived from: (1) their everyday conduct (naturalistic/ethnographic studies and direct involvement of
the researcher as a participant), (2) the impressions made on others (observation techniques), (3) self-characterizations and reports (personality inventories and surveys), (4) what others have written (documentary and literature inquiries) and (5) their observed behaviors (behavioral analyses and mechanized data collection). Given the complexity of the human organism, including the affective, behavioral and cognitive components of the human experience, the inherently diverse agenda for research of the human experience, the inherently diverse agenda for research in outdoor pursuits must encompass as many different sources of information as possible. [For a similar analysis in the area of personality research see Craik (1986).]

Unfortunately, this need for methodological pluralism has been transformed in reality to an overreliance on paper and pencil measurement of attitudes, most notably self-concept, using a self-report format. Webb et al., (1966) have elegantly summed this overreliance in the statement:

Almost everything we know about the attitudes [in the social sciences] is also suspect because the findings are saturated with the inherent risks of self-report information. One swallow does not make a summer; nor do two "strongly agrees", "one disagree", and an "I don’t know" make an attitude. (p.172).

These statements imply that present and future researchers need not automatically cast aside the techniques of self-report or questionnaires, but rather use these methods in conjunction with other methods. What will continue to impede these efforts will be the problem of integration of the findings of a cross-method study. Cattell (1979) and Glancy (1986) offer interesting procedures to account for these difficulties. Said otherwise, the findings of behavioral, anecdotal and self-report research generally produce different measurement units and will need to be integrated into generalized findings.

Some Concluding Reasons

Given all the concerns and relative immaturity of the field of outdoor adventure research, what can be concluded about this line of inquiry? First, it should be recognized that research in any field has an accumulative role in that the purpose of science is to develop explanatory theories and concepts. These theories and concepts use research questions and hypotheses to investigate relationships between variables. Upon testing these hypotheses, the findings are used to support, refute or redesign the original theories and concepts. This accumulative role of research is illustrated in Figure 1.

If research in outdoor adventure is to move beyond the earlier criticism of Shore (1977), i.e., too few analytical studies, the development, testing and modification of theories and concepts must play a more pivotal role. To date, there is an overemphasis on measurement and a corresponding deficiency in both conceptualization and direct observation. Given the substantial amount of research already done in outdoor pursuits, there can be little doubt that participation in these types of programs and activities can provide a variety of benefits for the individual and group. These potential benefits can be psychological, sociological, educational and physical and are listed in Table 9.

These benefits, however, are outcome benefits and while the raison d’etre of outdoor adventure programming, documenting these benefits often does little in explaining how and why they have occurred.

Moving beyond description into one of explanation will prove to be as difficult as it is necessary. This involves a more in-depth understanding of the related fields of psychology, sociology, and education. In addition, this movement will entail the excruciating task of formulating and testing theories which will be both useful and accurate. According to Slawski (1981), to be effective a theory must be relatively
Figure 1
THE ACCUMULATIVE ROLE OF RESEARCH

Purpose of science is the development of concepts, models, and theories

Theory is a systematic accounting of the relationships among a set of variables

Research questions state a situation needing inquiry, discussion and/or solution

Hypotheses are conjectural statements about the relationship between two or more variables

Findings support or refute models or theories and lead to new conceptualizations

Table 9
POTENTIAL BENEFITS OF OUTDOOR ADVENTURE RECREATION

<table>
<thead>
<tr>
<th>Psychological</th>
<th>Sociological</th>
<th>Educational</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Concept</td>
<td>Compassion</td>
<td>Outdoor Education</td>
<td>Fitness</td>
</tr>
<tr>
<td>Confidence</td>
<td>Group Cooperation</td>
<td>Nature Awareness</td>
<td>Skills</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Respect for Others</td>
<td>Conservation Ed.</td>
<td>Strength</td>
</tr>
<tr>
<td>Sensation-seeking</td>
<td>Communication</td>
<td>Problem-solving</td>
<td>Coordination</td>
</tr>
<tr>
<td>Actualization</td>
<td>Behavior Feedback</td>
<td>Value-Clarification</td>
<td>Catharsis</td>
</tr>
<tr>
<td>Well-being</td>
<td>Friendship</td>
<td>Outdoor Techniques</td>
<td>Exercise</td>
</tr>
<tr>
<td>Personal testing</td>
<td>Belonging</td>
<td>Improved academics</td>
<td>Balance</td>
</tr>
</tbody>
</table>
easy to apply, provide valuable information, enhance predictability of a phenomenon, and have explanatory power.

In outdoor adventure, what is needed is the development of a body of knowledge from which future research can be grounded. This entails moving away from the compilation of independent unrelated studies and toward an integration and building upon of past research work. Theory-based research can contribute to this continuity within the body of knowledge surrounding outdoor pursuits.

Furthermore, there are four distinct but complementary perspectives in outdoor pursuits research. First, there is the psychological perspective. While the most widely used viewpoint, this perspective subsumes the behavior of the individual as well as his/her attitudes, feelings, etc. Studies on leadership training and cognitive development would also fall into this category of research.

The second framework from which to conduct outdoor pursuits research is the sociological perspective. From this perspective, the researcher is concerned with what happens in a group context. Of particular interest may be the hedonistic tone of the group, the communication patterns or support structures that develop. Similar to the psychological, this perspective has obvious implications for research in outdoor pursuits.

The economic perspective is the third framework from which researchers can base their inquiries. This perspective includes the allocation of resources such as land areas, in addition to the most commonly thought of cost-benefit and income-generating studies. For example, recent articles by Schreyer and Knopf (1984) and Dustin and McGaughy (1982) have examined the concepts of succession and displacement (i.e., how outdoor adventure recreationalists get moved out or leave a particular area) and their implications for participation in outdoor pursuits.

The fourth perspective, interaction with the natural environment implies the generation of information which is focused on how outdoor pursuits use, impact and interact with the environment. One topic of current interest is the impact outdoor programs have on a natural area over a period of time.

While there may be other perspectives of outdoor adventure research which could be added, present and future researchers need to ensure that their particular work provides for continuity and contributes to the knowledge base. To date, there needs to be a greater relatedness between the various past and present studies being conducted. This current state of research affairs is symptomatic of research done primarily by graduate students rather than professional researchers. Other recommendations for enhancing the research effort in the field would include the following:

1. Analysis of the need for and demand of outdoor pursuits in contemporary society.
2. Studies of the various systems for the delivery of outdoor pursuit programs and activities.
3. Identification of the trends and emerging patterns in outdoor pursuits.
4. The development of explanatory and predictive models of outdoor pursuits participation and behavior.
5. The application of more studies using an interdisciplinary approach.

[For a similar discussion on recommendations for leisure research see Smith and Ng (1982)].

In summary, the purpose of this paper is to suggest ways which enhance the effectiveness of research in outdoor adventure. This is desirable not because it increases acceptance rates in refereed journals but rather because ultimately the participant and natural environment will benefit. Systematic and rigorous investigation can be used to help sharpen the focus of outdoor-based programs and strengthen the intuition of the program staff. This is an important consideration,
when one considers that this intuition coupled with observation and personal involvement ultimately provides the motivation to continue these types of activities and research. People and organizations offer outdoor adventure programs because they feel there is something intrinsically beneficial and productive that happens when humans and adventure meet. Better utilization of the research tools available can help support that process and avoid the dilemma posed by Reinhartz (1979) where research generates data instead of meaningful findings.

References


behavior. *Dissertation Abstracts International*, 37, 1473A.


