

***The Research and Literature on
Challenge Courses:
An Annotated Bibliography
2nd Edition***

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Cover photo: Eastern 4-H Environmental Center ropes course, Columbia, NC, by Aram Attarian

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PREFACE of *Bibliography*

This annotated bibliography is a joint project of North Carolina State University, Department of Parks, Recreation and Tourism Management and Alpine Towers International.

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The Department of Parks, Recreation & Tourism Management (PRT) specializes in the planning and management of parks, recreation and sport areas and facilities, tourism attractions and leisure activities in a range of environments for all ages and lifestyles.

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Alpine Towers International specializes in the design and installation of unique challenge courses, ropes courses climbing walls, and ground team initiatives

About the Author

Aram Attarian, Ph.D. is an Associate Professor, Department of PRT at North Carolina State University. His teaching and research interests focus on adventure recreation and outdoor leadership, the effects of visitors on climbing environments, and park and recreation site and facility management.

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The Research and Literature on Challenge Courses: An Annotated Bibliography

INTRODUCTION

Challenge courses¹ in the United States have been in use by outdoor, leisure and human service programs since the early 1960s. During 1962 two ropes courses were constructed, one at the newly established Colorado Outward Bound School and the other in Puerto Rico, where a ropes course was used to train Peace Corps volunteers. Challenge courses remained in the domain of Outward Bound and similar programs until 1971 when Project Adventure began to integrate the challenge course into public school physical education classes. This movement was the beginning of a trend that has led to the current practice of using the challenge course as an educational, developmental, and therapeutic medium to enhance both personal and professional growth.

Changes in design and construction techniques, materials, training and safety protocols have combined to increase the popularity and utility of challenge courses. Treatment centers, schools, corporations, hospitals, correctional facilities, camps, the military, fitness centers, and other leisure and human service organizations have incorporated challenge courses into their programs to heighten services to all segments of society.

Prior to the 1980s a limited amount of research and literature was available documenting the benefits of participation in challenge course programs and activities. During the 1980s researchers in the field of therapeutic recreation began to report the individual benefits one could derive from participation in challenge course experiences. Research focused on identifying or demonstrating the benefits of participating in challenge courses primarily by psychiatric patients and at risk, adjudicated, and emotionally disturbed youth. The research and literature during the 1990s became more diverse, with efforts directed towards team building and group development, the physiological responses to participation in high ropes course activities, accessibility, risk management, and a variety of professional topics important to challenge course providers.

For the purpose of this annotated bibliography, a challenge course is defined as a collection or series of events or obstacles suspended from trees, utility poles, and other structures; and/or activities that provide participants with unique problem solving opportunities for self-discovery, physical challenge, risk-taking, and group support. Synonymous terms include high ropes course, low ropes course, initiatives, group initiatives, group initiative activities, and team-building activities.

¹ For use in this bibliography the term challenge course refers to high and low ropes courses and group initiative activities.

Purpose of this Document

The 2nd edition of this annotated bibliography has been written to provide educators, challenge course professionals, and other interested parties with an opportunity to increase their knowledge and understanding of the challenge course experience. The purpose of this document is to review the existing research and related literature on challenge courses. The information contained herein may be used to facilitate literature searches, support requests for funding and grant proposals, and provide background information to assist in the development of challenge course programs.

Need for this Document

The need for this document was identified because of the growing number of requests from challenge course professionals, administrators, teachers, and researchers for information and the lack of easily accessible knowledge in this subject area.

Scope of the Study

This document contains 174 references on challenge courses. Literature for this project came from a variety of peer and non-peer reviewed sources. These sources included journals, books, proceedings, theses and dissertations, unpublished papers and reports, popular magazines, websites: adventure research cache (webdb.iu.edu/Hperweb/iole/index.cfm), wilderdom.com (www.wilderdom.com) and bibliographic databases, including ERIC, WebSPIRS, and EBSCO Host. The annotations are intended to provide a brief overview of the entry's content and do not reflect the author's opinions or the judgment of the quality of the cited work.

Criteria for Selection

- Criteria for the selection of the literature contained in this publication was that it:
- (1) document any empirical research which utilizes challenge course activities as an intervention;
 - (2) provide challenge course professionals with practical information that can be used to enhance safety and program delivery;
 - (3) discuss or present the benefits associated with participation in challenge course activities and programs.
 - (4) was published from 1985 to the present.

How to use this Document

The bibliography is divided into 7 sections including: Individual Benefits, Teambuilding, Professional Interest & Issues, Risk Management, Accessible and Universal Challenge Courses, Physiology, and Evaluation. While some references may fit into multiple sections, one section was selected for each reference based on its relevancy. Searching through the author index can also access items. Although not comprehensive, the sources cited in this document represent a significant portion of the topics addressed by the challenge course literature.

Future Updates

The number, scope, and diversity of documents focusing on challenge courses will likely increase in the near future. The hope is to continue to add citations to this

bibliography to improve its value and applicability to a wide range of users. Therefore, suggestions for additional citations that will make a positive contribution to this bibliography are welcomed.

INDIVIDUAL BENEFITS

Challenge courses provide benefits for individuals with varying backgrounds. The following section includes studies of individuals with backgrounds ranging from at-risk youth to business professionals; from inner-city minorities to individuals hospitalized with major depression. Challenge courses allow individuals to improve their confidence in areas of problem solving, self-efficacy, self-concept, trust, teamwork, and communication. This section also includes a significant number of studies that explore the therapeutic benefits of participation in challenge course experiences.

1. Aghazarian, T. L., MS (1996). Challenge course as an intervention tool to adolescent self-esteem, *Dissertation Abstracts International*, 35(03), 908. (UMI NO. AAI1382900).

ANNOTATION: This thesis addressed the question of whether a one-day challenge course can be used as a tool to intervene adolescent self-esteem. The question was tested by having 17 male and female high school students voluntarily participate on the course as the experimental group, and another 23 not participate as the control group. Self-esteem was measured three times (pre, post, and follow-up) by the Self-Perception Profile for Adolescents (Harter, 1988c) and personal written comments. A two-way t-test comparing gain scores showed a significant increase in global self-worth for experimental subjects. In addition, a qualitative analysis of written comments demonstrated that the thesis hypothesis was supported. Conclusions noted that the use of the challenge course was successful in its aim to increase adolescent self-esteem. The program not only allowed the opportunity to take a risk of doing something new and challenging, but also provided individuals with supportive feedback from their peers and leaders.

2. Anderson, H. C. (1995). Identity development: the comparative effects of two Outward Bound-type programs and a control condition on college students. *Dissertation Abstracts International*, 57(02A), 573. (UMI No. AAI9616271).

ANNOTATION: A comparative outcome study was conducted to test the effects of two Outward-Bound-type program (OBTP) interventions and a control condition on the ego identity development of 360 college students. The two OBTPs utilized were a two-week expedition and a seven-week class that met twice weekly. The first OBTP, LaVida, included: ropes course activities, rock climbing, backpacking, and a 3-day solo experience. The second OBTP, Discovery, included: ropes course activities and a weekend outing. The findings lend partial support to the general hypothesis that the identity development of college students can be positively impacted by an OBTP. Two of the four-ego identity statuses theorized by Marcia (1966) were examined along the interpersonal dimension. Interpersonal achievement and foreclosure were measured at pre-, post-, and a three month follow-up. It had been hypothesized that from pre- to post-intervention, the two OBTPs would effect significantly greater increases in achievement

and greater decreases in foreclosure than the Wait-list/Control condition. It was also hypothesized that for both OBTPs, these gains would be maintained at follow-up. A significant interaction for the intervention and time factors was found from pre- to post-intervention; however, no evidence of this significant interaction was found when assessed at a three-month follow-up. This puzzling finding led to the consideration of several possible alternative hypotheses. Further testing of the significant interaction finding from pre- to post-testing revealed that significant differences occurred in the expected direction for foreclosure. The Discovery OBTP had the expected impact of significantly decreasing the students' degree of foreclosure (commitment without exploration) in comparison to those in the Wait-list/Control group who were not significantly changed. The LaVida OBTP also decreased in foreclosure, but the amount of change was not statistically significant. This decrease in foreclosure as a result of participation in an OBTP is an important and exciting finding given that foreclosure has an intransigent quality to it. An intervention such as an OBTP which facilitates a decrease in foreclosure can be seen as a helpful preventative experience in which students explore their identity and move further along in their identity development.

3. Autry, C. E. (2001). Adventure therapy with girls at risk: Responses to outdoor experiential activities. *Therapeutic Recreation Journal*, 35(4), 289-306.

ANNOTATION: The purpose of this interpretive study was to explore the feelings, attitudes, and perceptions of girls –at –risk following their participation in outdoor experiential activities in the context of adventure therapy. The experiential activities included a 4-day backpacking trips and high and low ropes course initiatives. The girls resided in a same gender outdoor-based psychiatric rehabilitation facility. In depth interviews were conducted and the qualitative data were analyzed through constant comparison. Nine girls between the ages of 13 and 18 participated in the study. Four major themes encompassing perceptions of trust, empowerment, teamwork, and the recognition of personal value were constructed from the data. Practical and theoretical implications for therapeutic recreation include concepts surrounding issues of empowerment and constructivism.

4. Bartley, S. J. Kupritz, V. W. & Powers, M. (2003, Spring). Effectiveness of a low ropes course experience to promote learning in an HRD graduate course. *Workforce Education Forum* 30(1) pp. 22-37.

ANNOTATION: Questionnaires completed by 54 human resource development graduate students who participated in a low-ropes activity indicated that it enhanced learning of course concepts. Students thought that effective facilitation of the activity contributed to their learning. Contains 39 references.

5. Blanchard, C. W. (1993). Effects of ropes course therapy on interpersonal behavior and self-esteem of adolescent psychiatric inpatients. *Dissertation Abstracts International*, 55(02B), 584. (UMI No. AAI9417335).

ANNOTATION: In recent years adventure-based counseling (ABC), an experiential intervention inspired by Outward Bound, has become increasingly visible as a therapeutic modality. Many mental health institutions have adopted the ropes course, a constructed assembly of physical obstacles and facilitated problem-solving challenges, as an innovative form of adjunctive group therapy. Claims made about the benefits of ABC and ropes participation, particularly for troubled adolescents, have not been consistently supported by research. In this study two groups of adolescent psychiatric hospital inpatients were tested to determine the effects of ropes course therapy on their self-esteem and interpersonal behavior. The experimental group (n = 20) participated in ropes course activities for three weeks (27 hours); a comparison group (n = 20) did not. Psychometric tests used were the Coopersmith Self-Esteem Inventory, the California Psychological Inventory, and the Child Behavior Checklist Teacher Report Form. Results supported all three-research hypotheses. Significant results were obtained for the ropes group on both self-esteem and interpersonal behavior, as measured by relative gain scores, demonstrating significant improvement on both variables following ropes therapy. The TRF was considered an invalid instrument for this study. Findings suggest that participation in ropes course treatment is an influential factor in raising adolescent patient's self-esteem and improving their interpersonal behavior. Findings can reasonably be generalized to emotionally disturbed adolescents who are being treated in short-term psychiatric inpatient settings, but not to patients receiving long-term residential treatment, outpatient treatment, or to juvenile delinquents. Recommendations for future research focus on three areas: (a) targeting ABC interventions to specific clients and situations; (b) seeking greater understanding of the dynamics of ABC interventions; and (c) determining factors that lead to long-term transfer of learning.

6. Boudette, R. D. (1989). The therapeutic effects of Outward Bound with juvenile offenders. *Dissertation Abstracts International*, 50(11B), 5306. (UMI No. AAI8926357).

ANNOTATION: The purpose of this study was to investigate the effects of an Outward Bound course as a supplemental component a traditional probation program. Further, an attempt was made to examine two premises put forth in a theory explaining the Outward Bound process: (a) participants must be motivationally ready in order to experience the therapeutic benefits of an Outward Bound course; and (b) participation in Outward Bound leads to increase self-esteem, self-awareness, and sense of belonging. The subjects of this study were 69 juvenile offenders who were referred to the Project Way Outward Bound program by their court counselors or probation officers. Subjects were randomly assigned to experimental and control groups. All subjects participated in a 1-day ropes course. Following the ropes course, the subjects assigned to the experimental group attended a 24-day Outward Bound program and subjects assigned to the control group proceeded with their probation plans as designated by their court counselor. To evaluate the impact of the 24-day Outward Bound program, the Jesness Inventory and the Global Self-Esteem Scale were administered to both groups of subjects at three intervals. Both groups of subjects completed self-report measures prior to participation in the ropes course and then 1 and 4 months after this date. Recidivism data were collected at the follow-up date. Self-report data were analyzed with a two-way repeated measures analysis of variance. Results showed significant differences between the experimental

and control group only in the area of self-esteem. Both groups improved significantly on 9 of the 10 Jesness scales over time. A trend analysis indicated that the changes for the experimental group were consistently more pronounced than those for the control group. This finding was true for 9 of the 11 scales. Although this finding is the result of an exploratory trend analysis, it is strongly suggestive and supports reason for further investigation in this area. Behavioral data were analyzed with a chi-square test. There were five categories of recidivism: no allegations, runaways, probation violations, robbery charge or assault charge. The chi-square indicated no significant differences between the experimental and control group. In order to study the impact of motivational readiness on Outward Bound participants, the Student Attitude Questionnaire, a self-report scale, the Instructor Rating Scale, a behavioral measure, and the Achievement Motivation scale, from the Personality Research Form, were administered at the pretest. Scores from these measures were combined and subjects were divided into high and low motivational readiness groups. Changes from pretest to posttest and follow-up were analyzed with a two-way analysis of variance. No significant differences were observed between high and low motivation groups. Implications of the findings were discussed and suggestions for future research were offered.

7. Boyle, S. E. (1985). The effects of a ropes course experience on locus of control and self-esteem. *Dissertation Abstracts International*, 46(12B), 4391. (UMI No. AA18603527).

ANNOTATION: Scope of Study. This study investigated the effects of a ropes course experience on the locus of control and self-esteem of participants. Previous studies reported changes in these variables following participation in Outward Bound Courses and it was hypothesized that similar changes would be found to derive from this abbreviated outdoor adventure experience. In addition, a preliminary investigation of the effects of Ropes Course participation on interpersonal behavior was conducted. Forty-two summer school students volunteered to serve as subjects in this study and were randomly assigned to treatment or control groups. Participants completed Levenson's locus of control scales, Rosenberg's self-esteem scale and the FIRO-B two days before the experimental group received the treatment, two days after the treatment and two weeks later. After all data were collected students assigned to the control group participated in the Ropes Course. The data were analyzed using univariate analysis of variance. No significant interactions were found between treatment and time and time was not significant for any of the dependent variables. The main effect treatment was significant for the Chance locus of control variable. Closer examination of this finding indicated subjects in the treatment group responded differently from those in the control group on this variable throughout the experiment, possibly due to a Hawthorne effect. Thus, the results of the study did not support the hypotheses that participation in a Ropes Course experience would have an effect on the locus of control and self-esteem of participants. It was recommended that future researchers match treatment and control groups on the variables of interest prior to administering the treatment and consider administering an alternate rather than a delayed treatment to the control group.

8. Breshears, S. T. (1995). The perceptions of individual family members of the impact of a ropes course experience on their family dynamics. *Dissertation Abstracts International*, 34(03), 1055. (UMI No. AAI1377717).

ANNOTATION: The purpose of this study was to determine which issues of family dynamics were impacted by a family's participation in a ropes course. Family members who went through a ropes course were given a questionnaire to determine which issues of family dynamics they perceived as being impacted. This study built upon the research done by Bishop (1991/1992). This study was based on the theoretical frameworks of family dynamics in family systems and experiential education. Subjects were families going through ropes courses drawn from multiple sources. Immediately after the family members participated in the ropes course, they were asked to fill out the questionnaire that was designed specifically for this study. The questionnaire was based on the results of Bishop's research (1991/1992). Chronbach's alpha reliability, and a Spearman rank order correlation were used to analyze the data.

9. Burney, J. P. (1992). Learning the ropes of problem solving and self-control: A study of an experiential ropes program for special education students. In: G. M. Hanna (Ed.), *Celebrating Our Tradition, Charting Our Future: Proceedings of the International Conference of the Association for Experiential Education* (pp. 268-269). Boulder, CO: Association for Experiential Education.

ANNOTATION: This study utilized a pre-test post-test, quasi-experimental design to examine participant's level of self-efficacy, self-concept, and problem solving abilities. Eighteen male and two female subjects were exposed to a ropes course program. Analysis of variance and a secondary analysis using Pearson Correlation Coefficient were used to test the hypothesis that the level of self-efficacy, self-concept, and problem solving would be increased subsequent to participation in the ropes program. Differences between experimental and control group were determined by utilizing a T-test. Similar differences were observed between the pre-test and post-test for the experimental group with increases in self-efficacy and problem solving confidence. When pre-test changes were found for the control group, results showed a decrease in self-efficacy.

10. Breheny, M. S. (2000). Investigating The Effects Of A Low Ropes Course Experience Vs. Classroom Instruction On The Problem-Solving Appraisal of College Freshmen. *Dissertation Abstracts International*, 61(05A), 1738. (UMI NO. AAI9976182).

ANNOTATION: The main purpose of this study was to compare a low ropes course experience vs. classroom training on the problem solving self-appraisal of college freshmen. The study employed a true experimental design and the sample consisted of 39 volunteers from the Florida Institute of Technology's Fall 1998, freshman class. Problem solving appraisal was assessed on 3 occasions using the Problem Solving Inventory (PSI) (Heppner, 1988). Scores on the Total PSI as well as each of its 3 component scales (Approach-Avoidance Style, Problem-Solving Confidence, and Personal-Control) were utilized. The experiment was carried out on a Saturday morning during the Fall 1998

semester. Classroom instructors and ropes facilitators all received training prior to their involvement in the study. Subjects were pre-tested during the week before participation, and were then randomly assigned to either "Treatment I" or "Treatment II" the morning of the experiment. Treatment I subjects received 4 hours of classroom training that emphasized a process approach to problem solving; Treatment II subjects participated in a 4-hour low ropes course experience aimed at problem solving. Subjects were post-tested between 2 and 6 days following treatment and once again 10 weeks later. Data analysis followed 2 distinct paths, ANCOVA and t test analysis. ANCOVA was used to study the difference between the ropes group and the classroom taught group. Results showed no significant difference between Treatment I and Treatment II on the posttest for the Total PSI and each of its 3 scales. Similarly, there was no difference between Treatment I and Treatment II on a retention test administered 10 weeks after the posttest. ANCOVA analysis also revealed no interaction between treatment and gender. As a separate analysis, t tests were employed to investigate the change in ropes participants' scores between successive testing. A comparison of pretest and posttest scores showed significant improvement on the Total PSI, Problem-Solving Confidence, and Personal-Control scales following a ropes course experience. These positive changes were maintained 10 weeks later, with no significant difference found between the posttest and the retention test for the Total PSI or any of the scale measures. The results from this subordinate part of the study must be interpreted cautiously because they arise from weak experimental design and poor statistical technique. This part of the analysis was included because the field of adventure education suffers from a lack of research, and results, even weak ones, are valuable in informing future studies.

11. Chakravorty, D., Trunnell, E. P. & Ellis, G. D. (1995). Ropes course participation and post-activity processing on transient depressed mood of hospitalized adult psychiatric patients. *Therapeutic Recreation Journal*, 25(2), 104-113.

ANNOTATION: The purpose of this study was to examine the effects of participation in ropes course activity sessions on transient depressed mood of hospitalized adult patients diagnosed with major depression. Lubin's Depressed Adjective Checklist (DACL) was used to measure depressed mood. A two-factor repeated measures design was used, with DACL measures taken from each of the 25 patients on six occasions: immediately before participation, immediately after participation, immediately after post activity processing, and on the day after the ropes course session. DACL measures were taken at times corresponding to the intervals used on the day of the activity. An interaction between participation and the time of observation was hypothesized; DACL scores were expected to decrease as participants progressed through the activity phases of the ropes course session, while DACL scores for the day after measures were not expected to vary significantly from one another. Results supported this hypothesis.

12. Combs, S. E. (2001). The evaluation of adventure-based counseling with at risk youth, *Dissertation Abstracts International*, 62(03B), 1569. (UMI NO. AAI3008604).

ANNOTATION: The purpose of this study was to evaluate the effectiveness of the Adventure Based Counseling (ABC) program developed by Project Adventure with at

risk youth. In addition, this study attempted to examine the process of change within an adventure therapy program by employing an ABAB single case design, and utilizing both quantitative and qualitative analyses. For the 8 week intervention, participants completed the Children's Nowicki-Strickland Internal External Locus of Control Scale (CNSIE), the Coopersmith Self-Esteem Inventory (SEI), and Children's Self-Efficacy for Peer Interaction Scale (CSPI) 8 times; group leaders completed the Social Skills Rating System (SSRS) 7 times for each participant; and the parents/guardians and group leaders completed the Child Behavior Checklist (CBC) and the Teacher Report Form (TRF), respectively, 3 times for each participant. Participants, group leaders, and parents/guardians also completed semi-structured interviews at the end of the intervention. The quantitative results demonstrated that there were significant differences pre to post-test for Group 1 (12 to 14 year old boys) on the CNSIE and TRF Behavior Problems scales. For Group 2 (9 to 10 year old boys) there were significant differences pre to post-test on the CNSIE, CSPI, SSRS, and TRF Adaptive Functioning scales. For the repeated measures ANOVA's the results revealed that the group leaders rated participants as demonstrating a significant decrease in behavior problems at the end of treatment when compared to the middle of treatment. For the ABAB single case analyses, there were three participants who demonstrated changes in the hypothesized directions: one participant demonstrated changes in the hypothesized directions on the CNSIE, and two participants demonstrated changes in the hypothesized directions on the SSRS. For the qualitative interviews, there was significant evidence that the ABC intervention, specifically the ropes course activities, had a positive effect on participant's self-esteem and self-efficacy. The results demonstrate that ABC interventions should continue to focus on the enhancement of self-esteem and self-efficacy for at risk populations, and regularly include ropes course activities or similar "peak experiences". Also, since it appears that longer interventions are more beneficial than shorter ones, ABC interventions should consider length of treatment when designing programs.

13. Constantine, M. (1993). The effects of a ropes course experience on perceived self-efficacy: A study designed to examine the effects of an adventure program. *The Pennsylvania Journal of Health, Physical Education, Recreation and Dance*, 52(2). 10.

ANNOTATION: This article provides an overview of an adventure based course within a Pennsylvania high school and presents the results of a research study designed to investigate the effects of a ropes course experience on the perceived self-efficacy of the students in this program. Results suggested that a ropes course experience increased both specific and general perceived self-efficacy.

14. Corsica, J. Y. (1987). Project Change: An ethnography of a social action project. *Dissertation Abstracts International*, 48(5A), 1244. (UMI NO. AAI8717067).

ANNOTATION: This project proposed, designed, developed and implemented a one-week residential summer camp experience for inner-city minority youth at high risk for school failure, drug abuse, adolescent pregnancy or adolescent parenting and juvenile justice system involvement. The camp experience, modeled on the adult NLP-High Ropes course camp developed by Dr. Scout Lee (Gunn) of Excellence Unlimited, Inc.,

involved the concurrent use of the high ropes course as a recreation and educational challenge and NLP communication technology and methods. As with the adult camp model, the youth camp design brings two therapeutic modalities together in an effort to improve participants' self-concept and the effectiveness of their strategies and goal setting behaviors relative to their desired outcomes in their camp activities and their lives. An evaluation of the impact of the camp experience on the campers' self-concept and locus of control orientation included quantitative analysis of camper pre-and post-test score results on the Piers-Harris Children's Self-Concept Scale and the Nowicki-Strickland Locus of Control Scale (LOC) and qualitative analysis of camper interview and observational data collected (and videotaped) during the camp week. Results of the statistical analysis of test score data indicate non-significant increases in the group's mean scores on all Piers-Harris scale variables (raw score, percentile, stanine and factor scores) and non-significant decreases in internal locus of control belief as measured by the Nowicki-Strickland scale. The results of the qualitative analysis are consistent with Piers-Harris scale post-camp score directions, but inconsistent with the Nowicki-Strickland post-camp score directions. A more focused, controlled, cross-cultural study approach to the LOC construct in terms of the positive value assigned to internality, based on the results of project qualitative data analysis, is proposed. The use of language in communicating the ordering of social relationships between campers and staff is analyzed as both groups are involved in Program activities. The study also discusses the methodological difficulties in designing evaluation research of social action programs.

15. Crumpton, R. (1992). Reversal theory in a physical activity setting. *Dissertation Abstracts International*, 55(05A), 1218. (UMI No. AAI9424353).

ANNOTATION: The purpose of this study was to examine the state characteristics of telic and paratelic dominant individuals performing a physical activity according to a distinction proposed by reversal theory. A secondary purpose was to assess the relationships between scores on the Telic Dominance Scale (TDS) and the Sensation Seeking Scale (SSS) instruments. The subjects were undergraduate college students enrolled in kinesiology and psychology courses at a Division II NCAA college. Subjects were divided into two categories--telic dominant individuals and paratelic dominant individuals based on scores obtained from the serious-mindedness subscale of the TDS. The physical activity used to investigate reversal theory was a rock climbing task and adventure ropes course. Based upon the basic assumptions and propositions of reversal theory, as well as previous research on reversal theory, six hypotheses were generated and tested in a physical activity setting. Using a 2 x 3 repeated measures ANOVA the null hypothesis for these six hypotheses was retained, thus reversal theory was not statistically supported in this physical activity setting. This could perhaps be attributed to the nature of the physical activity, which was arousal-inducing and from the subscale that was used to select the subjects from the initial sampling pool. A seventh hypothesis was tested which predicted a significant negative correlation between the TDS and SSS scores of the paratelic group. The null hypothesis was rejected when analyzed using Pearson product moment correlation coefficient, thus suggesting that the paratelic dominant 'arousal-seeker' occupies a similar factor space as the 'arousal-seeker' described by a characteristically dominant sensation seeker. Also, significance was obtained for the

interview data using the Fisher Exact Probability Test, as well as several self-reported reversals of dominance during the physical activities. Other findings that were revealed in the study consisted of: (a) motivational state, rather than state dominance, was associated with the different activities, and (b) perceptions of threat did induce a telic state when examining the effect of a threatening context upon motivation. Based on these findings, it does appear useful to recognize the differences in individual mode dominance and to continue with more in-depth field research in order to fully understand the potentials reversal theory has to offer the area of psychology.

16. Daheim, T. J. (1998). Effects of ropes course therapy on individual perceptions of the classroom environment. *Dissertation Abstracts International*, 60(02B), 854. (UMI NO. AAI9918790).

ANNOTATION: Scope and method of study. In this study, three groups of at-risk junior high school students were tested to determine if the treatment of a ropes course program could affect individual perceptions of classroom environment. Although not randomly selected, the three equivalent groups formed either a control group made up of students who did not participate in a ropes course program (n = 43), or two treatment groups: students who participated in the ropes course program with teacher participation (n = 56), and students who participated in the ropes course without teacher participation (n = 54). The dependent variable was scores of individual perceptions of classroom environment as measured by the Classroom Environment Scale (Trickett & Moos, 1987). Outcome was determined by taking two measures of the dependent variable, one week prior to and four weeks following the completion of the ropes course, and comparing the mean improvement of each group over that time. To test the hypotheses, a 2 x 3 Split Plot Factorial quasi-experimental design was employed. The results of this study revealed that post-test scores of the Relationship Dimensions of the Classroom Environment Scale increased significantly for those students who participated in the ropes course program. Results also indicated that there was no significant difference between the two treatment groups. Therefore, results provide tentative support for the hypothesis that a ropes course program positively affects the individual perceptions of the classroom environment, particularly regarding the Relationship Dimensions.

17. Davies, K. & Cohen, M. J. (1995). Reconnecting with nature: Educational self-esteem sensory activities for reducing drug use and irresponsible relationships in students at risk. Excerpted from *Reconnecting with Nature: Finding Wellness Through Restoring Your Bond With the Earth* (by Michael J. Cohen, Eugene, OR: Ecopress).

ANNOTATION: A model of an integrated ecologically-based counseling and recovery program is explored as a means of incorporating educational and psychological nature-connecting methods and materials with traditional recovery activities for people at risk and as a preventative. The first part of the program introduces high-risk high school students, most of who have low self-esteem, to elements of nature. The second part of the program focuses on reducing chemical use and irresponsible relationships in at risk students. Phase 1 of this part involved 3 weeks of play and creativity in natural settings. Phase 2 involves specially designed nature reconnecting activities to reduce stress and

attune participants to nature. Phase 3 consists of a 5-day "ropes course" where students practice teamwork, use problem solving skills, and work on fear and stress reduction skills. The goal is to further reduce stress, and help them experience power, joy, and trust. Results of the project are overwhelmingly positive. Significantly increased scores on the Barksdale Self-Esteem Index are recorded. The results suggest that the project, used in conjunction with daily stress situations instead of artificially programmed stress activities, can serve as an ecologically sound citizenship education preventative for chemical, food, and social and environmental abuse.

18. Davis, D., Ray, J. & Sayles, C. (1995). Ropes course training for youth in a rural setting: 'At first I thought it was going to be boring....' *Child & Adolescent Social Work Journal*, 12(6), 445-464.

ANNOTATION: The rope challenge course is an outdoor activity used as a means of intervention for youths in high-risk environments characterized by high unemployment, alcohol problems and low income. An evaluation of one such course in a rural setting found that children who underwent the course, which involves teamwork and problem solving, reported that they gained positive attitudes after the course. Their positive response was evident in their scores on the Modified American Drug and Alcohol Survey for Youth test.

19. Dickens, J. C. (1999). Behavioral indicators of conduct disorder in a ropes course initiative, *Dissertation Abstracts International*, 60(09B), 4883. (UMI NO. AAI9946536).

ANNOTATION: The differences between a group of children meeting the diagnostic criterion of conduct disorder and a normal or undiagnosed population were compared on three challenge course initiatives using seven behavioral indicators characteristic of children with the diagnosis of conduct disorder. Two trained individuals who observed participants during their completion of the problem-solving initiative activities rated these behaviors. The results showed that the individuals within the conduct-disordered group displayed the seven behaviors at a significantly higher rate than did the individuals within the undiagnosed group. In addition, this group as a whole, when qualitatively analyzed, showed each of the seven behaviors at a higher rate as well. The findings support the hypothesis that the seven behaviors are adequate indicators for differentiating between the two populations when facilitating a challenge course initiative, and are likely to be observed at a higher rate within a group of conduct disordered children. While previous studies have not identified these specific seven behaviors as representative of the conduct disorder diagnosis in themselves, these results are consistent with previous findings illustrating the behavioral differences between these two populations of children. Weaknesses within the study and suggestions for further investigation are noted.

20. Eagle, H. A. (1999). Long-term differences between participants and non-participants in "Beyond The Limits" adventure education program. *Dissertation Abstracts International*, 60(12A), 4363. (UMI No. AAI9957112).

ANNOTATION: The purpose of this study was to identify whether there are differences in outcome variables associated with participation in an adventure education program, Beyond the Limits. This ex post facto study compared two cohorts of students that participated in a school district's adventure education program as middle school students, two and three years after they had participated, with two matched groups that did not participate. This study addresses a gap in the literature by examining long-term differences of an adventure education program (Beyond the Limits) for participants and non-participants in terms of grade point average, attendance, and behavior. Analyses were done on students. Judgments of self-concept, life effectiveness, and the Beyond the limits program for those who participated. Marsh's SDQ-II Self-Description Questionnaire and the Life Effectiveness Questionnaire (LEQ-H) were administered in order to gather data for the self-concept and life effectiveness outcomes. An ex post facto programmatic survey related to Beyond the Limits participants' perceptions of the benefits of the program was administered. Analysis of school record data, grade point average, attendance and behavior revealed no statistically significant differences. Out of 60 analyses done on Marsh's SDQ-II and the LEQ-H, only five were found to be statistically significant; four in the honesty-trustworthiness subscale area for the control group on Marsh's SDQ-II and one in the overall LEQ-H score for the experimental group. Those statistically significant findings could have happened by chance. The summary of the ex post facto programmatic survey made it clear that the students who had participated in the Beyond the Limits program two and three years ago valued the experience and had learned lessons that were still applicable to their lives today.

Students liked the Challenge Ropes Course high initiative elements, and the fact that the environment of the program (the process) was one of teamwork, problem-solving, meeting new friends, and not pressuring students to do what they didn't want to. According to student responses, the lessons learned at Beyond the Limits centered on teamwork, positive attitude and goal-setting. Responses about lessons learned that were felt to be directly applicable to students' lives today dealt with respect, risk-taking, teamwork, and positive attitude.

21. Eagle, H. A., Gordon, J. & Lewis, L. (2000). The effects of a public school system's one day adventure experience. In: *Coalition for Education in the Outdoors Fifth Biennial Research Symposium Proceedings* (Bradford Woods, IN, January 14-16, 2000).

ANNOTATION: Beyond the Limits, a program of the Wicomico County school system (Maryland), conducts 1-day adventure experiences that use a challenge ropes course and classroom experiential activities to develop students' intrapersonal and interpersonal skills. Before the experience, all participants agree to the "full value commitment," which is a social contract that helps the group build a safe place characterized by respect and mutual support. After the experience, debriefing in a group-centered format encourages reflection on the experience. The 24-item Life Effectiveness Questionnaire (LEQ-H) was completed by 100 students, aged 10-18, before and 30 days after the experience. This was a first-time experience for 75 percent of subjects, while the remainder had participated in the adventure program an average of 2.4 times. Thirty days after the experience, LEQ-H scores showed improvement overall and for three subscales: time management, emotional control, and task leadership. Students with prior participation in the experience had

higher baseline scores, overall and for all subscales, than did first-time participants. (Contains 14 references.)

22. Everett, C. L. (1998). The influence of sensation seeking trait, sensation seeking state, and anxiety state on the evaluation of an outdoor-based low ropes challenge course training program, *Dissertation Abstracts International*, 59(09A), 3643. (UMI NO. AAI9907690).

ANNOTATION: Outdoor-based low ropes challenge courses have been used in corporate, educational, and other settings as personnel training interventions. Most low ropes training does not provide for individual differences with respect to personality characteristics and attributes. In fact, the relationship between individual personality traits and low ropes training has not been explored empirically with any consistency. Since low ropes training differs in many respects from classroom training, certain personality characteristics/traits may be sensitive to this physically oriented training. One powerful personality trait that would appear to be differentially affected by low ropes training is sensation seeking. This study examined the impact of sensation seeking trait and its resultant sensation seeking and anxiety state on participants' evaluation of an outdoor-based low ropes challenge course. Sensation seeking (Zuckerman, 1979, 1983, 1988) is associated with the need or preference for novel, complex, and ambiguous stimuli, as well as stimuli that elicit strong emotional reactions. Related variables in the study include the more immediate sensation seeking state (feelings of excitement and anticipation when faced with a novel situation) and anxiety state (feelings of fear and apprehension in the same setting). High sensation seekers are more receptive to novel stimuli and would be expected to be in a sensation seeking state prior to training. They would be expected to rate the training more positively. Low sensation seekers are less comfortable with novel stimuli and would be expected to be in an anxiety state prior to the training. They would be expected to rate the training less positively. One hundred and twenty participants were given the Sensation Seeking Scale, the Sensation Seeking and Anxiety State scale and a pre-evaluation rating prior to the training. After training, participants completed a post-evaluation. Multiple regression analyses indicated sensation seeking state and anxiety state were the most valuable predictors of pre-evaluation and post-evaluation scores. The sensation-seeking trait was not predictive of pre- or post-training evaluations. However, sensation-seeking trait did correlate negatively with anxiety state for low sensation seekers only.

23. Faubel, G. (1998). An efficacy assessment of a school-based intervention program for emotionally handicapped students. *Dissertation Abstracts International*, 58(11A), 4183. (UNI No: AAI9815257).

ANNOTATION: This study evaluated a therapeutic adventure program with emotionally handicapped adolescents at a center school in Dade County, Florida. The 18-week intervention involved the implementation of a low and high element ropes course by trained staff at the center. The purpose of this intervention was to improve social and adaptive skills in children with emotional handicaps. The participants were 68 eighth grade at the center school. The children had been placed in special classes depending on

their needs, according to Dade County School criteria. Three main groups were evaluated: Emotionally Handicapped (EH), Self Contained (SC), and Severely Emotionally Disturbed (SED). Outcome measures consisted of pre and post ratings for control and experimental groups on 3 scales of the BASC-TRS (Depression, Sense of Inadequacy, and Self Esteem) and 3 scales of the BASC-SRP (Depression, Social Skills, and Leadership) utilizing clinical norms, in addition to school attendance records. While school attendance records did not exhibit a significant change, results on the BASC scales did. Given the nature of the participant population, their classification, and the wide spectrum of DSM-IV diagnoses, individual analyses were conducted in order to fully analyze the data and its implications for each participant and their respective classification. Consistently in both experimental and control groups, approximately 30 percent of their total scores varied significantly. While the variance in the experimental group was positive in terms of improved functioning, the variance in the control group was negative in terms of deterioration of functioning. The experimental group achieved its greatest gains in the areas of Self-Esteem, Leadership, and Social Skills, and a reduction in Depression based on teacher rating. For the control group, a gain in Social Skills and a reduction in self-esteem were observed. Experimental group participants in the SED classification demonstrated maximal losses, indicating minimized deterioration rate in experimental group participants. SC classification participants in both groups demonstrated change resistance. Given the conduct-disordered features of this classification, it was hypothesized that these children require a stronger immersion into the program in order to generalize change. The most significant clinical improvement was demonstrated within the EH classification. While the deterioration of functioning in the control group was similar to that of the control SED classification, the improvement in the EH experimental was 3 times higher than that of the control counterpart. This study supports the effectiveness of the Therapeutic Adventure Program at Ruth Owens Kruse Educational Center, in Dade County, Florida in improving leadership and social skills and minimizing depression among eligible participants. Maximal results were evident in the EH classification. For generalizability purposes and to maximize results, teaching staff participants, involvement, and training is recommended. Future research might include longitudinal studies in order to assess generalized long-term gains. A cross-sequential design is recommended for long-term evaluation in order to identify programmatic areas for targeted improvement.

24. Faulkner, S. S. (2001). Ropes course as an intervention: the impact on family cohesion and self-esteem for adolescents in therapeutic foster care and their foster families, *Dissertation Abstracts International*, 62(07A), 2570. (UMI NO. AAI3019517).

ANNOTATION: Adolescence is a difficult time, developmentally, for normal children. It is even more difficult for children who have suffered abuse and neglect and then been placed in a foster home. Adolescents in foster homes have difficulty bonding with others, suffer from identity and self-esteem issues over and beyond those suffered by teenagers who have not experienced child maltreatment. The purpose of this study was to evaluate the impact of a Ropes Course on therapeutic foster families with adolescent foster children before and after participating in a low-elements ropes course. The study examined the effects of the Ropes intervention on self-esteem and cohesion among

family members and compared these results to therapeutic foster families who did not participate in the Ropes Course. This study was a quasi-experimental design utilizing pre- and post-tests. The unit of analysis ($n = 56$) was the family and family members were administered several scales pre and post. These scales included the family cohesion subscale from the Self-Report Family Instrument, the Kansas Family Life Satisfaction Scale, the Self-Esteem Rating Scale (adults), and the Rosenberg Self-Esteem Scale (adolescents). When an Analysis of Covariance was conducted (controlling for income and ethnicity) all results were significant. For the Self-Report Family Instrument (SRFI) the results were $F(1,26) = 5.425, p = 0.024$. The Kansas Family Life Satisfaction Scale (KFLS) results were $F(1,26) = 19.68, p = 0.000$. The Self-Esteem Rating Scale (SERS) also showed results that were significant $F(1,26) = 14.15, p = 0.000$. Limitations to this study include lack of a random selection of subjects and no random assignment to the comparison or treatment group (group members self-selected to participate). However, the initial results are significant enough to warrant replicating the study with a larger sample size.

25. Finale, B. (1996, June). Miami PD reaches out to gang members with GRASP. (Miami Police Department's Gang Reduction Activities and Sports Program). *The Police Chief*, pp. 59.

ANNOTATION: The crime prevention program, Gang Reduction Activities and Sports Program, of the Miami Police Department aims at diverting at-risk youngsters from gang members by bonding them with a positive adult person. The program's ropes course requires police officials to work with young gang members to overcome problems through effective communication, trust building, and team-work. Although the youth are initially skeptical about the motive of the police officials, they gradually develop a positive outlook.

26. Finkenbergh, M. E., Shows, D. & DiNucci, J. M. (1994). Participation in adventure-based activities and self-concepts of college men and women. *Perceptual and Motor Skills*, 78, 1119-1122.

ANNOTATION: A sample of 18 students (8 women, 10 men) enrolled in a semesterlong adventure education class and 32 (17 women, 15 men) enrolled in a general health class were administered the Tennessee Self-concept Scale to assess the effect of participation in adventure-based activities (including high and low ropes course elements) on self-concept. Using analysis of covariance, with the pretest scores as the covariate, significant differences were found between the two groups on total self-concept and on subscale scores of Physical self, Social self, and Behavioral subscales for men, with the scores of the adventure-education class being significantly higher than those of the control group. Significantly higher scores were found for women in the adventure-education class on total self-concept and on subscale scores than on the Physical and Personal self-scales.

27. Ford, P. & Radosta, R. (1991). Therapeutic use of the ropes course with survivors of sexual trauma. In: C. Birmingham & K. Shuler (Eds.), *Proceedings of the 19th*

International Conference of the Association for Experiential Education (pp. 13-17). Boulder, CO: Association for Experiential Education.

ANNOTATION: This article focuses on the utilization of a ropes course experience to create therapeutic interventions for adult survivors of childhood sexual trauma. A multilevel system of conceptualizing patient dynamics and needs is described along with a case study and in-depth analysis of an intervention. These methods appear unique within the field of experiential therapy.

28. Freeman, P. A. (1993). The experience of "flow" during challenge education activities for adults. *Dissertation Abstracts International*, 54(04A), 1540. (UMI No. AAI9323242).

ANNOTATION: Two adult groups (4 male, 18 female, M = 22.9 years) scheduled to participate in six-hour challenge education (CE) programs at Bradford Woods Outdoor Education Center were invited to participate in the study. The problem of the study was to examine the experience of flow at each phase of a hierarchical challenge sequence in a CE program for adults. A modification of Experience Sampling Methodology was applied. Data was collected prior to and immediately upon completion of every activity participated in during each CE program. Data analysis was based on a sample size of 115, the total number of usable questionnaires. Statistical analyses included chi-square goodness-of-fit, chi-square test of association, t-tests, principal component analysis, and a correlation analysis. The frequency of flow during the cooperation and problem solving phases of the CE program was significantly higher ($\alpha = .05$) than the average occurrence of flow during daily life. The overall occurrence of flow during the CE program was significantly higher ($\alpha = .05$) than the average occurrence of flow in daily life. There were no significant differences in the frequency of flow experiences among the phases of the CE program. The facilitators' subjective experience was not significantly related to the participants' experience of flow.

29. Goldenberg, M. A., Klenosky, D. B., O'Leary, J. T., & Templin, T. J. (2000). A means-end investigation of ropes course experiences. *Journal of Leisure Research*, 32(2), 208-225.

ANNOTATION: Means-end theory and its associated methodology provide an approach for investigating the meanings that individuals associate with the products and services they purchase, consume, and experience. Drawing from this means-end perspective, a study was conducted to develop a better understanding of the range of benefits that results from participation in a ropes course program. A sample of 125 participants from two ropes course programs identified the benefits they derived from their ropes course experience. Using a self-administered laddering procedure, subjects then provided information about the higher-level outcomes and values associated with completing a ropes course. In addition to previously identified benefits such as trust, teamwork, and communication, intermediate level benefits were also identified. These include increases in effectiveness and efficiency, building relationships, developing understanding, setting goals, brainstorming ideas, and task accomplishment. Key personal benefits were also

identified as developing accomplishment, self-fulfillment, fun, and enjoyment of life. The data from this study has marketing implication for organizations that have experiential education programs. The research shows that participants had positive outcomes from their experience, which supports the value of ropes course programs. The study results also have implications for training people who run and facilitate ropes courses. As facilitators, it is important to recognize and be aware of the outcomes participants receive.

30. Green, G. T. (2000). The effect of an outdoor recreation program on the resilience of low-income, minority youth, *Dissertation Abstracts International*, 61(08A), 3347. (UMI NO. AA19984142).

ANNOTATION: This study examined the effect of an outdoor adventure-based recreation program, with an educational processing component, on the development of resilience in low income, minority youth. Outdoor adventure-based recreation programs have traditionally relied upon the challenges of the outdoor experience to promote changes in youth behavior. However, many programs are now emphasizing the use of the processing component, where participants are coached to make associations between activity-related experiences and other aspects of their lives (i.e., negotiating problems, learning new skills). In this study, an adventure-based ropes-course program was offered as an additional activity of a summer recreation program directed at minority youth from 10 to 16 years of age from public housing areas within a middle-sized southeastern city. Twenty-five adolescents from the summer program volunteered to participate in the ropes-course program, which consisted of eight high elements and eight low elements for four hours, one day per week, for six weeks. Facilitators operated the ropes-course program and conducted educational processing with the participants prior to, during, and after each activity. The term educational processing; reflects the fact that educational elements were included within the traditional processing component to shape it towards more resilience outcomes. For purposes of comparison ninety-five additional adolescents were randomly drawn from the summer program, and fifty-seven adolescents were randomly drawn from a local middle school. An adapted questionnaire developed and piloted by Witt, Baker and Scott (1996), based upon research by Jessor (1992, 1993), to assess resilience through improvement in protective factors; was administered as pre- and post-tests to all groups. The same questionnaire was also administered six weeks later as a delayed post-test to treatment group. Results indicated that data from the adapted protective factors scale provided a significant goodness of fit for Jessor's model of resiliency. Furthermore, three protective factor scores for the treatment group improved significantly, relative to the other groups, although these scores declined significantly six weeks after the conclusion of the program. Looking to the future, the identification of specific components within adventure-based activities that can help to promote particular aspects of resilience in at-risk or low income, minority youth holds promise for improved programming for this population.

31. Green, G. T., Kleiber, D. A. & Tarrant M. A. (2000). The effect of an adventure-based recreation program on development of resiliency in low-income minority youth. *Journal of Park and Recreation Administration*, 18(3), 76-97.

ANNOTATION: This study examined the effect of an adventure-based recreation program, with an educational processing component, on the development of resilience in low income, minority youth. In this study, an adventure-based ropes-course program was offered as an additional activity of a summer recreation program directed at minority youth from 10 to 16 years of age from public housing areas within a middle-sized southeastern city. Twenty-five adolescents from the summer program volunteered to participate in the ropes-course program, which consisted of eight high elements and eight low elements, for four hours, one day per week, for six weeks. Facilitators operated the ropes-course program and conducted educational processing with the participants prior to, during, and after each activity. For purposes of comparison, ninety-five adolescents were randomly drawn from the summer program and fifty-seven adolescents were randomly drawn from a local middle school. An adapted questionnaire based upon research by Witt, Baker and Scott (1996), designed to assess resilience through improvement in “protective factors,” was administered as pre- and post-tests to all groups. Results showed that five protective factor scores for the treatment group improved significantly, relative to the other groups. Looking to the future, the identification of specific components within adventure-based activities that can help to promote particular aspects of resilience in at-risk youth holds promise for improved programming for this population.

32. Griffin, W. J. (2001). Effects of an adventure-based program with an explicit spiritual component on the spiritual growth of adolescents. *Dissertation Abstracts International*, 63-08A, 3001. (UMI NO. AAI3062445).

ANNOTATION: The effects of an adventure based program utilizing challenge course, backpacking, and whitewater rafting, combined with explicit Christian spiritual teaching was investigated. Adolescents aged 16 to 20 participated in the two-week experience designed for spiritual growth. Spiritual growth was assessed with a combination of quantitative and qualitative methods. The Shepherd Scale, a 25 item pen and paper survey instrument, was utilized with a pretest posttest control group design to examine spiritual growth. Two sub-scales within the Shepherd Scale addressed the constructs of spiritual Walk and spiritual Belief. A focus group with selected participants was employed to obtain a more comprehensive picture of spiritual impact. Experimental group scores on the Belief Sub-scale increased significantly from pretest to posttest while control group scores did not increase. Both experimental and control group scores on the walk sub-scale increased significantly, leading to a lack of meaningful conclusion. The focus group yielded three themes, recreation, relationships, and rewards. Challenge course activities and the backpacking trip, including a solo time, produced the highest frequency of positive comments related to spiritual growth. Relationships with peers and their immediate counselors (coaches) were a positive spiritual influence on participants as well. Rewards included learning about perseverance, personal talents, and spending significant time alone with God. Members of the focus group placed less emphasis on the more formal explicit spiritual teaching methods when compared to the action oriented components. Results from the study demonstrated an overall positive impact on spiritual

growth as a result of combining explicit Christian spiritual teaching with adventure-based activities.

33. Hart, L. & Silka, L. (1994). Building self-efficacy through women-centered ropes course experiences. *Women & Therapy, 15*(3/4), 111-128.

ANNOTATION: Describes the authors' experiences as facilitators in adventure-based ropes course training for women. Issues about the use of adventure-based learning for personal growth and professional development; changes in women's abilities to take risks, practice assertive leadership and solve problems.

34. Hatala, E. (1992). Experiential learning and therapy. In G. M. Hanna, (Ed.), *Celebrating Our Tradition Charting Our Future: Proceedings of the 20th, International Conference of the Association for Experiential Education* (pp. 113-115). Boulder, CO: Association for Experiential Education.

ANNOTATION: This paper describes the experiential therapy program at the Bowling Green Adolescent Center (New Jersey). This model supports the view that the therapeutic process of addiction treatment accelerated and enhanced by providing the patients with experiential interventions. Experiential therapy includes goal setting, hands-on participation, group-oriented interactions, and activities allowing for accommodation and expression of patient progress. Following each activity patients are prompted to make observations about individual and group behaviors and the impact on themselves and others. Through generalizations, patients begin on a cognitive level to relate those experiences and behavior to recovery. Patients are encouraged to take what they have experienced and learned during adventure experiences, and apply it to their therapies and interactions. Another component of the program is the use of daily behavior contracts that establish individual and group goals. Each week, one of the therapists and his/her therapy group go to the high ropes course, which has proven to be an enjoyable, rewarding, and helpful intervention for patients. Bowling Green staff, professionally trained, is intimately involved in the treatment program. This paper suggests that experiential therapy is an effective vehicle for patients to address individual treatment goals.

35. Huberstone, B. & Lynch, P. (1991). Girl's concepts of themselves and their experiences in outdoor education programmes. *Journal of Adventure Education and Outdoor Leadership, 8*(3), 27-31.

ANNOTATION: Provides a comparative analysis of the implications for girls in outdoor and adventure education in New Zealand and England. Observed and interviewed girls aged 13-15 in residential outdoor education programs. Girls in both settings stated that their self-confidence had increased as a result of the outdoor and adventure activities.

36. Ivie, I. (1997, September). Youth intervention and education initiatives. (dealing with youth crime in Mesquite, TX). *The Police Chief, 64*, 54-56.

ANNOTATION: The city of Mesquite, TX, has found that the best way to deal with rising levels of youth crime and antisocial behavior is to involve representatives from many different sections of the community. There has been particular emphasis on partnership between the school district and the city. There have been a number of specific initiatives, including the creation of a School Resource Office program in the four local high schools and the Ropes Challenge Adventure Course, designed to boost the self-esteem of at-risk young people.

37. Larson, J. P. (1995, May). A Ropes Retreat: Fun, Adventure, and Personal Growth. *Perspectives in Education and Deafness*, 13, 12-17.

ANNOTATION: This article describes a wilderness education program that uses a ropes challenge course to foster group cooperation and individual self-confidence in deaf and hard-of-hearing high school students.

38. MacRae, S, Moore, C., Savage, G., Soehner, D. & Priest, S. (1993). Changes in risk taking propensity resulting from a ropes course experience. *Journal of Adventure Education and Outdoor Leadership*, 10(2), 10-13.

ANNOTATION: Male firefighters were randomly assigned to three-treatment samples control (n=37), standard (n=20) and isomorphic (n=17). The standard and isomorphic samples received a ropes course experience to determine if their risk-taking propensity might change as a result of adventure training. The isomorphic treatment was a modification of the standard ropes course experience to make it a more real and metamorphic representation of fire fighting. The work-like alterations were expected to bring about still greater changes in risk-taking propensity and therefore support the premise that isomorphically and metaphorically structured adventure training will have better transfer to the workplace. No evidence was found to substantiate this belief, however, pre and post measures of the fire fighter's risk taking propensity showed positive increases as a result of participating in the ropes course experience.

39. McCormick, D. J. (1995). The use of a challenge course experience in building skills for healthy intimate relationships, *Dissertation Abstracts International*, 56(06A), 2124. (UMI NO. AAI9534394).

ANNOTATION: This study was descriptive research which utilized a naturalistic inquiry paradigm to gain insight and understanding into the ways individuals perceive that an experiential adventure education experience (a challenge course) designed specifically for couples was useful in building skills for healthy intimate relationships. The skills needed for healthy intimate relationships and the goals of experiential adventure education are closely matched but systematic research involving the connection of these two areas has not been conducted. Five couples that described themselves as being involved in an intimate relationship were selected to participate. Couples were recruited through informational literature distributed to collegiate personal health classes and through word-of-mouth. Selected participants paid a fee of \$40.00 per couple. Individual interviews were conducted with each participant prior to the workshop. The workshop

was conducted on a Friday evening and all day Saturday, totaling fifteen hours. The program utilized games, initiatives, low-element, and high-element activities commonly used in challenge course programs. The nature of intimate relationships and their inherent issues served as a basis for the selection of activities. A two-hour follow-up session was held one month after the weekend workshop and individual telephone interviews were conducted three months after the workshop. From the analysis of data collected for this study, it is apparent that a challenge course experience has potential for building skills for healthy intimate relationships. The extent to which this potential is realized varies with individual participants. With this group of participants, initial gains were in the areas of self-awareness, other awareness, and awareness of relationship issues. Opportunities for enhanced communication, trust, and problem solving were also reported. In most cases a single experience does not result in long-term behavior change. The value of such an experience, like the value of a seed, is dependent on many other variables. Properly planted, watered, fertilized, and cared for, a seed can develop into a thriving plant or tree of great value. Shoved in a pocket, dropped by the wayside, or planted and then neglected and ignored, the seed has limited usefulness

40. McDaniel, P. E. (1999). Benefits of a ropes program in working with at-risk youth's self-concept. *Dissertation Abstracts International*, 59(12A), 4370. (UMI No. AAI9914599).

ANNOTATION: This study examined the changes in self-concept as a function of participation in a not-for-profit community/school-based program, which included a challenge course experience. Historical foundations, related research of such programs, and the current educational system were reviewed. Subjects were ninth and tenth grade minority students identified by school officials as highly at risk of dropping out of school. The subjects attended an inner city public high school that was located in a poverty-stricken area and that possessed an extraordinarily high dropout rate. All subjects received case management services, with the test group beginning these services with a ROPES challenge course program. The self-concept construct was measured pre and post treatment utilizing the Piers-Harris Children's Self-Concept Scale. While total scores were not found to be significantly increased by the students' participation in the ROPES program, some sub-scale results indicated a treatment effect in the area of Physical Appearance and Attributes. The limited recorded effect was questioned due to methodology problems as a result of a very high maturation rate, a natural consequence in the investigation of such a population.

41. McGowan, M. L. (1989). Order of perceived risk intensity and task relevance as program factors influencing locus-of-control in adventure recreation. *Dissertation Abstracts International*, 50(12A), 4099. (UMI No. AAI9006918).

ANNOTATION: The problem. The problem of the study was to examine the effectiveness of ordering recreational activities by intensity of perceived risk and task relevance as program factors effecting subjects' beliefs concerning the control of reinforcement. Procedures. College Students (11 male and 46 female, average age 22.43) were randomly assigned to 1 of 6 sequences of recreational activities. Activities utilized

were tree identification, Dutch oven cooking, fire building, rappelling, low ropes course, canoeing, intermediate ropes course, and high ropes course. Sequences were arranged according to decreasing, increasing or constant low intensities of perceived risk and task or non-task relevance. Support behaviors of activity leaders to subjects during the experiment were limited to simple words and phrases. Subjects completed the I-E scale at the conclusion of treatment and activity leaders were debriefed concerning subjects' reactions during the respective sequences of activity. Findings. Analysis of variance between group I-E scores indicated no significant differences between groups regarding beliefs concerning reinforcement. Activity leader reports varied between groups regarding group support behaviors and levels of enjoyment regarding participation. Results of the study indicate that duration of treatment may be a factor contributing to program effectiveness regarding beliefs concerning the control of reinforcement. Order of perceived risk and task relevance appear to affect subject enjoyment and may facilitate occurrence of spontaneous subject to subject group support behaviors.

42. Meyer, B. M. & Wenger, M. S. (1998). Athletes and adventure education: An empirical investigation. *International Journal of Sports Psychology* 29, 243-266.

ANNOTATION: This study identifies and describes the outcome-oriented effects of ropes course participation on a girl's high school tennis team and explores the process through which these outcomes were achieved. Lewin's change theory is used to explain how some of the athletes reaped greater benefits from the ropes course experience than other athletes and similarly, were more dedicated and effective in their abilities to transfer the concepts they had learned to the tennis courts and beyond. Implications for practitioners and researchers in both sport psychology and adventure education are discussed.

43. McGarvey, A. L. (2004). An evaluation of a ropes course: Efficacy for at-risk youth with externalizing versus internalizing symptoms. *Dissertation Abstracts International*, 64(12), 6334. (UMI No. AAI3116835).

ANNOTATION: The Adventure Learning Program is a seven-week adventure-based middle school program designed to improve the self-concepts and social functioning of students identified by their teachers as at-risk. Participants consisted of 44 respondents' aged 12 and 14 year-olds. There were 29 students who completed the Adventure Learning Program and 15 control students. Ratings of social, emotional and academic functioning were obtained from the students and their teachers pre- and post-treatment. Self-ratings included multi-dimensional self-concept, depression, and self-esteem. The findings suggest that the Adventure Learning Program did not positively affect the participants. Factors contributing to the apparent failure of the Adventure Learning Program to have a positive affect on participants include the selection criteria, a heterogeneous population, the role of the facilitators, the role of the setting, and the intensity and duration of the program. These factors will be discussed and their implications for future programs and research.

44. Moreau, D. N. (1992). Selected physiological effects of Tae Kwon Do and a ropes course on middle school students. *Dissertation Abstracts International*, 53(7A), 2302. (UMI No. AAI9225677).

ANNOTATION: Participation in physical activities programs fills various needs among many adolescents. Such activities promote their physical fitness and provide a means to socialize. Research on the effects of physical activities also indicates psychological benefits from participation. Physical training promotes a sense of control and mastery of themselves and their environment. In turn, increased self-control is thought to promote a sense of well-being, which enhances one's self-concept, reduces anxiety, and positively affects other personality variables. This study investigated the effects of Tae Kwon Do and Repetitive Obstacle Performance Enhancement System (ROPES) courses on participants' self-esteem, depression, aggression, delinquency, popularity, as well as, on school attendance, citizenship grades, and discipline referrals. Subjects of this study originally consisted of 199 middle school students (122 males, 77 females), from 6th, 7th, and, 8th grade. Students were tested prior to and following the treatment using the Coppersmith Self-Esteem Inventory-School Form and the Youth Self-Report. After obtaining pretest data, the students were randomly assigned to one of the three groups (Tae Kwon Do, ROPES, and control) using a stratified random sampling design. The students were stratified on gender, race, grade, and type of students (regular or alternative education). The data analyzed were from students who completed the program (i.e., who had 75% or more attendance) and from whom pre and posttest data were obtained. The Tae Kwon Do, ROPES, and the control group consisted of 21, 23, and 53 respectively. Participants' self-esteem, depression, aggression, delinquency, and popularity. Tae Kwon Do students demonstrated lower class attendance and higher number of discipline referrals during the treatment period compared to those from before the treatment. ROPES students displayed no differences on any variables. Citizenship grades were not affected by participation in either program.

45. Newberry, E. H. & Lindsay, J. F. (2000). The impact of social skills training and challenge course training on locus of control of youth from residential care. *Journal of Experiential Education*, 23(1), 39-42.

ANNOTATION: This study was undertaken to provide a controlled factorial design where participants were randomly assigned to social skills training and/or challenge activities. Forty, fifth through eighth graders and three primary care givers from two residential children's homes were administered a modified form of the Social Skills Rating System (SSRS) for students (S) and parents (P). Participants also received the Nowicki-Strickland Locus of Control Scale for Children (NSLCS). Students were randomly assigned to one of four treatment groups: (a) social skills training and low elements challenge; (b) social skill training with no low elements challenge; (c) low elements challenge no social skills training and (d) no social skills training and no low elements challenge and the control group. Intervention took place over a six-week period, three days/week from 45 to 60 minutes of activity/session. Groups A and B received extensive social skill training. Participants in groups C and D engaged in other activities (swimming, spiritual life, arts and crafts). Near the conclusion of the program,

groups A and C participated in a day long challenge course and group initiative experience, while those in groups B and D participated in alternative activities. The SSRS was administered to all groups following the program to determine changes in their social skills and LOC due to the interventions. Results suggested that participation in the daylong challenge course experience produced more internal LOC. This change remained significantly different from the baseline scores over the three-month follow-up.

46. Noland, R. L. (2003). The effectiveness of the Ropes Challenge Course on the enhancement of critical thinking skills. *Research Quarterly for Exercise and Sport*, 74(1), 53.

ANNOTATION: It has been stated in previous studies that the need for critical thinking skills is abundant and rapidly increasing for survival in today's world. Building on these studies this study examined critical thinking, the facilitation of critical thinking and the use of the ropes challenge course class as a tool to enhance critical thinking. The purpose of this study was to investigate the effect of the Ropes Challenge Course class on middle school student's enhancement of critical thinking skills. Participants included students enrolled in Physical Education and Ropes Challenge Course classes at South Park Middle School and Baker Middle School. Participants were from all three-grade levels, sixth, seventh, and eighth at South Park and eighth from Baker. Total numbers of participants were 650. Participants were given the Cornell Critical Thinking Test Level X (Ennis & Millman, 1985) as a pretest and posttest to test their critical thinking skills. The test consisted of 71 items, which tested induction, deduction, value judgment, observation, credibility and assumptions. Participants were in either the experimental group or the control group. Participants in both groups were given the pretest. Participants in the control group participated in regular Physical Education classes and the experimental group participated in the Ropes Challenge Course activities. After the period of treatment both groups were given the posttest. A two-factor mixed-measures analysis of variance was conducted with an alpha level of .05 to analyze results. The results of the study indicated that there was a significant difference in posttest scores of the experimental group and the control group. Based on the results of this study and with the sample of students it appears that participation in the Ropes Challenge Course class can enhance critical thinking skills. This study adds to educator's toolbox another vice in our quest to develop critical thinkers who can have a significant positive impact on our future.

47. Nyhus, R. A. (1993). The effect of adventure education over time on physical self-efficacy and task-specific self-efficacy of college students. *Dissertation Abstracts International*, 54(10A), 3699. (UMI No. AAI9404242).

ANNOTATION: The purpose of this study was to examine the effects of participation in an eight-week adventure education class on physical self-efficacy and task-specific self-efficacy over time. The subjects involved in this study included 40 volunteer undergraduates enrolled in introductory adventure ropes courses at the University of Northern Colorado. The data were collected using three types of instrumentation at five different measurement periods. All students were administered the Task-Specific Self-Efficacy Instrument (Bandura, 1981) to measure self-efficacy on tasks specifically related

to the adventure ropes course. The instrument used to collect physical self-efficacy data for the variables of perceived physical ability and physical self-presentation confidence was the Physical Self-Efficacy Instrument (Ryckman, Robbins, Thornton, & Cantrell, 1982). The number of tasks completed and the levels of completion were measured with the Task Completion Instrument. Data analysis included descriptive procedures using means and standard deviations, and statistical analysis utilizing Repeated Measures Analysis of Variance (ANOVA) and Pearson product-moment correlation. Six conclusions were generated from the data. (1) Physical and Task-Specific Self-Efficacy scores were significantly higher at the end of the adventure ropes course than at the beginning. (2) Physical and Task-Specific Self-Efficacy scores were significantly higher at the end of the adventure ropes course than at the beginning for students who were categorized into high, medium, and low groups. (3) Data for the high group showed significant changes following the beginning activity treatment, first high element treatment and high element treatment on perceived physical ability. (4) Data for the medium group showed significant changes following the beginning activity treatment, low element treatment and first high element treatment for task-specific self-efficacy. (5) Data for the low group showed significant changes following the beginning activity treatment and high element treatment for perceived physical ability and following the high element treatment for physical self-presentation confidence. Significant changes were found for the low group following all treatments during the ropes course for task-specific self-efficacy. (6) A significant relationship was found between task-specific self-efficacy and completion of adventure tasks.

48. Nyhus, R. A., Napper-Owen, G. & Phillips, D. A. (1996). The effect of an adventure education experience on the physical self-efficacy of college students. *Research Quarterly for Exercise and Sport: March 1996 Supplement*, 67, A-86.

ANNOTATION: The purpose of this study was to determine the effects of an eight-week adventure education course on the physical self-efficacy of college students. The study was designed to analyze changes in physical self-efficacy during three phases of the course and six months after the course was completed to determine retention. Subjects were 20 traditional college students enrolled in two eight-week adventure education courses. The instruments used were a 22-item Physical Self-Efficacy Scale and a Task-Specific Physical Self-Efficacy Scale. Instruments were administered at the beginning of the class, on the final day of the class, after completion of the initiatives component, after completion of the low elements, after completion of the first high element, and six months after completing the course. Data were analyzed using a repeated measures analysis of variance and contrast transformation procedures for multiple comparisons. Findings revealed that self-efficacy can be increased in college students using a typical model of instruction, and maintained at least for a moderate length of time.

49. Overrocker, J. M. (1991). Identification of items to measure the team player: Relationships between items of the life style personality inventory and observation of behavior during an outdoor ropes experience. *Dissertation Abstracts International*, 53(01A), 106. (UMI No. AAI9201470).

ANNOTATION: It was hypothesized that a set of items derived from recollections of childhood events and relationships could discriminate which individual would perform in a manner, which facilitated a group's performance. It was anticipated that there would be a correlation between such a set of items and the existing Social Interest Index (SII) of the LSPI. Individuals (132) were administered the LSPI prior to a standardized team experience on an outdoor challenge ropes course. Immediately following the experience three of five trained observers rated each individual using the Harvard Community Health Plan Group Cohesiveness Scale (HCHP-GCS). A review of the literature supported the six scales of the HCHP-GCS being used as a measure of the team player concept. An inter rater reliability study was completed. Correlations were determined between individual items of the LSPI and high ratings on the HCHP-GCS. A correlation matrix was constructed utilizing 30 of the subject's responses to the LSPI. T tests were performed on items, which correlated significantly with the observer's ratings of the good team players utilizing the responses of the remaining subjects. Correlations were computed between existing themes of the LSPI and the overall mean ratings on the HCHP-GCS. A discriminate analysis was performed to determine if existing themes of the LSPI could identify the good team player. Another discriminate analysis was performed to see if the set of items that correlate with the team player could identify the good team player. Inter rater data analysis indicated that trained observers could identify the high team performers in a reliable manner utilizing the HCHP-GCS. Data analysis indicated that a set of six items did exist within the LSPI that correlated with observer ratings. A significant correlation was observed between overall mean ratings on the HCHP-GCS and both the Controlling/Passive theme and the Social Interest Index. Four themes of the LSPI, Controlling/Passive, the Social Interest Index, Conforming/Active and Conforming/Passive made up a discriminate model of LSPI themes that could discriminate the good team player. Four of the six items, which were significantly correlated with, overall mean ratings on the HCHP-GCS were also able to discriminate the good team player. (Abstract shortened with permission of author.)

50. Owen, K. J. (1990). An evaluation of the short-term outcomes of an experiential training intervention. *Dissertation Abstracts International*, 51(12B), 6138. (UMI No. AAI9109200).

ANNOTATION: This dissertation explored the short-term outcomes of an experiential "ropes-course" based training intervention in the sales force of a financial services organization. Subjects were financial services sales people (DRs) and sales managers. Published research on Outward Bound training, self-esteem/self-efficacy, and team building was briefly reviewed. Expected attitude and behavior changes were clarified, then explored in a preliminary study, which also gathered examples of behavior changes participants felt had resulted from the program. The findings were the basis for a second study that used a pre/post design. Pre-training instruments were administered two weeks before and post-training instruments six weeks after training. Efforts were made to control for testing effects, mortality, low statistical power, the error rate problem, and low measurement reliability. The primary design weakness was the unavailability of a true control group. Statistically significant post-training changes in the expected direction were found for 12 of the 17 DR scales on which change was expected, despite stringent

requirements for statistical significance. Participation was associated with increases in DRs' individual supportiveness, willingness to risk, and expressiveness, and also with a large decline in rated depression. No change in preference for working alone vs. with others was found. Significant post-training increases were found in group supportiveness and group image; as was a significant decline in within-group conflict. DRs reported significantly more frequent supportive contact with home office employees after training, though their overall ratings of home office supportiveness did not change. Interestingly, there was no evidence of any effect on DRs' relationships with their managers. Outcomes were found not to differ for male and female DRs, or for DRs of varying tenure and previous sales success. No sustained effects on sales performance were found. There was some indication that decreased voluntary termination might be a significant outcome in settings where most turnover is voluntary. Results were consistent with other research on Outward Bound-inspired programs, which has generally found positive effects on participants' self-perceptions, self-concepts, and anxiety levels; but less impact on "bottom line" organizational variables.

51. Priest, S. (1995). The influence of Project Adventure on the risk-taking propensity of youth. *The Ontario Research Council on Leisure, 1*(1), 5-7.

ANNOTATION: Fifty-seven high school youth participated in the treatment of an adventure program conducted by Project Adventure. Treatment consisted of a series of group challenge activities. Before and after this treatment, they completed a survey of their propensity to take risks involving potential physical, mental, social, or emotional losses. These risks were divided into two types: those associated with the treatment (adventure activities of mostly physical and mental risk) and those associated with social settings (socialization activities consisting mostly of social and emotional risks). As expected, experience with the treatment increased the youth's propensity to take adventure activity related risks indicating that the treatment was effective. Similar increases were also noted in risk-taking propensity for the socialization activities, suggesting that newly gained confidence or enhanced self-concept, likely due to the treatment might be responsible for the positive shifts toward pro-social behavior on the part of the youth. These findings suggest that education programs conducted by organizations similar to Project Adventure may prove to be an effective modality for working with today's at risk youth.

52. Rastall, P. W. (1998). A phenomenological exploration of two high ropes course elements. *Dissertation Abstracts International, 59*(05A), 1773. (UMI No. AAI9835028).

ANNOTATION: The Purpose of this study was to explore the essence of attempting two high ropes course elements, the Cat Walk and the Pamper Pole. Thirty-two volunteer participants walked across a low and high Cat Walk and jumped for an adjustable trapeze on the Pamper Pole. Participants were individually interviewed and later questioned in focus groups. The interviews were analyzed for common themes that captured the essence of the experience of attempting the two high elements. The themes addressed the following areas of questioning: The Cat Walk experience, the Pamper Pole experience, the safety belay system, transference of learning and self-concept. Emergent themes were

analyzed and interpreted through the basic constructs of Self-Efficacy Theory. A diagram was developed for each of the elements, segmenting the individual experiences into four accomplishments were found to raise self-confidence for the participants in the study.

53. Roland, C. R., Summers, S., Friedman, M. J., Barton, G. M. & McCarthy, K. (1987). Creation of an experiential challenge program. *Therapeutic Recreation Journal*, 21(2), 54-63.

ANNOTATION: There is a strong movement today for the inclusion of challenge and adventure programs in the psychiatric setting. The authors discuss how an experiential challenge program (ECP) was designed, implemented, and evaluated at the Veteran's Administration Hospital in White River Junction, Vermont. This program differs from other challenge models by paying less attention to activities, which involve physical risks. Instead, more attention is focused on those outdoor, as well as indoor activities, which focus on social, cognitive and emotional risks. A critical key to the success of this program was capitalizing on the skills and competencies of VA staff members. Counselors and therapists from the department of psychology, psychiatry, and recreation therapy were trained in how to implement the ECP. Thus, with the program being completely on-site, patients were able to participate frequently. An evaluation of the ECP using a critical incident technique was utilized with favorable results.

54. Rothschild, J. (2001, July-August). Adding Character to Camp Programs: Using Ropes Courses To Teach Values. *Camping Magazine*, 74(4), 19-21.

ANNOTATION: Steps in integrating character values into the camp curriculum are: having a vision, choosing character values and relating them to program activities, providing incentives, ensuring that all levels can be completed during the camp session, making the program age-appropriate, providing staff training, tracking campers' progress, seeking feedback, and making adjustments. An example describes the process using ropes courses.

55. Saunders, J. T. (2002). Leadership for Students Program: Through their eyes. *Dissertation Abstracts International*, 63(11B), 5189. (UMI No. AAI3071867).

ANNOTATION: Youth programs, such as the Leadership for Students Program, provide alternative educational formats, which help address the needs of our children. Typically, these programs are considered external to the general school curriculum. The Leadership for Students Program promoted youth leadership through outdoor, experiential education. The purpose of this study was to examine this program from the youths' perspectives. The program was a semester-long project with sixty-seven contact hours. Twenty-five students participated. The program consisted of an introductory session, a parents meeting, two sessions of initiatives and group building, three sessions on a climbing wall, one three-day trip, a full day on a challenge course, a day spent facilitating their initiatives in a local school, and their closing banquet. Each session included group building, journaling, group discussions, and group processing. Group building included activities designed to promote and encourage trust, communication, self and social

awareness, confidence, and skill development. Climbing was the outdoor experiential theme. Reflection and introspection were encouraged throughout. There were two main facilitators, one assistant facilitator, and one high school teacher involved in the planning and implementation of the program. The program was founded upon ideas of promoting awareness of self and others through outdoor, educational experiences: Hellison's (1995) humanistic educational approach, Combs (1999) person-centered teaching approach, Rohnke and Butler's (1995) adventure education ideas, and Komives, Lucas, and McMahon's definition of leadership (1996). The findings of this study demonstrate the potential for a person oriented approach to education and provide insight into the students' perspectives on leadership. Four overarching themes emerged: belonging, play, self and others, and place. Sub themes included group building, support, trust, personal growth, respect, and communication. This study gave us insight into our educational methods, and who we are and how we, both individually and as a group, can contribute to education and our community.

56. Silka, L. & Hart, L. (1994, Fall). Building self-efficacy through women-centered ropes course experiences. *Women & Therapy*, 15(3-4), 111-128.

ANNOTATION: This paper describes our experiences as facilitators in adventure-based ropes course training. It summarizes experiences with different groups that raise rich and complex issues about the use of adventure-based learning for personal growth and professional development. These groups include women executives, women living in public housing who have formed a women's resource group, adolescent women in treatment, adolescents from culturally diverse backgrounds, graduate students, and women who have been sexually abused. These groups reflect the diversity of female participants who have engaged in ropes course training. Although participants are diverse, deep commonalities exist in the kinds of issues they are addressing in ropes course programs. Positive changes in women's abilities to take risks, practice assertive leadership, solve problems effectively, and feel more competent in general, can result from participation in a ropes course experience. In this article, the reader will see how one fixed ropes course element can be used to create a variety of metaphors for diverse groups for diverse groups of participants.

57. Smith, C. A. Strand, S. E. & Bunting, C. J. (2002). The influence of challengecourse participation on moral and ethical reasoning. *Journal of Experiential Education*, 25(2), 278-280.

ANNOTATION: Presents a study that investigated the impact of an outdoor experiential program on the moral reasoning of college students. Background on the Defining Issues Test; Role and importance of modeling; Discussion on unethical behaviors in colleges and universities.

58. Sottile, J. M., Parker, S. & Watson, G. (2000). The impact of an experiential instructional design on college student development. Paper presented at the Annual Meeting of the Eastern Educational Research Association (Clearwater, FL, February 16-19, 2000). Available in paper and on microfiche. ERIC Number: ED442040.

ANNOTATION: Although there is a lack of research regarding the impact of ropes courses on student development, this paper states that there is significant information on this experiential learning experience contributing to student retention. It describes research designed to study how an experiential ropes course can impact undergraduate male and female (18 to 26 years old) student development among students attending a university in a rural area of a Mid-eastern state. Along with survey data, observations, and journal writings, the students completed open-ended questions about their experiences on the final paper and were interviewed. When the data was analyzed from a qualitative approach, four themes emerged. Trust, friendship, community, and communication are components of problem solving. The paper suggests that given the recent attention to school violence and violent behavior against diverse populations, the areas of community development, trust development, and teaching non-violent ways to solve problems are timely topics. It concludes that experiential learning, such as a ropes course, can increase a college student's ability to solve problems in a socially acceptable manner; build and teach a person how to appropriately trust others; empower a person with the skills necessary to be part of a healthy community; and increase a college student's interpersonal skills, social skills, and physical ability. (Contains 22 references.)

59. Steffen, J. & Cross, R. (1994). Adventure education for at-risk college students. *Research Quarterly for Exercise & Sport*, 65(1), pA-83.

ANNOTATION: Presents an abstract on the effects of an adventure ropes course experience on the self-efficacy and academic self-esteem of Directed Admission Program at the University of Northern Colorado. Effects of low entry scores and low high-school standing; Perceptions of the students' abilities.

60. Stopha, B. (1994). Women on the ropes: Change through challenge. *Women & Therapy*, 15(3/4), 101-109.

ANNOTATION: Although the ropes course has been used for many 'special populations' it can be used as a powerful tool for learning and increasing self-awareness and esteem for many women in our society. Sexism and oppression of women create internal and external fears and mistrust. Leadership development is stifled in some women while others feel the pressure of having to lead. The all-women's ropes course experience presents opportunities for women to explore these fears, build trust in themselves and others, and try out their leadership skills within a safe and supportive environment. Women gain a new sense of possibility through the experience of seeing other women do what society says we should not be doing.

61. Sturdivant, V. A. (1990). The effect of ropes course elements on self-concept and affective behavior. *Dissertation Abstracts International*, 52(02A), 468. (UMI No. AAI9114139).

ANNOTATION: The purpose of the study was to investigate the effects of a ropes course program on self-concept and affective behavior, based on the belief that ropes course

participants would rate significantly higher than non-participants. A group of freshmen from a select liberal arts college made up the population. Measuring instruments used were the Tennessee Self-Concept Scale and the Platt Affective Behavior Scale. The program was a pre-test, post-test control group design. Data were analyzed by two sample t-tests, correlations, and logistic regressions. Based on the findings of the study, the following considerations were recommended. Similar studies should be conducted using larger samples and random assignment. A longer course should be considered for normal, educated adult populations, and several forms of qualitative data should be used. Measuring instruments should be created to measure complex variables so that qualitative data can be collected to complement quantitative data. Although the hypothesis was not supported there were trends toward differences measured by the Platt Affective Behavior Scales. Logistic regressions found that scales of perseverance and expression of emotions and feelings were the most differentiating scales. Positive change of participants is generally an accepted fact associated with experiential education. The availability of quantitative and qualitative data is not always statistically assured. The Platt Affective Behavior Scales helps shift the focus of self-concept from the self-rater to the way one is perceived by the outside populations. Emphasis on affective behavior and skills may prove to be a better measure of reality in which one lives, as researchers and practitioners continue to measure self-concept.

62. Taylor, F. L. (1989). The influence of an outdoor adventure recreation class on personality type, locus-of-control, self-esteem, and selected issues of identity development of college students. *Dissertation Abstracts International*, 51(04A), 1122. (UMI No. AAI9021974).

ANNOTATION: This study investigated relationships between an Outdoor Adventure Recreation (OAR) Class and self-esteem, locus of control, personality type and selected developmental issues of college students. The students (N = 21), who ranged in age from 19 to 27, included 14 females and 7 males. The group met for 15 weekly two-hour sessions with the instructor/researcher to discuss the theories and constructs of OAR and their participation in three OAR events. These events were a one-day adventure ropes course, a one-day introduction to technical rock climbing, and a weekend white water water-rafting trip. Students kept journals, wrote responses to questions about the class, and participated in an exit interview with the researcher. The Rotter Internal-External Locus of Control Scale (I-E LOCS) and the Rosenberg Self Esteem Scale (SES) were administered to the class at the beginning of the semester and again at the last class meeting. A demographic questionnaire was also completed by the students during the first class meeting. The Myers-Briggs Type Indicator (MBTI) was administered following the second OAR event. The range, mean, standard deviation, standard error, mode, and median were computed for the I-E LOCS, SES, and nominal scales of the Demographic Questionnaire, and the relationships among the three data sources were evaluated by the Pearson product-moment correlation technique. A Type Table was developed for the MBTI data and correlation coefficients, using continuous scores, were analyzed to determine significant relationships among the different type preferences and among the MBTI and I-E LOCS and the SES. Constant comparative techniques were used to analyze the data from the journals, written responses, and interview transcripts.

The developmental tasks and associated issues were identified and examined as to the ways they are influenced by the OAR activities and discussions in the Recreation class. The students' scores on the pre-test and the post-tests of the I-E LOCS and the SES were not significantly different. The qualitative indicators, however, did show positive changes in locus of control and self-esteem. Self-report paper-and-pencil instruments may not be sufficiently refined to measure such complex variables. Qualitative data also confirmed that the OAR experience influenced three of youth's developmental tasks: (1) stabilizing identity, (2) defining the dream, and (3) developing intimate relationships. The MBTI modal type was -NFP and students with this preference also reported greater changes in self-esteem and locus of control than non-modal types.

63. Taylor, T. W. (2001). The Perceived Effects Of Campus Recreation's Outdoor Pursuits Programs On The Retention Of College Freshmen In selected Universities In The United States. *Dissertation Abstracts International*, 63-01A, 361. (UMI NO. AAI3039261).

ANNOTATION: The purpose of this study was to ascertain freshmen participants' involvement in outdoor pursuits and the perceived effects resulting from outdoor pursuits program participation on student retention for the sophomore year. Participation was identified as off-campus outings, skills workshops, challenge course sessions, and/or a conservation project. Participation required in any of one of these 4 categories for 4 or more consecutive hours of involvement in an identified activity. The respondents from the 8 participating universities returning for the sophomore year completed the survey instrument. The universities selected for this study were determined by using 6 criteria specific to the National Intramural Recreational Sports Association (NIRSA). These were (1) all institutions in NIRSA Region II and Region IV, (2) a division of Student Affairs, (3) an established program, (4) a designated student recreation center, (5) a professional staff outdoor coordinator, and (6) a program that offers at least 2 of the participation criteria. Each freshmen student participant completed a modified NIRSA Quality and Importance Of Recreational Services (QIRS) survey beyond the drop date of the sophomore year at their respective school to ascertain his/her involvement and any perceived effects on retention. Considering the findings, every college and university should allocate personnel and resources to this area. This could increase students' participation, student growth, program growth, and student retention.

64. Teaff, J. & Kablach, J. (1987). Psychological benefits of outdoor adventure activities. *Journal of Experiential Education*, 10(2), 43-46.

ANNOTATION: This study investigates the psychological benefits of participation in caving, rock climbing, ropes, and teams course of 30-day adventure program by 56 delinquent youth (ages 11-18). The paragraphs About Leisure ñ Form E (PAL-E) was used to determine the extent to which a specific psychological benefit is satisfied by participation the activities being investigated. Results suggested that the rope course experience satisfied independence, rewards, and variety more than caving; rock climbing satisfied independence and rewards more than caving; caving less beneficial than other activities.

65. Tillotson, S. M. (1994). The effect of experiential family therapy on changes in attributional and defensive communication patterns for adolescent sexual offenders, *Dissertation Abstracts International*, 56(06A), 2434. (UMI NO. AAI9531424).

ANNOTATION: This study examined the dimensions of interpersonal processes between adolescent sexual offenders and their families in the beginning stages of treatment. The treatment of adolescent sexual offenders is still in the initial stages of research. The research in this area has traditionally been focused on victims, potential victims, and adult sexual offenders. Key factors to address have been the affect of treatment on defensive behaviors, attributions, and family environment. Adolescent male sexual offenders of a two-parent family from the ages of 12-18 were included in this study. Data analysis included the Beck Depression Inventory, the Moos' Family Environmental Scale, a modification of the Fincham and O'Leary attributional questionnaire, and the Defensiveness and Supportiveness Coding manual designed by Dr. James Alexander at the University of Utah. Findings indicated that with respect to the four dispositional attributions of communication, boundaries, anger, and power/control there was no significant difference over all and over time. There was a marginal significant tendency for dispositional attributions to decrease regarding communication problems for those in the ropes challenge course. This finding suggests that sexual offender families in ropes challenge course programs might be beginning to improve communication skills by improving support, participation, and involvement in this modality.

66. Ulrich, J. S. MSW (1992). The effects of alternative school students' participation in a ropes course experience. *Dissertation Abstracts International*, 31(03), 1090. (UNI No: AAI351778).

ANNOTATION: This quasi-experimental study analyzed the relationships among problem solving ability, self-efficacy, future expectancy of success, group counseling attendance, and school attendance for students who participated in a two-day ropes course experience. The students who voluntarily participated were enrolled at the Venture School, an alternative high school. The ropes course experience was the independent variable. The statistical tests used to analyze the data were Chi square and the Mann-Whitney U. The analysis revealed no significant change in the experimental group of students who participated in the ropes course experience. Recommendations for future researchers are presented.

67. Voight, A. (1988). The use of ropes courses as a treatment modality for emotionally disturbed adolescents in hospitals. *Therapeutic Recreation Journal*, 22(2), 57-64.

ANNOTATION: A growing trend for special populations is the inclusion of outdoor adventure activities as a part of their treatment process. This article describes a research study conducted on the use of ropes courses as a treatment modality for hospitalized emotionally disturbed adolescents. The study analyzed what effect participation on a ropes course had on specific mood traits of emotionally disturbed adolescents using

control and treatment groups in a pre/posttest design. Results indicated few significant differences. Implications of the results and the use of outdoor adventure activities, such as ropes courses, as a treatment modality are discussed.

68. Wagstaff, M. C. (1997). Outdoor leader self-awareness and its relationship to co-leaders' perceptions of influence. *Dissertation Abstracts International*, 58(10A), 4067. (UMI NO. AAI9811760).

ANNOTATION: Scope and method of study. The purpose of this study was to examine the relationship between outdoor leader self-awareness and co-leader's perceptions of leader influence. Self-awareness was considered for this study to be based on Kazimierz Dabrowski's "Theory of Emotional Development" and Abraham Maslow's concept of self-actualization. Influence was defined as French and Raven's categories of expert and referent power. An intact group of 33 challenge course instructors employed by a mid-western university served as participants. Each subject completed a Definition Response Instrument (DRI) and the Personal Orientation Inventory (POI) in order to assess levels of self-awareness. Subjects completed an adapted version of the Rahim Leader Power Inventory (RLPI) in order to measure co-leader's perceptions power. Pearson r coefficients were used to assess the relationship between self-awareness and perceptions of power. An analysis of variance was used to assess the effect of age, education, gender and work experience on self-awareness and power. Low association resulted between the DRI measurements self-awareness and RLPI scores of expert and referent power. Of the 12 scales associated with the POI, moderate associations were found between expert power scores and the scales of Inner-directedness (.375), Self-actualizing Value (.460), Feeling Reactivity (.367), and Spontaneity (.394). Low associations resulted between power scores and the remaining 8 POI scale scores. DRI scores and POI scores were also analyzed and resulted in low associations. One-way ANOVAs conducted between DRI scores and age, gender, educational level and work experience resulted in no significant findings. Among the two bases of power, expert power demonstrated the only significant effects at $p \leq .05$ or lower when analyzed with age, educational level, and work experience. Challenge course instructors who are older, have more work experience, and more education were perceived by co-workers to have a higher expert power base. No significant difference was perceived between men's and women's expert and referent power bases in this study.

69. White, F. E. (1997). The long-term effects of a nine-week challenge initiative program on locus of control and self-esteem of fourteen- to eighteen-year-old youth. *Dissertation Abstracts International*, 58 (8), 4178. (UMI No. AAI9806612).

ANNOTATION: The purpose of this study was to examine the effects of participation in a 9-week challenge initiative program after 2 years on locus of control and self-esteem of 14- to 18-year-old youth. The theoretical foundations of this study include Social Cognitive Theory and Attribution Theory. The study was an experimental 2 x 2, fully crossed, two-factor design with repeated measures on one factor (time). The Nowicki Strickland Internal/External Control Scale and Coopersmith's Self-Esteem Inventory were used to measure the dependent variables, locus of control and self-esteem. The

participants were 24 at-risk youth ages 14-18 randomly assigned to an experimental group (N = 12) or a control group (N = 12). The experimental group participated in a 9-week challenge initiative program as part of a term-long for-credit class. The control group participated in a for-credit social skills class over the same 9-week period. Both groups were tested before the program, after the program, and 2 years later. Results indicate an interaction effect on locus of control and self-esteem between group and time. The significant effects between groups immediately after the 9-week program period attenuated to non-significance between the groups after 2 years.

70. Wisnyai, M. (1988). The effects of an integrated outdoor adventure experience on the risk taking attitudes of high school students. *Dissertation Abstracts International*, 50(11B), 5306. (UMI No. AAI8926357).

ANNOTATION: The purpose of this study was to examine the effects of an integrated outdoor adventure experience on the risk-taking attitudes of high school students. A second treatment group that did not utilize the integrated outdoor experience served as a comparison group. The study also included a control group to maintain uniformity of experimental conditions. Students in the primary treatment group received a three-phase experience that was structured around an adapted experiential learning model. Included in this experience was an Orientation, a High Ropes Course Experience, and a Post-Activity Group Processing session. The Risk-Taking subscale of The Jackson Personality Inventory served as the repeated post-test dependent measure in the study. Analysis of Covariance was used to determine if differences between treatment groups and the control group occurred. Results indicated that the integrated outdoor adventure experience produced significantly greater effect on the risk-taking attitudes of the subjects than the non-integrated experience. Implications for public school programming of such outdoor adventure experiences are discussed.

TEAM BUILDING

One function of a challenge course experience is to encourage or enhance the characteristics associated with highly functioning teams. Team building is an all-encompassing term that includes a number of variables, all of which can be addressed through participation in challenge course activities. Most team building programs are designed to develop new problem solving skills, promote risk-taking, build working relationships, assist in setting goals, encourage cooperation and collaboration, enhance leadership and communication skills, and encourage creative thinking, and cultivate trust. The following studies offer insight into the use of challenge courses as effective mediums for team development.

71. Allain, M. (1997). The effect of adventure-based experiential training on team cohesion. *Dissertation Abstracts International*, 36(04), 891. (UMI NO. AAI9966112).

ANNOTATION: The purpose of this research was to assess the effectiveness of an Adventure-Based Experiential Training Program (ABET), developed specifically for a soccer team. A total of nineteen female soccer players from a Canadian university team were selected to participate in this study. The players participated in a total of four initiative activities. In order to gain a greater insight from the participants involved in this study a qualitative approach, including both journals and focus groups was selected. This qualitative analysis indicated that the ABET program resulted in immediate and sustained changes within this team's cohesion level. The first initiative activity, Group Juggling resulted in profound changes in communication and in the team's cohesive feeling, one minor change in the players' confidence level. The Calculator, the second initiative activity also impacted the team's communication and cohesion level. The Spider's Web, the third initiative activity resulted in a change in the players' ability to overcome distractions, to problem solve and one minor change was noted in the team's confidence level. The final initiative activity consisted of Trust Activities and as anticipated, the team's sense of trust was mainly impacted. (Abstract shortened by UMI.)
 SU: Education-Physical (0523); Recreation (0814)
 SO: VOLUME OF DISSERTATION ABSTRACTS INTERNATIONAL. PAGE.

72. Bannon, P. M. (2000). The effects of the outdoor experiential ropes course on perceived team performance. *Dissertation Abstracts International*, 61(03A), 852.

ANNOTATION: The purpose of this quasi-experimental study was to explore the perceived effects of the Ropes Course on the performance of intact work teams. The dependent variable, team performance, was measured by the Team Performance Assessment, a 20-question inventory. The ropes course, the independent variable, was an outdoor experiential training program presently marketed as a highly effective team building training program. Issues the team addressed in the highly emotional and physical environment were purported to transfer back to the work environment and act as a catalyst for change. The Ropes Course in this study consisted of a day long series of

outdoor mental, emotional and physical exercises addressing the issues of goal-setting, role expectations, accountability, trust, respect, communication, problem-solving and decision-making. The 68 subjects, 37 in the treatment group and 31 in the control were employees of a large international financial institution. They were not chosen by random selection. The work teams' managers recognized a need to improve team morale, performance and functioning due to corporate reengineering and downsizing resulting in team members' job losses. Control teams were partially matched to the treatment teams on the basis of professional composition and similar job descriptions. The pretest of the Team Performance Assessment was given the morning of the Ropes Course treatment and the posttest was given three to five weeks later. The control teams received the pretests and posttests at about the same time intervals at their work location but received no Ropes Course treatment. The treatment teams' scores and the control teams' scores were statistically compared using the Multivariate Analysis of Variance (MANOVA) and the Multivariate Analysis of Covariance (MANCOVA) at the .05 level of significance. The statistical analysis revealed a significant difference between the control and experimental teams after the team building Ropes Course training as measured by the Team Performance Assessment (Gilbert, 1996).

73. Bolduc, W. J. (1998, Spring). The low ropes challenge course as a means of team development in video production. *Feedback*, 39(2), 29-37.

ANNOTATION: Undergraduates enrolled in a field video production class at the University of North Carolina at Wilmington completed a low ropes challenge course as a team-building activity. Found that the ropes course contributed to group processes and getting students to trust one another, although its contribution to building intragroup cohesiveness was questioned.

74. Bronson, J., Gibson, S., Kishar, R. & Priest, S. (1992). Evaluation of team development in a corporate adventure training program. *Journal of Experiential Education*, 15(2), 50-53.

ANNOTATION: The purpose of this study was to evaluate changes in stages of team development prior to and after involvement with a corporate adventure training program. An experimental group of corporate managers participated in a three day adventure training program that included challenge course events and group initiative activities. Following each event, groups debriefed with the assistance of a trained facilitator. Changes were measured using the Team Development Inventory (TDI). A control group from the same organization did not receive the treatment. Data were analyzed using ten-two way ANOVAS to determine whether there were significant differences in the results for the control vs. the experimental group. Pre vs. post-test and for interactions between these two factors. Results indicated that eight of the ten items on the TDI showed positive changes for the group, which received treatment. No changes in the control group were noted. Additional discussion and recommendations are also presented.

75. Daniels, M. R. (1997). The ROPES course: applications for education and training. *Journal of Public Administration Education* 3(2), 239-242.

ANNOTATION: Repetitive Obstacle Performance Evaluation System (ROPES) is an outdoor course that presents several physical and mental challenges best solved through group decision-making and participation. A ROPES experience can be integrated into graduate-level public administration course work and is especially useful in team-building consulting. ROPES was designed as an urban alternative to the Outward Bound programs. It provides an opportunity to explore organizational skills, such as interpersonal communication, creative problem solving, goal setting, risk taking, trust, self-esteem, and group dynamics. A sequential approach is used, starting with activities to develop awareness and a relationship between participants and the natural environment. Noncompetitive games are often used to establish an atmosphere of play, cooperation, and fun, as well as to provide good aerobic exercise and warm participants up for other activities. Discussion for all levels of ROPES course elements is initiated by the ROPES instructors and incorporates metaphors to facilitate dialogue about the working environment and the organizational problems perceived by participants.

76. Daniels, M. R. (1994, Summer). Outdoor adventure and organizational development: an ropes course intervention. *Public Administration Quarterly*, 18(2), 237-250.

ANNOTATION: Presents a case involving a local health department and its outdoor adventure organizational development intervention in Tulsa, Oklahoma. Description of the curriculum of the outdoor adventure workshop designed for the Tulsa City-County Health Department; Work environment problems identified by participants of the workshop.

77. Fine, L-J. (1997). A hero's journey: A freshman orientation challenge course program. In: *Deeply Rooted, Branching Out, 1972-1997 Proceedings of the 25th, International Conference of the Association for Experiential Education*. Boulder, CO: Association for Experiential Education.

ANNOTATION: At California State University, Fresno, all incoming students take a full-semester, three-unit course that includes topics on academic preparation but also focuses on issues and topics commonly associated with experiential and adventure education. These areas include communication, listening, teamwork, and problem-solving skills. Recognizing the applicability of experiential education to reinforce such skills, a pilot program was undertaken using the campus ropes course. Since college represents an ideal rite of passage for many students, it seemed appropriate to borrow from Joseph Campbell's monomyth, a hero's journey. The program guides students through the ropes course along the steps described in Campbell's "Hero with a Thousand Faces." Myths are an effective means of facilitating educational experiences because they are remembered easily, are open to interpretation, and engage participants in the same manner as an initiative activity might. The stages of the hero's journey are the separation or departure, the trials and victories of initiation, and the return and reintegration with society. These stages are reconceptualized in terms of the college student's experience. Program activities related to each of the stage described, and 13 questions for reflection are listed.

78. Froiland, P. (1994, January). Action learning: Taming real problems in real time. *Training*, 31, 27-34.

ANNOTATION: Discusses the advantages of using action-learning programs in employee training. Description of action learning; uses; reasons for success; problems encountered with the program; action learning in the pursuit of personal growth; and assessment of possibilities.

79. Glass, J. S. & Benshoff, J. M. (2002). Facilitating group cohesion among adolescents through challenge course experiences. *Journal of Experiential Education*, 25(2), 268-277.

ANNOTATION: Presents a study that examined the effects of participation in a low-element challenge course on younger adolescents' perception of group cohesion. Information is presented on an increase in the use of challenge course programs and activities; discussion on group cohesion, and the overall effectiveness of the challenge course experience.

80. Glass, J. S. & Myers, J. E. (2001). Combining the Old and the New to Help Adolescents: Individual Psychology and Adventure-Based Counseling. *Journal of Mental Health Counseling*, 23(2), 104-115.

ANNOTATION: Adventure-Based Counseling (ABC), and in particular low-element challenge courses (LECC), are group-oriented programs that help participants learn to share responsibility, develop cooperative problem solving skills, and increase self-confidence and well-being. These outcomes are consistent with the tenets of Adler's Individual Psychology, such that an intentional combination of the two approaches offers a unique opportunity to help adolescents--specially delinquent youth--achieve positive therapeutic outcomes. This investigation used a case study utilizing Adler's Individual Psychology in a LECC setting with a group of 14 adolescents who were part of one classroom.

81. Glass, J. S. (1999). The relationship of participation in a low-element challenge course to adolescents' self-reported perceptions of group cohesion. *Dissertation Abstracts International*, 60(06), 1920. (UMI No. 9933841).

ANNOTATION: During recent years there has been an increase in the use of challenge course programs as a method of building teams (Springett, 1987). Although participation in these activities is growing, research in this area remains limited (Johnson, 1992). There is a need for studies to further investigate the use of challenge course programs and examine possible outcomes of their implementation. One of the primary factors in the development of a group is the idea of cohesiveness (Griffin & Camp; Pennscott, 1991). A setting in which group cohesion is desired is with challenge courses (Davis, Ray, & Sayles, 1995). The use of outdoor activities as a team-building technique has become increasingly popular (Springett, 1987). Generally, participants who have been removed from their normal social context engage in a number of physical activities that often are not directly related to the group's primary purpose, with the aim of attaining new goals,

both as individuals and as a group (Martin, Camp; Davids, 1995). The label challenge course; has been used to encompass a wide array of programs used with diverse populations. For the purposes of this study, the term was used to describe a low-element (close to the ground) experiential program designed for groups rather than individuals. These group exercises require participants to share responsibility and to solve problems as a team. Successful solutions to these problems depend upon the extent to which group members cooperate, trust and communicate with one another. In addition, these group exercises impart lessons, which participants will later apply to problems in their personal lives (Harris, Mealy, Matthews, Lucas, Camp; Moczygemba, 1993). A review of related literature provided no study that investigated whether one-day low-element challenge course programs increased the perception of group cohesion among adolescents ages 11 to 14. This research was designed to measure the perception of group cohesion among adolescents in this age range who participated in a low-element challenge course experience. The variables of gender, race, age, and being labeled; at risk; were included to determine their effect on the outcome of the study. With limited amounts of previous research in this field, this study sought to broaden the knowledge about the impact of challenge course programs, and add credibility to activities, which have long claimed to produce favorable results. This study revealed that participating in a low-element challenge course program did increase perceptions of group cohesion among adolescents 11 and 14 years of age. Furthermore the study showed that the variables of gender, race, age and being labeled at risk; had no significant effect on the results. This research provided an instrument created specifically for use in measuring perceptions of group cohesion among adolescents

82. Goldenberg, M. A., Nesbitt, G.M., Klenosky, D.B., O'Leary, J. T., & Templin, T. J. (1998). An introduction to ropes course and team challenge programs. *National Intramural and Recreational Sports Association Journal*, 2(2), 42-47.

ANNOTATION: The authors discuss the potential use of ropes courses for staff and student development. A brief explanation of experiential education, an overview of the ropes course experience; what it is and how it works, and the benefits derived from a ropes course experience are discussed.

83. Greene, S. S. (1991). The use of a family ropes course experience in conjunction with diabetes camp: Can the family and the adolescent benefit? *Dissertation Abstracts International*, 52(09B), 4975. (UMI NO. AAI9206286).

ANNOTATION: Families and adolescents burdened with the chronic illness of diabetes face many potential pitfalls that if not adequately addressed, could lead to long-term medical complications and/or shortened life. This study was an early intervention program for adolescents with diabetes and their families addressing patterns of interaction and family structure influencing diabetes management and family functioning. The study involved the teenager with diabetes and their parents participating in two full days of Ropes course activities. The experience followed the adolescents' participation in 1990 "The New Mexico Camp For Kids With Diabetes." Four families were involved in a ropes course experience, four weeks following the camp. The subjects were individuals

and families struggling with diabetes. The individual family members were administered the Family Environment Scale (FES, Moos, 1986) three different times. Checklists regarding medical management and logs with observational data were collected throughout the two days of activities. The adolescents also completed the Diabetes Adjustment Scale (DAS, Sullivan, 1979) at the same time they and their family members completed the FES. A control group of four families whose adolescents also participated in the Diabetes Camp, but did not participate in the Ropes course, were administered all the same scales at the same times. The DAS was used to assess the adolescent's adjustment to diabetes over time (Pre-, Post-, Follow-up) and between groups (Ropes vs. No Ropes). Four of the ten FES scales (Cohesion, Independence, Conflict, Control) were used to assess family members' perceptions. There was no statistically significant difference found with either of the groups; however important degrees of variance for Time of testing and/or for Family Member responding were noted for the Cohesion, Independence, and Control subscales. Anecdotal evidence indicated that the Ropes course experience was a provocative and powerful tool for uncovering and addressing problematic family dynamics. Respondents reported favorable changes as a result of the experience and suggested longer duration and increased contact with the facilitators. The family and the adolescent affect each other in subtle yet undeniable ways. This study attempted to address dysfunctional and potentially lethal patterns of interaction and structure, and warrants further investigation into other possible applications of adventure experiences for families with chronic illness.

84. Harris, K. & Barbee, R. (1999). An empirical evaluation of experience-based learning: A ropes course illustration. *American Journal of Agricultural Economics*, 81(5) 1311-1312.

ANNOTATION: This paper draws on empirical evidence to measure the impact of using corporate-like outdoor-based team training to enhance the effectiveness of student groups and teach team player skills. Results indicate that outdoor-team activities had greater effects and impacts on student behaviors and learning than in-class team activities.

85. Kanters, M. A., Bristol, D. G. & Attarian, A. (2002). The Effects of Outdoor Experiential Training on Perceptions of College Stress. *Journal of Experiential Education*, 25(2), 257-267.

ANNOTATION: Presents a study that examined the effect of a one-day Outdoor Experiential Training (OET) experience on graduate students' perception of stress. Includes a background on the impact of the changing environment of college, analysis of social support functions, and information on OET programs.

86. Kelly, S. A. (1996). The effects of a corporate adventure training experience on group dynamics and individual self-actualization of middle-management professionals. *Dissertation Abstracts International*, 57(4B), 2921. (UMI No. 9625743).

ANNOTATION: Adventure programming has been utilized in the corporate world for training and team building. The focus of this study was to examine the effects of a 2-day corporate Adventure Training program on the group and individual functioning of middle-level managers in a Mid-western manufacturing company. The training utilized ropes course and group activities to develop teamwork and increase group functioning. A work team consisting of 34 individuals, who were divided into three groups, participated in the training. A control group of 12 individuals was utilized for comparison. Variables of interest included group functioning and self-actualization. Group functioning was measured with the Work Environment Scale (WES) (Moos, 1994) and the Team Development Inventory (TDI) (Bronson, 1990). Self-actualization was measured with the Personal Orientation Inventory (POI) (Shostrom, 1974). A pretest-posttest design was utilized. The pretest occurred approximately 1 month prior to the training. The posttest took place approximately 2 months after the training. Independent sample t tests were performed on the change scores between the control and experimental groups. Statistical significance was not reached at the .05 level on any of the measures. Based on this research, no claims that the treatment increased group functioning or self-actualization as measured by these instruments could be made.

87. Kilty, K. M. (2000). A study of cohesion in women's sports teams using adventure programming. *Dissertation Abstracts International*, 61(03B), 1696. (UMI NO. AA19965676).

ANNOTATION: Coaches and athletes generally agree that team cohesion is essential for successful performance. A number of teambuilding programs have been proposed and introduced in team sports, one of which is adventure programming. This dissertation presents a three-study examination of cohesion in women's collegiate sports teams using adventure programming. The first study identified changes in cohesion with regard to four different applications of adventure programs using a pre/post research design. The second study investigated college female athlete's (N =128) perceptions of adventure programming with relevance to personal development and transference to sport. An open-ended survey created specifically for this research was used. The third study explored changes in cohesion using the Sport Adventure Teambuilding Model using a repeated measure design. The Sport Adventure Teambuilding Model, an adaptation of a corporate teambuilding and an experiential learning model for adult learners was informed by results from the first two studies. The overall objective of the three studies was to explore changes in cohesion in response to a sport and gender specific, adventure teambuilding model. The results from the first study suggested that adventure programs that last longer than one day, incorporate the use of a Full Value Commitment, and utilize partner climbs and peer belaying on the high ropes course have the strongest impact on cohesion. Findings from the second study acknowledge the primacy of relationship in women's development as being influential in explaining perceptions of the adventure experience. Female athletes identified increased feelings of trust and mutuality and the ability to communicate more assertively with teammates, as well as realizing potential goals as being valuable consequences of participating in the adventure program. The results of study three suggest a positive relationship between the Sport Adventure Team

Building Model and cohesion. Converging evidence from the three studies suggests that consideration of the unique characteristics and needs of each team, particularly with regard to gender, may prove beneficial in the development, design and assessment of teambuilding interventions.

88. Kopf, D. M. (1996). The effects of activity sequencing on challenge course group development, *Dissertation Abstracts International*, 58(03B), 1536. (UMI NO. AAI9725912).

ANNOTATION: In the rapidly expanding field of adventure-based therapy, group development has long been recognized as a cornerstone for success. One of the critical factors considered important by most theorists for successful group development is sequencing, or the order in which activities are presented to participants. By sequentially ordering events so that they are successively more challenging, adventure-based intervention theorists agree that group development is facilitated. However, this theory, like many in this field, has not been experimentally tested. The current study seeks to investigate the relationship between group development on a challenge course and sequencing of activities. In a typical challenge course, activities can be divided into four stages: orientation, team activities, advanced team activities, and termination. Each is designed to encourage the development of different factors associated with successful group development. If sequencing is as crucial as hypothesized, then altering the sequence of activities should have a measurable impact on the development of groups as they progress through a challenge course. To explore this hypothesis, three experimental groups proceeded through a challenge course. Each experimental condition progressed through a normally ordered challenge course sequence, but had a different stage omitted. Only the control condition groups participated in all four stages. Using the Expressiveness, Anger/Aggression, and Order/Organization subscales from the Group Environment Questionnaire (Moos, 1994) and the Engagement and Avoidance dimensions from the Group Climate Questionnaire Short Form (MacKenzie, 1983), 12 planned comparisons were made between the different experimental conditions to see where differences lay. Preliminary analyses indicate there were no differences based on ethnicity, age or gender on the variables of interest. Primary results indicate that the only significant differences occurred on the experimental condition that did not participate in stage two activities, those designed to develop communication, teamwork and cooperation. These groups scored higher on the Order/Organization scale--opposite of what was hypothesized. No other experimental conditions showed significant differences on any of the other measures despite having skipped various activities designed to develop those qualities. This finding suggests that sequencing may not be as critical for successful group development on challenge courses as is currently hypothesized. One function of a challenge course experience is to encourage or enhance the characteristics associated with highly functioning teams. Team building is an all-encompassing term that includes a number of variables, all of which can be addressed through participation in challenge course activities. Most team building programs are designed to develop new problem solving skills, promote risk-taking, build working relationships, assist in setting goals, encourage cooperation and collaboration, enhance leadership and communication

skills, and encourage creative thinking, and cultivate trust. The following studies offer insight into the use of challenge courses as effective mediums for team development.

89. Meyer, B. B. (2000). The ropes and challenge course: A quasi-experimental examination. *Perceptual and Motor Skills*, 90(3), 1249-1257.

ANNOTATION: In answering the call for empirical documentation of the effect of ropes and challenge course participation on the psychosocial function and sport performance of athletes and teams, exploratory studies have identified post course changes in group cohesion and approaches to sport competition. The purpose of the current study was to utilize a pretest-posttest comparison group design to expand knowledge in this area. 35 members of a girls' high school tennis team participated. The 16 individuals who participated in a preseason program and the 19 individuals who did not comprised the treatment and comparison groups, respectively. Team members completed the Group Environment Questionnaire and the Sport Orientation Questionnaire four days prior to and two days after the course experience. A series of 2 x 2 analyses of variance, (group x time) run on each of the scales, gave a significant group x time interaction on one social cohesion scale but none for scores on the Sport Orientation Questionnaire. The findings are discussed in relation to research and the implementation of these programs with athletes.

90. Miller, D. J. (1997). The impact of low ropes course training on team development. *Dissertation Abstracts International*, 58(10A), 3993. (UMI No. AAI9810989).

ANNOTATION: A low ropes course is one type of facility used in conducting experiential education. Experiential education is similar to and/or synonymous with experiential learning, action learning, outdoor training, and adventure based learning. For the purposes of this study, they will be used interchangeably. Experiential learning is a powerful and exciting methodology used in education, counseling, training, therapy, and team development by organizations ranging from elementary schools to Fortune 100 companies. Providers and participants alike feel good about what they experience in experiential education. Testimonial and anecdotal evidence claim that experiential training is valid and reliable (Priest, Attarian, and Schubert, 1993). However, this is not enough to sustain and improve on the methodology. Much greater insight is needed to determine the best approaches to use and how much and often it should be used. The present study investigates how experiential team building conducted on a low ropes course affects team development. It was hypothesized that a 3 hour experiential training exercise would affect team development as measured by both the Horizontal Team Member Exchange II (HMX-2) and Team Development Inventory (TDI) instruments. The subjects were 127 undergraduate students assigned to either a control or experimental group. The experimental group received a 3 hour experiential training curriculum designed to enhance their teamwork skills. Results showed significantly positive increases in team development for the experimental group on both instruments. The control group results showed no significant change in team development on either instrument. These results and suggestions for future research on team development are discussed.

91. Moorefield, D. L. (1994). A comparative study of experiential learning utilizing indoor-centered training and outdoor-centered training. *Dissertation Abstracts International*, 55(6A), 1479. (UMI No. AAI9428317).

ANNOTATION: This quasi-experimental study was conducted using work teams from a north Texas corporation in an attempt to determine differences in behavioral measures that relate to team building among participants in a 4-hour outdoor experiential session and a 4-hour indoor experiential training session. The behavioral measures included group awareness, group effectiveness, locus of control, interpersonal communication, and self-esteem. The instrument was designed by researchers at the University of Wisconsin-Whitewater and was adapted for use in this study. Demographic data were obtained to note the similarities and differences of the teams, and hypotheses testing were accomplished using one-way analysis of covariance. The sample (n = 41) consisted of 21 males and 20 females, most of who were business professionals with formal training in computer technology and education. Hypotheses were tested at the 0.01 significance level. The results indicated that there were no significant differences between an outdoor-training session and two indoor-training sessions on any of the five variables: group awareness, group effectiveness, locus of control, interpersonal communication, and self-esteem.

92. Morris, E. K. (1987, Fall). Utilizing a ropes course in staff orientation. *National Intramural and Recreational Sport Association Journal*, 40-41.

ANNOTATION: This article describes a three-day orientation program for campus recreation staff. One day is dedicated to develop group cohesiveness, self-confidence, communication and trust among staff. Ropes course elements are described and potential outcomes are explained.

93. Munns, K. M. (1995). The effects of team-building interventions. *Dissertation Abstracts International*, 56(11B), 6436. (UMI No. AAI9536805).

ANNOTATION: A naturalistic field study using an experimental design was conducted to compare the team process and productivity effects of outdoor experiential and traditional team building interventions to a control group. Subjects were eight newly created sales and marketing management teams geographically distributed across the United States. The teams were the result of a major affiliation and restructuring process. All eight teams volunteered for participation in the study. The teams, composed of 10-15 participants, were randomly assigned to one of three types of treatment: a three day outdoor experiential team building intervention, a one day traditional team building intervention or no intervention. There were no differences in team process perception or productivity ratios prior to the interventions. Immediately following and three months after the interventions, participants completed an evaluation form that included objective rating scales and "write-in" responses. At the three month follow-up Campbell and Hallam's Team Development Survey (TDS) was used to measure participant's perception of team process. Productivity was measured using a formula involving budget and

revenue data. ANOVA results indicate that the team building groups were significantly different in a positive direction compared to the control group on information, leadership, team unity, empowerment, conflict resolution and team assessment. When compared to the traditional intervention group, the outdoor experiential group was significantly different in a positive direction for team unity, empowerment, and team assessment. At both the three and six month follow-up, the outdoor experiential group yielded an increasingly positive productivity ratio which added more value to the financial picture of the company than the negative productivity rating yielded by the other groups. At both the three and six month mark, the outdoor experiential group scored higher than the traditional group on each of the evaluation scales and reported more positive changes in team behaviors following the intervention when compared to the traditional intervention group.

94. Nodes, H. A. (1997). Transfer of team participation skills to the workplace via teaching in an outdoor adventure environment. *Dissertation Abstracts International*, 58(03A), 697. (UMI No. AAI9726776).

ANNOTATION: The focus of this inquiry was to investigate and evaluate the concept of "learning by doing" specifically in the area of the experiential outdoor challenge of a "ropes course" and its impact on the transfer of team participation skills to an industrial workplace. The design of this study was qualitative in nature because it is a study of cultural change, from a socially authoritarian to a democratic system. The study will be conducted in the natural settings of the workplace and the outdoor "classroom". It utilizes tacit knowledge as well as propositional knowledge and inductive data analysis to fully describe a setting and make decisions about transferability to other settings.

Purposive sampling was used in this study to maximize variation, to document unique variations that have emerged in adapting to changing conditions, and to work within the available resources and availability of informants. The transfer of training is evaluated as a transfer of skills learned back to the normal work group environment. The sampling plan emerges in an orderly fashion in that a decision was made to sample a new group after the data from the previous group has been analyzed. Each successive group has been chosen to extend information already obtained, to obtain contrasts, or to fill gaps in information. The initial sampling collected data on the training expectations of the Training Group in terms of the skills needed, the degree to which training achieved those expectations, and a measure of the extent to which the content of the training was "learned". Data is analyzed, to focus on those elements that appear to be most salient.

After the analysis of all sets and forms of data it is concluded that the class taught the appropriate skills, participants learned the skills and many participants are in the process of utilizing these skills on the job.

95. Pazmino-Cevallos, M. (2004). The effects of an adventure education experience on team development of K--12 teachers. *Dissertation Abstracts international*, 64(09), 3232. (UMI No. AAT 3103675).

ANNOTATION: A number of team building and developing programs have been introduced to groups in the workplace setting. This dissertation presents a one-day

treatment, examining how team development within a workplace setting is affected using adventure education elements including games, initiatives, low and high ropes course elements. The study had a quasi-experimental design measuring team development using the Team Development Inventory (TDI). There were a total of 61 participants including 29 participants in the control group and 31 participants in the experimental group. For the purposes of this study randomization was not feasible. Both the control and experimental group followed the same six-week time line. Groups were surveyed in two-week increments; the periods were called the pre-test, post-test and follow-up test. The experimental group was surveyed after the treatment in the post-test period. The control group was void of the treatment experience. The overall objective of the study was to explore changes that may have occurred in team development due to the treatment solely comprised of adventure education elements. A MANOVA indicated that the treatment consisting of adventure education produced higher mean scores on the TDI for the experimental group as determined by Wilks' lambda = .292 ($F(1,59)=7.84$; $p=.001$) and the scores of the control group remained constant throughout the three time periods ($p=.05$). It appeared that the observed differences in team development in the experimental group were due to the adventure education experience. Therefore, the activities that comprised the treatment may be viewed as an effective approach to enhancing team development in the workplace setting.

96. Priest, S. (1998). Research update: Physical challenge and the development of trust through corporate adventure training. *Journal of Experiential Education*, (21)1, 31-34.

ANNOTATION: To determine the role that physical aspects of corporate adventure training played in the acquisition of trust, 75 employees from a New Zealand computer company were assigned to one of two groups with varying levels of physical activity or to a control group. Treatment consisted of a 2-day program that included group challenge activities with facilitation. Group one participated in activities, which were physical in nature (wall, nitro crossing, spider's web), while activities for group two were less physical (towers of Hanoi, traffic jam, porcupine progression). The third group acted as the control for the study and received a mix of approaches after the study. The group version of the Interpersonal Trust Inventory was used to measure trust in five subscales. Results indicated that trust was enhanced in the two experimental groups but more so in the more active group.

97. Priest, S. (1996). Developing organizational trust: Comparing the effects of ropes courses and group initiatives. Research Update. *Journal of Experiential Education*, 19(1), 37-39.

ANNOTATION: Among the 156 employees of a Canadian corporation, group initiatives and ropes courses were equally effective at improving overall trust toward their organization. However, the ropes course diminished acceptance of others' ideas, while group initiatives built acceptance. The ropes course enhanced encouragement of others' efforts, while group initiatives did not influence encouragement.

98. Priest, S. & Lesperance, M. A. (1994). Time series trend analysis in corporate team development. *Journal of Experiential Education*, 17(1), 34-39.

ANNOTATION: In two studies, the Team Development Indicator was repeatedly administered to intact work groups participating in intensive 48-hour residential corporate adventure training (CAT) that included classroom lectures, group initiative activities and various follow-up procedures. Results suggested that CAT significantly improved team behaviors in all training groups, but improvements were maintained or increased only in groups that received follow-up support in the workplace.

99. Rapposelli, M. (2003). Levels of team learning through adventure training. *Dissertation Abstracts International*, 64(01A), 84. (UMI No. AAI3077903).

ANNOTATION: This project explored the feasibility of including adventure-based learning as a more regular part of the general curriculum at the University of Delaware, as one avenue to team learning. To this end, a published, validated team learning survey was used, along with interviews, to establish if a team could learn through an adventure training experience. Data generated by these means were expected to provide a framework and rationale for including adventure learning in the discussion of higher education curriculum. Today there is a broad societal need for us to become more skilled at working efficiently in small groups. At the University of Delaware this is being recognized as an issue in undergraduate and adult education. There is a need to better educate the general population in order to prepare them for working in the small group mode that is becoming more prevalent in our society. As someone with extensive experience in adventure education, I recognized the role adventure education could play in addressing this need, especially regarding the cognitive development of the group. There is literature on team learning that suggests that the cognitive development of a group may be improved, thereby increasing the efficacy of that team. There are reasons to believe that adventure education is a variety of team learning, and the kind of cognitive development that occurs in team learning may also occur through adventure education. The purpose of this project was to investigate if team learning did occur as a result of participation in an adventure-training program, and to use the finding as a basis for making recommendations for curriculum. The *Team Learning Survey*, the primary data collection instrument used in this study, was distributed to a group of 27 adult students who participated in a day-long adventure ropes course program. The survey was administered six weeks prior to the program, on the day of the program, and one month after the program. Participant interviews were also conducted to provide richer data on some of the survey topics. Statistical analysis revealed intriguing results. In general, participants reported improved levels of thinking, and ability to take action based on that thinking. There was also a reported improvement in the quality of group discussions. This study explored the potential cognitive outcomes of an adventure training program in order to inform how the University of Delaware may take advantage of this mode of learning to meet its recognized needs. Specific recommendations for curriculum are based on the findings. This paper concludes with recommendations for both the general curriculum at the University of Delaware and some specific University programs that stand to benefit from using adventure education as a route to team learning.

100. Steinfeld, C. (1997). Challenge courses can build strong teams. *Training & Development*, 51(4), 12-14.

ANNOTATION: Focuses on how course work can build strong teams. Requirement for strong individual and team skills; Utilization of exercise programs to challenge the mental capacity of the individual towards leadership roles; Identifies four elements to look for in challenge course programs.

101. Taini, R. (1997, Summer) "If my father met me, would he love me? ": The Amerasian story. *Zip Lines: The Voice for Adventure Education*, 35, 15-21.

ANNOTATION: Relates a teacher's 1989 experiences at the Philippine Refugee Processing Center, using ropes courses as part of the Bon Tot volunteer program to prepare young Amerasian refugees for life in the United States. Describes the funding of basic needs, the campsite, personnel, and activities. Explains processing of activities and debriefings in terms of participants' emotional needs.

102. Williams, J. R. (1995). Bringing personal values to global business: the vanguard management learning expedition. *Dissertation Abstracts International*, 34(02), 479. (UMI No: AAI1376075).

ANNOTATION: The creation of sustainable business practices is imperative if we are to survive in the long term. In July 1995, a three-week learning expedition was conducted to plant the seeds of social and environmental responsibility in thirty international graduate business students from two European schools. The final week of this program was designed and presented by a team comprised of five students from the Master of Arts in Business program at the California Institute of Integral Studies. The expedition is described in the context of adult, experiential, and transformative learning, as well as systems and strategic perspectives relative to other graduate business educational programs. The final week is described in detail including classroom presentations by the design team, guest speakers, site visits, and a day on a ropes course. Leadership of the design team is discussed in terms of human resource management. Final evaluations and costs are also included.

PROFESSIONAL INTEREST & ISSUES

This section offers insight into subject matter that has practical application for challenge course practitioners. The topics presented below include information on the evolution and philosophy of challenge courses, facilitation and processing of activities, program delivery, application of the challenge course to various populations, guidelines for use, and environmental considerations.

103. Annat, M. (1995). Challenge and success: Whose decision is it really? *Journal of Adventure Education and Outdoor Leadership*, 12(1), 23-24.

ANNOTATION: Describes techniques for teachers to use during rock climbing and ropes courses in order to challenge participants to succeed, including validating participants' feelings; explaining expectations of the activity such as safety, maintaining respect for others, and challenging physical and emotional limits; establishing participant goals; and empowering participants to reassess their decision making and course of action.

104. Attarian, A. (1990). Recreation on the ropes. *Parks and Recreation*, 25(7), 30-36+.

ANNOTATION: This informative article provides a general overview of the ropes course experience. History, philosophy, program goals and objectives, design and construction considerations, training staff, risk management, current trends, and relevant issues from the 1988 ropes course symposium are presented and discussed.

105. Aufhauser, K. R. (1998). Challenging paradigms: the role of a wilderness challenge course in the community college, *Dissertation Abstracts International*, 37(01), 26. (UMI NO. AAI1391467).

ANNOTATION: While companies and institutions have used outdoor experiential and adventure education as a method for self-discovery and leadership training for decades, there is a dearth of this kind of opportunity in community colleges in California. Providing this kind of opportunity in the community college forum makes the experience more accessible to an audience often unable to afford more traditional sources. This paper documents the creation of a wilderness challenge course at West Valley College in Saratoga, California. It guides the reader through the writing and defending of the curriculum proposal, the search for funding, the development and execution of the course, and the outcomes for the participants.

106. Baldus, L. & Nelson, O. (1993). *VTAE equity staff development workshops and services—phase II final report*. Wisconsin University-Stout, Menomonie. Center for Vocational, Technical and Adult Education, (ERIC Document Reproduction Services No. ED 358 330).

ANNOTATION: The Phase II Equity Staff Development project was revised in response to a need to develop an equity strategic planning model with a vision statement, goals, and objectives. The Equity Strategic Planning Model was presented to administrators of Wisconsin Vocational, Technical, and Adult Education (VTAE) colleges for their use in district strategic planning. One staff development workshop, featuring the best sex equity practices in the VTAE colleges, was conducted for 27 participants. This working conference was intended to assist colleges in identifying successful programs that promote gender equity issues within colleges and curriculum. Another revision consisted of two Career Challenge train-the-trainer workshops. This experiential training was conducted for 29 persons who directed programs that focused on recruiting women into nontraditional, technical and trade occupations. The course included the following: trust building activities, goal setting, problem solving, peak experiences, and environmental ropes course challenge activities.

107. Bisson, C., Kohut, A. & Sugerman, D. (1998, Summer). Processing [Activities]: The magic teakettle; group journal, a high ropes course element; circle of rope. *Zip Lines: The Voice for Adventure Education*, 36, 57-62.

ANNOTATION: Describes three group-processing activities used with youth or adults in adventure- and experiential-education settings. Includes target group, group size, time and space requirements, activity level, props needed, and instructions for group processing and reflection. Involves stimulating campfire discussion for various purposes, journal writing during a ropes course, and final group closure.

108. Blanchard, C. W. (1992). Experiential Therapy with Troubled Youth: The Ropes Course for Adolescent Inpatients. In G. M. Hanna, (Ed.), *Celebrating Our Tradition Charting Our Future: Proceedings of the 20th, International Conference of the Association for Experiential Education* (pp. 137-143). Boulder, CO: Association for Experiential Education.

ANNOTATION: This paper provides information about conducting adventure-based counseling using a ropes course with adolescent psychiatric inpatients. Active learning in the process of therapy is widely accepted, but it is not clear how the complex nature of that relationship works and how programs should be structured to facilitate change. Theoretical foundations of experiential therapy can be traced to both Gestalt and cognitive therapies. Gestalt therapy stresses the link between behavior and emotion while cognitive therapy involves changing thinking to change behavior. Important considerations in establishing an institutional ropes therapy program include patient selection and contraindications, parent education and consent, staff facilitators and training, and safety. Keys to effective therapy include integrating experiential therapy into treatment and training and addressing the competence of experiential therapy staff.

Group session begins with individual goal setting, a structured exercise in which each patient makes a commitment to a specific personal goal (for the day) and to a group goal. An essential component of experiential group learning is processing the experience of each member and interactions among members to provide an opportunity for personal enrichment and change that otherwise might not take place. Documentation about each person's participation in the ropes group should include a detailed summary of what took place with that individual during the ropes course. Experiential education as a major adjunctive mode of therapy for adolescent patients is gaining increasing acceptance for positive behavior change.

109. Bunting, C. J. (1985). *The History and Philosophy of Challenge Courses. Venture Dynamics: The challenge course as an educational tool.* College Station, Texas A&M University: Texas A&M University Press.

ANNOTATION: This article describes the development of challenge courses and how they have evolved over time. Originally constructed in the late 1800's as a training tool for the French navy, challenge courses have become a standard in today's adventure recreation camps. Outward Bound has used challenge courses in most all of their programs increasing the popularity of the challenge course. This article also explains the philosophy of challenge courses and why they were originally designed. Physical as well as character and mental challenges are built upon with the use of challenge courses. An illustrated model is used to describe the sequence of events within each initiative of the challenge course.

110. Carns, A. W., Carns, M. R. & Holland, J. (2001, Spring). Learning the ropes: Challenges for change. *TCA Journal*. Special Issue, 29(1), 66-71.

ANNOTATION: Discusses the historical background, theoretical dimensions, uses, and implications of adventure-based counseling and challenge course experiences. Developed during WWII, Outward Bound spread throughout the world and came to the US in 1962. Theoretical orientations such as behavior therapy (Stehno, 1986) and learning theory (Stich and Gaylor, 1983) lend themselves to adventure-based counseling. Currently, the adventure-based approach is being used with adolescents with substance abuse and addictions concerns, and with adolescent females to facilitate identity formation. Clients for whom Outward Bound is contraindicated include acutely psychotic clients, extremely manic clients, clients undergoing a course of electroconvulsive therapy, and those with medical or medication risks.

111. Clemmensen, B. (2002). An exploration of differences and perceptions of difference between male and female challenge course instructors. *Journal of Experiential Education*, 25(1), 214-220.

ANNOTATION: This article explores and intercepts data that expresses difference, and perception of difference, between male and female challenge course instructors. Indication of teaching and facilitation skills; Information on role modeling and facilitating growth; Archetypes for women.

112. Covell, G. (1991). Further portable adventure programme elements. *Journal of Adventure Education and Outdoor Leadership*, 8(3), VI-VIII.

ANNOTATION: Methods and goals are described for several activities to be used in ropes courses. Calculation of loads for suspended ropes used in the exercises and selection of rope based on type of activity and number of people on the rope are presented. Contains several diagrams and photographs.

113. DuFrene, D. D., Sharbrough, W., Clipson, T. & McCall, M. (1999). Bringing outdoor challenge education inside the business communication classroom. *Business Communication Quarterly* 62(3), 24-36.

ANNOTATION: Describes present-day outdoor challenge education and briefly notes its history. Argues that it provides a framework for organizations to improve teamwork, problem solving, risk-taking, self-esteem, and interpersonal communication. Describes how advantages of outdoor education can be maintained when a program goes indoors. Notes advantages of indoor adaptations and offers guidelines for three such action experiences used in business-communication classes.

114. Fischesser, M. (1991). The evolution of the ropes course. *Adolescent Counselor*, 4(2), 23,43.

ANNOTATION: This article provides an overview of the history of ropes courses in the United States and their applications to a variety of populations.

115. Fischesser, M. (Ed.). (1991). *Proceedings from the 3rd ropes course symposium*, November 14-17, 1991, Ashland, MA.

ANNOTATION: Contents include papers on: ropes course force analysis, back-up systems, accessibility, ropes course related injuries and accidents, trees and the ropes course, challenge course standards, wood preservatives, results of the 1991 ropes course vendors survey, legal liability for defective trees, failure of cables and clips, equipment issues, repair of wood structures, planning a ropes course, and cardiovascular stress in ropes course participation.

116. Fischesser, M. (Ed.). (1990). *Proceedings from the 2nd ropes course symposium*, May 18-20, 1990, Pecos, NM.

ANNOTATION: Various programs were presented during this conference and focused on risk management (managing ropes course safety systems, conducting safety reviews, insurance issues), professional issues (ethics and facility based adventure education), design and construction (the important role of trees in ropes courses, considerations for using pole-line hardware, zip wire physics, ropes, pulleys, etc., cable stress on high elements, ropes courses and lightning, new ideas, designs, ropes physics), accessibility, and the ropes course experience.

117. Fischesser, M. (Ed.). (1988). *Proceedings from the 1988 ropes course symposium*, March 3-6, 1990, Morganton, NC.

ANNOTATION: This historic symposium, held at the North Carolina Outward Bound School was forerunner to the Association for Challenge Course Technology (ACCT). Twenty six experiential educators met to discuss a variety of topics which included philosophy of ropes course use, current ropes course issues, physiological and psychological stress, safety policies, training facilitators, accreditation of builders, operators, trainers and peer reviews, equipment and construction techniques, tree care, builder qualifications and practices. Summaries are presented for each of these areas.

118. Fullerton, J. & Davis, S. G. (1996). Arriba! Building teamwork and a ropes course in Mexico. In: *Proceedings of the 1995 International Conference on Outdoor Recreation and Education*; see RC 020 917.

ANNOTATION: A staff member of the Outdoor Adventures Program at the University of Nebraska-Lincoln relates his experience in supervising the construction of the first low ropes course in Yucatan, Mexico. During 1994, two staff members visited Yucatan to explore trip possibilities for the program and to inquire about a future conference location. The site selected for the course was Hacienda Tabi, a former sugar hacienda that covers nearly 40,000 acres. Coca-Cola of Yucatan provided funding for the project and members of the Mexican Conservation Corps provided labor. During construction, student volunteers were taught about the elements that were being built, the philosophy of team building activities, and the history and development of group challenge activities in the United States. Using only hand tools, the volunteers cleared and prepared the site in 2 weeks. It became necessary to order some materials from the United States, and once the needed materials arrived, volunteers worked another 5 days to finish the project. The student volunteers were trained in safety, spotting, site management, and group dynamics.

119. Gillis, H. L. & Thomsen, D. (1996). A research update of adventure therapy (1992-1995): Challenge activities and ropes courses, wilderness expeditions, and residential camping programs. In *3rd Coalition for Education in the Outdoors Research Symposium Proceedings* Bradford Woods, IN.

ANNOTATION: In 1992, a review of research in adventure therapy offered a perspective that utilized work in psychotherapy as a lens to view the current state of the field. From that review, recommendations were made to gain respect within the field of traditional mental health. This update examines the 1992 recommendations and updates them based on recent (1992-95) adventure therapy research. Most of this research was carried out with high-risk or delinquent adolescents or psychiatric patients engaged in adventure-based group therapy, wilderness expeditions, or long-term residential camping programs. Several conclusions are reached. First, the field of adventure therapy must create a "collective document" that addresses its accomplishments and effectiveness. Second, the "clinically significant events" of adventure therapy must be examined through a massive survey of consumers of its services in order to achieve credibility with

mental health professionals and those who provide financial support. Finally, the time is ripe with possibilities for researchers, and several research needs and opportunities are explored. Contains 31 references.

120. Haras, K.S. (2003). An exploration of meaningful involvement in ropes course programs. *Dissertation Abstracts International* 64(12A), 4621, (UMI No. AAT3117490).

ANNOTATION: Ropes course programs provide numerous benefits but what makes programs effective has been unclear. The purpose of the study was to: (1) determine if there was a measurable difference in meaningful involvement between the Challenge by Choice (CbC) and Inviting Optimum Participation (IOP) approaches to ropes course program design and delivery, and (2) identify and compare the linkages among program attributes, outcomes, and values with each approach. The study involved 360 young adolescents (ages 10-15) who took part in full-day ropes course programs provided by one of four organizations in Ontario, Canada. Participants included 172 boys and 188 girls. The average age was 12.7 years and 47% had previous ropes course program experience. Participants completed either: (1) an experience sampling survey related to meaningful involvement or (2) a means-end laddering survey related to program attributes, outcomes, and values. The experience sampling data were subjected to multivariate analysis of variance (MANOVA). The dependent variables were meaningful involvement during high (belayed) activities and low (non-belayed) activities. The independent variables were program type, sex, and ropes course experience. Program type had a significant effect ($\lambda(3, 158) = 0.937$, $p < 0.05$) for meaningful involvement experienced during high activities. Meaningful involvement consists of the areas engagement, choice, and view of self. Follow-up ANOVAs indicated that choice ($F(1, 160) = 6.127$, $p < 0.05$) was significantly higher in IOP programs. Differences between the programs in engagement and view of self were not significant. There was no significant effect for low activities. Means-end analysis was used to identify linkages among program attributes, outcomes, and values. Responses were organized into 11 Hierarchical Value Maps. Participants in IOP programs identified different linkages than participants in CbC programs. IOP program participants were more likely to mention the attribute low activities and the outcome group efficacy as significant and less likely to mention the outcome anxiety. CbC participants were less likely to mention low activities and group efficacy and more likely to mention anxiety and the value excitement. These findings indicate that ropes course program design and delivery can be manipulated to provide specific benefits and facilitate participant experiences of meaningful involvement.

121. Holyfield, L. C. (1995). Generating excitement: organizational and social psychological dynamics of adventure. *Dissertation Abstracts International*, 56(10A), 4161. (UMI No. AAI9604047).

ANNOTATION: Adventurous outdoor leisure is perceived as those recreational activities that pose either a real or perceived threat to participants. In commercial settings the risks are minimized but for novice consumers adventure often retains the emotional

component, which comes with navigating major white water or lunging from a high platform for a trapeze. This study examines the emotional components of adventure leisure as they are both produced and consumed in two commercial settings, i.e., ropes course participation and white water rafting. Expressed emotions can be, and often are, subject to acts of management. In this dissertation, organizational attempts to orchestrate the perceived emotions of consumers are documented wherein companies frame activities using rehearsed scripts, props, narratives, and feeling rules. Organizational control over emotions is potentially powerful amidst adventure pursuits wherein negative emotions such as fear or regret are transformed via situational cues into positive emotional outcomes such as excitement and triumph. However, because emotions are physiologically grounded and therefore felt organizational attempts to orchestrate consumers emotions are sometimes limited. Data in this study draws upon the process of adventure to examine how felt emotions merge with feeling rules via interaction within the adventure setting. Consequences for both workers and consumers are considered. Theoretical implications for the sociology of emotions and culture are discussed.

122. Johnson, J. A. (1992). Adventure therapy: The ropes course wilderness connection. *Therapeutic Recreation Journal*, 22(3), 17-26.

ANNOTATION: Ropes courses and wilderness challenge programs are interventions employed in a clinical and other settings with psychiatric patients and among adolescents with behavioral and social problems. The two approaches have some characteristics in common including supporting theory and group norms.

123. Johnson, K. (1999). Toward green challenge courses. *Journal of Experiential Education*, 22(3), 149-153.

ANNOTATION: A variety of considerations and practices are presented to reduce the potential environmental impacts created through the construction and use of challenge courses. Information is presented on site selection and development, local ecology, type of structure (poles vs. trees), construction techniques (wrapping vs. through bolting), and vehicle access. The author also introduces the idea of "systems thinking" as a way challenge course providers can benefit the environment through a symbiotic relationship.

124. Long, M. J. (1993). Adventure education: a curriculum designed for middle school physical education programs. *Dissertation Abstracts International*, 54(03A), 860. (UMI No. AAI9320832).

ANNOTATION: The purpose of this study was to gather, compile, formulate, and prepare materials, including lesson plans for adventure education, which will serve as a curriculum and instructional manual for instructors who teach physical education at the middle school level. It was felt that such a program would constitute a valuable contribution to the intellectual, psychological, physiological, and social development of the students if included in the traditional curriculum. The manual consists of six levels. Each level contains a three-week unit. Each three-week unit contains daily lesson plans, using a standard of five days per week. Each daily lesson plan includes the following

information: objectives (cognitive, psychomotor, and affective); activity level; equipment needs; warm-ups; description of warm-ups; activities; activity safety concerns; description of activities; and suggestions. The manual is divided into Section 1 and Section 2. Section 1 includes Levels 1, 2, and 3. Section 2 includes Levels 4, 5, and 6. A necessary distinction was made between Section 1 and Section 2 because of differentiated levels of requisite instructor expertise in adventure education and the need for appropriate facilities in Section 2. Section 1 of the Adventure Education Manual includes games, individual/group trust activities, and group initiatives. Section 2 includes activities pertaining to the ropes course. In conclusion, research has been conducted regarding the physical, social, emotional, and psychological benefits and learning outcomes of adventure education. However, adventure education continues to be absent from many middle school curricula. Perhaps the only way to change this tendency is to continue to educate both the public and private sectors concerning the benefits and learning outcomes associated with adventure education.

125. Long, T., Lindenmeier, D. & Robertson, T. (2003, September). Challenges on the challenge course. *Parks and Recreation*, 38(9), 82-87.

ANNOTATION: The authors present and discuss the factors providers need to consider when helping individuals discover the benefits of participating in challenge course activities. Some of the factors presented include the presentation of goals and expectations, manipulating activities to achieve expected benefits, consideration to environments (high or low events and activities), group and individual interaction, processing the experience, and other considerations.

126. Martin, K. & Fulton, B. (March/April, 1999). Ropes courses for all. *Camping Magazine*, 72, 25.

ANNOTATION: This article focuses on developing low and high ropes courses for campers. The authors present details on sixteen modifications to low ropes course elements that are being used or developed for use in camps.

127. McDonald, R. G. & Howe, C. Z. (1989). Challenge/initiative recreation programs as a treatment for low self-concept children. *Journal of Leisure Research*, (2)3, 242-253.

ANNOTATION: An investigation was initiated to determine if challenge/initiative games, conducted in an existing recreation setting for one hour daily, could be an effective treatment to enhance the self-concept of abused children living in a residential care facility. Over 28 consecutive days, a treatment group (N = 18) of abused children received one hour of challenge/initiative games ("New," cooperative, or adventure games inclusive of a debriefing segment). A control group (N = 20) of abused children participated for one hour daily in a traditional recreational (playground, diversionary, or competitive) games program. The results indicated that challenge/initiative games significantly enhanced four out of six components of self-concept in abused children, as measured by the Piers-Harris Children's Self Concept Scale. Based on the results of this

study, recreation professionals should consider incorporating challenge/initiative games as a part of their structured programs.

128. Moote, G. T. & Wodarski, J. S. (1997). The acquisition of life skills through adventure-based activities and programs: A review of the literature. *Adolescence*, 32(125), 143-167.

ANNOTATION: This paper discusses the definition of at-risk elementary and secondary school students and identifies incidence and prevalence of various related stressors and behaviors. Assessment issues for at-risk students are highlighted. Theoretical issues that pertain to early adolescence and educational-adventure-based programs approaches that have been used to intervene or assist in risk remediation for the identified student are addressed. A comparison between the adventure-based programs and the more traditional life skills approach is presented. Empirical evaluations and limitations of adventure programming and adventure-based counseling as well as practice implications and suggestions for further research are reviewed.

129. Parker, M. W. (1992). Impact of adventure interventions on traditional counseling interventions. *Dissertation Abstracts International*, 53(09B), 4964. (UMI No. AAI9238474).

ANNOTATION: The use of the outdoors and adventure activities have long been the core of groups such as Outward Bound, Boy and Girl Scouts and others. In the past ten years these interventions have also begun to expand into the field of counseling. Current research in the field of adventure interventions has been plagued by design difficulties, brief interventions, small subject samples, inadequate follow-up, and other methodological problems. The present study evaluated the impact of adventure interventions as an adjunct to traditional counseling interventions. Participants were eighty-four adolescent clients from two community-based counseling agencies or residents from two boys homes who were all receiving services due to a variety of behavioral and adjustment difficulties. During the nine-week intervention period, counseling agency clients received either their regular on-going counseling strategies or these strategies plus a day-long ropes course trip and one day rock climbing. As comparisons, boy's home residents were assigned to either a non-intervention control group or a group, which received only the ropes course and rock climbing trips. Participants were measured on the dimensions of locus of control, self-esteem, and behavioral improvement through pretests, posttests and at a six-month follow-up. The results indicate little support for the contention that adventure interventions significantly enhance traditional counseling approaches. A discussion of these results and recommendations for future research are included.

130. Priest, S. (1996). Research update: The effect of two different debriefing approaches on developing self-confidence. *Journal of Experiential Education*, 19(1), 40-42.

ANNOTATION: For 72 new workers in a British automotive corporation, self-confidence was enhanced by participation in a ropes course. While general debriefing (addressing a wide variety of human behaviors) and specific debriefing (centered solely on self-confidence) contributed to these improvements, the benefits that accrued from specific debriefing were greater than those from general debriefing.

131. Priest, S. (1995). Challenge course facilitator competence: A consensus. *Journal of Experiential Education*, 18(3), 158-160.

ANNOTATION: A survey of trainers of challenge course facilitators resulted in a list of general competencies to be included in facilitator training. Includes technical skills involving challenge or ropes courses, group initiatives and low ropes, safety and environmental issues, and program administration. Facilitation skills involve recreational, educational, developmental, and therapeutic competencies.

132. Priest, S. (1992). Factor exploration and confirmation for the dimensions of an adventure experience. *Journal of Leisure Research* 24(2), 127-140.

ANNOTATION: Notes that behavior in an adventure recreation experience is based on the perception of risk and competence. Presents a study, which performs a pair of factor analyses on the responses of first and second year subjects engaged in a ropes course program in order to explore and confirm factor structure of perceived risk and perceived competence. Subjects were responding to the Dimensions of an Adventure Experience survey: a semantic differential of 24 bipolar adjectives concerned with perceptual changes in risk and competence that may occur from participating in adventure experiences. The exploratory analysis formed three factors related to risk (fear, eustress and distress) and two factors related to competence (ability and attitude). The confirmatory analysis formed the same factors with slightly different loading coefficients. From these findings, a combination of several theoretical models was achieved.

133. Richardson, E. D. (1999). Adventure-based therapy and self-efficacy theory: test of a treatment model for late adolescents with depressive symptomatology, *Dissertation Abstracts International*, 63(09B), 4384. (UMI NO. AAI3065456).

ANNOTATION: The primary objective of the current study was to propose and test a model for conceptualizing changes that occur as a result of adventure-based therapy (ABT), using self-efficacy theory as the conceptual foundation. Other objectives were to test the effects of ABT on depressive symptomatology and related psychosocial variables (e.g., anxiety, self-esteem). One-hundred and nine college freshmen participated in the screening procedure. Subjects who indicated mild to severe depressive symptomatology on a self-report measure and did not report past history of trauma were invited to participate in the study. Forty-one individuals were randomly assigned to either the adventure-based therapy (ABT) condition (i.e., a one-day ropes course experience) or to a placebo-control condition (i.e., an extended walk outdoors in a group). Subjects were divided into two cohorts, each with treatment and control groups, because of safety requirements related to capacity on the ropes course. Self-report instruments were

completed immediately prior to participation (i.e., pretest), immediately following participation (i.e., posttest), and at 2-weeks and 2-months post participation. Primary multivariate analyses of variance performed on state and trait dependent measures did not yield statistically significant interactions; therefore, results indicated that ABT may not significantly decrease depressive and anxious symptomatology in late adolescents with depressive symptomatology. However, data were further analyzed for exploration in light of the generally low statistical power and group differences suggested by graphic displays of data. Exploratory analyses suggested that ABT may increase efficacy for coping with anxiety created by novel situations and efficacy for working and problem-solving in a group. It was therefore suggested that self-efficacy theory warrants further consideration as a theoretical framework for explaining changes that occur as a result of ABT. In addition, exploratory analyses suggested that ABT may also reduce anxiety and general psychological distress. Finally, depressive symptomatology decreased for individuals in the ABT treatment group and the placebo-control group according to exploratory analyses; however, there were no differences between groups. Further exploration of the potential effects of ABT on depressive and anxious symptomatology and general psychological distress is warranted.

134. Rohnke, K. (1999). Ropes courses: A constructed adventure environment. In J. C. Miles & S. Priest (Eds.). *Adventure programming* (pp. 347-352). State College, PA: Venture Publishing, Inc.

ANNOTATION: An overview of the ropes course experience is presented. Topics include the evolution of ropes challenge facilities, low and high ropes course events, indoor courses and the rationale behind ropes courses are presented and discussed.

135. Sproul, S. & Priest, S. (1992, February). The ropes course as an educational tool. *Pathways: The Ontario Journal Of Outdoor Education*, 4, 9-12.

ANNOTATION: Describes numerous benefits of ropes courses including (1) increasing self-esteem; (2) promoting physical fitness; and (3) fostering group cooperation. Traces the history of ropes courses. Emphasizes safety through construction standards for ropes courses outlined in "Safety Practices in Adventure Programming" by Priest and Dixon.

136. Starr, M. (2004). The experience of being a leader during a ropes course program and at work: A heuristic inquiry. *Dissertation Abstracts International* 65(01), 48. (UMI No. AAT3119999).

ANNOTATION: This study explored the question; What is the experience of being a leader during participation in a ropes course program and at work? The ropes course as a training medium provides opportunities for people to engage in challenging activities to improve interpersonal skills. From ten ropes course programs and 130 participants, the researcher purposefully selected thirteen co-researchers who exhibited pre-determined leadership behaviors. Dialogue with each co-researcher provided rich descriptions and metaphors about the experience of being a leader. Using heuristic research methods, the researcher analyzed the data and uncovered redundant themes to better understand the

phenomenon of being a leader. While each experience was unique, the composite encompassed the principles of several leadership theories. The significant meaning revealed was that being a leader was a big responsibility and it provided opportunities to transform and be transformed, which was enjoyable, rewarding and sometimes frustrating. Six major findings emerged from the inquiry. The first related to the concept of leaderless groups and emergent leaders. A leader emerged from each of the leaderless groups that started on the ropes course. The second finding was that the experiences of leading on the ropes course and at work closely mirrored each other. The third finding represented the major difference between being a leader on the ropes course and being a leader at work. The ropes course provided a setting for participants to experience being transformational leaders, without the ramifications of office politics, transactions and economic pressures. The fourth finding was that managing followers was the single most frustrating aspect of the experience of being a leader. All of the frustrations occurred when the values and principles espoused by leaders and followers were not aligned. The fifth finding was that the experience of being a leader was holistic because it encompassed who the individuals were, how they performed in two different settings, what feelings this evoked and what significance it held for them. The sixth finding revealed that trait, style, situational, transformational and visionary leadership theories are not mutually exclusive. The study findings serve as a guide for practitioners to design more meaningful leadership development programs.

137. Sudore, G. M. (1986). Environmental applications of adventure program activities. *Journal of Experiential Education*, 9(1) 34-39.

ANNOTATION: This article suggests ways to adapt 16 games, group initiatives, and ropes course elements to teach environmental concepts.

138. Tate, D. W. & Ellis, G. D. (1997). Effects of facilitation techniques on challenge initiative related outcomes among adolescents receiving mental health services. *Therapeutic Recreation Journal*, 31(2), 92-107.

ANNOTATION: This study examined the effects of three facilitation techniques (adaptive, whole and fixed) on self-efficacy, self-affirmation, and performance of a challenge course initiative among adolescents in mental health facilities. Forty-five adolescents with a variety of clinical diagnoses participated in the study. Research participants were randomly assigned to one of the three training groups: adaptive training, fixed training and whole training. Each group participated in a pre-intervention test of performance, in which they attempted to maneuver across a 25-foot long balance beam as quickly as possible. After the research participants completed the pre-intervention test, they participated in training according to the method to which they were assigned. Following training, participants completed measures of self-efficacy, self-affirmation and a post-intervention performance test. Significant self-efficacy differences between the adaptive and whole training groups, and between the fixed and whole training groups, were found using a Mann-Whitney U test. An ANCOVA, followed with the Bryant-Paulson technique revealed a significant difference on self-affirmation between the adaptive and whole training groups. No significant difference was found in

performance across the three groups. Also, no significant difference was found between the adaptive and fixed groups for any of the variables. The sample mean of the adaptive training group, however, was consistently higher than the fixed training group on all dependent variables.

139. The challenge ropes course. (1993,October) *Parks & Recreation*, 28, 10, pp. 47-48.

ANNOTATION: Reports on the Challenge Ropes Course at Camp Lejeune, North Carolina, Morale, Welfare and Recreation (MWR). Mentions the learning process; program goals; area; and community benefits.

140. Welch, T. R. (1999). Climbing harness fit in kidney transplant recipients. *Wilderness and Environmental Medicine*, 10(1), 3-5.

ANNOTATION: The superficial location of renal transplants places them at risk for traumatic damage. Significant injuries have been reported from automobile seat belts, for example. This study was designed to assess the potential for direct transplant injury from the use of climbing harnesses. Ten patients with kidney transplants were fitted with a variety of climbing harnesses after the locations of their grafts were defined. With the exception of two harnesses in a single patient, all devices came into contact with all transplants. Sports requiring the use of climbing harnesses (e.g., rock climbing, rappelling, and challenge course participation) may be unsafe for recipients of kidney transplants.

141. Whitman, J. P. (1993). Characteristics of adventure programs valued by adolescents in treatment. *Therapeutic Recreation Journal*, 27(1), 44-50.

ANNOTATION: This study identified characteristics of adventure programs valued by adolescents in treatment. Subjects included 11 experts in the field of adventure programming and 207 participants in adventure programs at 12 adolescent treatment programs. The experts, through a modified Delphi process, identified valued program characteristics. Program participants showed their agreement with these items through a questionnaire administered at the conclusion of their program involvement. Participants and experts were significantly in agreement regarding valued characteristics. However, participants did appear, in contrast to experts, to value items related to process more highly than items related to content. Helping/assisting others was the characteristic most valued by participants. Gender and age were significantly related to perceptions of value for several characteristics. Items perceived as more valuable by males related to leadership, risk, and learning from failure. The item perceived as more valuable by females concerned trust. Younger participants rated doing ropes course activities higher than older participants. The study supports that process not just content needs to be considered in staff training and program implementation.

RISK MANAGEMENT

The management of risk is a dynamic process that requires a systematic plan to identify particular hazards and develop strategies to eliminate or minimize their potential to cause injury or death to challenge course participants. The literature presented in this section focuses on standards, safety reviews, construction pitfalls, and other relevant information that should be considered when developing risk management plans for challenge courses.

142. Association for Challenge Course Technology. (2004). *Association for challenge course technology: Challenge course standards* (sixth edition). Martin, MI: Author. 45 pages.

ANNOTATION: A set of standards established by the Association for Challenge Course Technology (ACCT) which details common and recommended practices in challenge course construction, inspection, operation, and ethical guidelines.

143. Covell, G. (1991). Further portable adventure programme elements. *Journal of Adventure Education and Outdoor Leadership*, 8(3), VI-VIII.

ANNOTATION: Describes methods and goals for several activities to be used in ropes courses. Details calculation of loads for suspended ropes used in the exercises and selection of rope based on type of activity and number of people on the rope. Contains several diagrams and photographs.

144. Evans, W. (1996, May/June). Administering safety: Challenge courses and climbing walls. *Camping Magazine*, 68, 39-42.

ANNOTATION: A camp that is establishing a challenge course or climbing wall must ensure program safety. Discusses financial planning, selecting a contractor, adhering to standards for construction, inspections, staff training, screening of participants, and the administrative challenge of implementing and documenting proper actions. Sidebar discusses a study on the effects of modeling in adventure education.

145. Hartley, M. (1992). Questioning tradition: Alternative safety techniques and procedures for ropes course and climbing programs. In G. M. Hanna, (Ed). *Celebrating Our Future: Proceedings of the International Conference of the Association for Experiential Education* (pp. 184-188). Boulder, CO: Association for Experiential Education.

ANNOTATION: This paper examines current standards and procedures used in rope and climbing courses and offers alternatives to standard practices. The techniques and issues covered include belay techniques, belay signals, and the use of the initiative wall. Current techniques are often not the most efficient or even the safest, but they have stood the "test

of time." Departing from standard techniques opens the door for increased safety and liability risks in addition to the criticism of peers. For example, the current method of teaching belaying, a method for securing a hold during climbing, is one that has evolved over the years from the hip belay. Though effective, hip belaying is an exacting technique that offers little room for error. As a result, few climbers or programs use a hip belay. A simpler method of belaying is described and diagramed that is especially suited for non-skilled groups. Standard belay signals can be confusing to learn, especially for non-skill-oriented groups. Traditional signals are listed with simpler alternatives. Other suggestions include an alternative backup knot for the figure 8 knot and a miniature hacksaw for rope cutting. Finally, this paper suggests that using a belay on the initiative wall is a much safer practice than the traditional technique of using only spotters.

146. Jillings, A., Furlong, L., LaRhette, M. & Ryan, B. (1995). *Project Adventure 20 year safety study*. Unpublished manuscript.

ANNOTATION: This safety study follows two previous studies conducted by Project Adventure. The first conducted in 1981 and the second in 1986. The 20 year study differs from the 1981 and 1986 studies in a number of ways. In the current study additional data were gathered including the date and time of accident, accident location (indoors or outdoors), and whether medical attention was required. A total of 1,484 surveys were mailed to Project Adventure affiliated schools, camps, hospitals, municipal centers, universities, outdoor education centers, and other organizations. 604 surveys were returned. Results from the survey are presented and include: accident injury rates (with comparable statistics), type and severity of injuries, and injuries classified by ropes course and group initiative elements. Overall, injury rates were calculated to 4.33 injuries/million hours of participation. Participants in these programs are exposed to rates that are significantly lower than many well-known sports and activities.

147. Klajnscek, R. (1999, Winter). Homegrown courses: Tech talk. *Zip Lines: The Voice for Adventure Education*, 38, 53-55.

ANNOTATION: Home-built adventure-education courses exhibit refreshing creativity but almost always fall short of their potential due to inadequate construction techniques and materials. A ropes course inspector for the adventure education industry discusses the most common mistakes made in home-built ropes courses and how to prevent or fix them.

148. Klajnscek, R. (1998, Fall). Thoughts on designing things to NOT break. *Zip Lines: The Voice for Adventure Education*, 37, 57-58.

ANNOTATION: Explains the aspects of the design and loading of high-ropes courses and other challenge-course equipment. Discusses the engineer's factor of safety, determined by industry standards or the level of risk considered acceptable; definitions of terms for material strength; and the forces involved in loads sustained by belay ropes and cables.

149. Leemon, D. (Ed.). (2002). *Adventure Program Risk Management Report Volume III*. Boulder, CO: Association for Experiential Education.

ANNOTATION: In this report, incidents from both backcountry/wilderness-based and facility-based (e.g., ropes courses, climbing towers, etc.) programming are described.

150. Leemon, D. (Ed.) (1998). *Adventure Program Risk Management Report: 1998 Edition. Narratives and Data from 1991-1997*. Boulder, CO: Association for Experiential Education.

ANNOTATION: The Wilderness Risk Managers Committee (WRMC), a consortium of outdoor schools and organizations, works toward better understanding and management of risks in the wilderness. Among other activities, the WRMC gathers data on incidents and accidents from member organizations and other wilderness-based programs. This book compiles incident data for 1991-97, but most incidents occurred in 1995-97. Section 1 defines terms and provides a theoretical foundation for understanding how accidents happen. "Teaching Safety Awareness" (Tod Schimelpfenig) distinguishes among accident causes and recommends looking at every actual or potential incident as a combination of human and environmental factors. Hazards are listed in the categories of the supervisor, the executive, support staff, governance bodies, client/student admissions, equipment, and educational practices. Section 2 presents database profiles of total hours spent in each program activity, numbers of injuries and illnesses, primary causes of injuries, and injury rates by activity. Section 3 contains narratives of near-miss incidents, or close calls, where safety was compromised but no injury occurred. Narratives include cause, contributing cause, activity, incident description, program analysis, and additional WRMC analysis, and are arranged by activity: camping, cooking, animals and insects, climbing, backpacking and hiking, snow, canoeing, ropes courses, initiative games, transportation and vehicles, illnesses, and participant behavior. Section 4 discusses the need for more consistent data collection and better quality of reporting. An appendix describes the incident reporting project and how to report an incident. Reporting forms are included.

151. Liddle, J. & Stork, (Eds.). (1995). *Adventure Program Risk Management Report-1995 Edition: Narratives And Data From 1989-1990*. Boulder, CO: Association for Experiential Education.

ANNOTATION: This report presents data collected during 1989-90 for the Adventure Program Incident Reporting Project, a joint project between the Wilderness Risk Managers Committee and the Association for Experiential Education. The project provides a means to educate interested parties about the risk management implications of different adventure activities, a comprehensive incident database for use in statistical analysis and trend analysis, and a central reporting forum for incidents in adventure programming. The 55 programs providing data included private and public instructional organizations, psychiatric hospitals, universities, county parks and recreation departments, camps, schools, 4-H programs, and court service programs. A total of 832 injuries and illnesses were reported, of which 433 were deemed serious injuries. Reported

were near-miss situations and injury-producing incidents during initiatives and ropes courses and other adventure activities.

152. Patient Injures Herself on 'Ropes Course': Hospital Asserts 'Assumption of Risk' as Defense. (1999, July). *The Regan Report on Hospital Law*, 40(2), 3.

ANNOTATION: Margaret Allison entered Charter Rivers Hospital, Inc. (Charter) in April of 1992 for treatment for her addiction to prescriptive medicine. Five days after her admission to Charter she was due to participate in a ropes course activity. The ropes course involved patients walking on a rope between three trees and was intended to build trust. The object was for other patients to catch any person who fell, therefore instilling trust among the group. Allison expressed her reservations to Katherine McCall, who was in charge of the activity, stating that she had not led a physical life-style in the past. Allison also spoke about the course with a woman in her seventies as well as a younger patient with back problems. Both patients said they had chosen not to participate. Before the ropes course began, McCall had the group warm up with a game similar to tag. Allison fell on her left knee as soon as she started to run. She informed McCall of the injury, and McCall suggested she sit out the rest of the game. On the way to the ropes course, Allison again expressed concern over participation in the activity. McCall asked her to "try" and assured her that if she fell, the group would catch her. Allison waited until last to attempt the activity. She watched the rest of the patients walk across the rope first. She saw a young man fall and scrape his shin. When it was her turn, she was about four feet from the first tree when she fell. The group was not able to catch her and she landed on her right knee. Allison was taken by ambulance to the emergency room at Lexington Medical Center. Allison sued the hospital. The hospital invoked the defense of assumption of the risk. The Circuit Court, Lexington County, returned a verdict in favor of the hospital. Allison appealed. The Court of Appeals affirmed the decision of the lower court. The defense of assumption of risk requires four elements: (1) the plaintiff must have knowledge of the facts constituting a dangerous condition; (2) the plaintiff must know the condition is dangerous; (3) the plaintiff must appreciate the nature and extent of the danger; and (4) the plaintiff must voluntarily expose himself to the danger. The court noted that in this situation the ropes course instructor and several patients had explained the course to Allison. She was aware that two patients had chosen not to participate because of their physical condition, and she could do the same. Allison also watched a man fall and noted that he sustained an injury. With all of these facts Allison had to know that there was a risk involved in the activity and like other patients she could have chosen not to participate. *Allison v. Charter Rivers Hosp.*, 514 S.E.2d 601-SC (1997)

153. Schirick, E. (1996, November/December). Managing the risks of challenge courses. *Camping Magazine*, 69, 13-14.

ANNOTATION: Camping management requires a regular evaluation of the ropes/challenge course facility and practices to avoid serious injuries upon campers. Since there have been a number of incidents involving serious injuries at these courses, risk management must be used to minimize the potential for injury.

154. Schirick, E. & Evans, W. (1992, November/December). Risk management: Protecting your ropes course. *Camping Magazine*, 65(2), 6-7.

ANNOTATION: Ropes courses should be maintained by yearly professional inspections. Employees who work with the equipment should be trained and required to follow written procedures. Cleaning methods need to be appropriate, and surrounding trees must be inspected.

ACCESSIBLE and UNIVERSAL CHALLENGE COURSES

Challenge courses have the potential to meet a variety of program and participant needs. For this reason it has become a valuable asset in treatment and rehabilitation for people with disabilities. The information presented in this section describes how challenge courses are being adapted and managed for people with disabilities.

155. Curulla, M. A., & Strong, J., (2000, May). Community partnerships for inclusive challenge. *Parks and Recreation*, 35, 49-55.

ANNOTATION: In this article, the city of Eugene, Oregon's outdoor program has adapted a challenge course in conjunction with a local disability organization. This ropes challenge course has allowed people with disabilities throughout the country and the world, to focus on leadership development, disability rights training, and cross-cultural exchange. Originally designed for participants to be passive, the ropes challenge course now allows participants to experience the challenge of high ropes elements with adaptations for wheelchairs. This ropes challenge course has sparked interest in designing other adventure challenge courses that includes activities such as whitewater rafting and rock climbing.

156. Eavey, G. (no date). *Challenge programs: A universal approach to including people of all abilities*. Retrieved March 22, 2002 from the National Center on Accessibility website: <http://www.ncaonline.org/recreation/challenge.htm>

ANNOTATION: Traditionally, one of the barriers to participation in challenge programs for people with disabilities has been the design and structure of the challenge course itself and the delivery of the program. Unfortunately, lack of access to the course and staff with minimal understanding of adaptations can prevent full participation by people of all abilities in what is truly a goal-oriented program focused on personal growth. This monograph describes and provides an overview of the Challenge Program at Bradford Woods Outdoor Education and Leadership Center.

157. Fink-Miller, K. (1999). Include me: A universal approach to ropes challenge courses. In *Selected Monographs from the Association for Experiential Education 27th International Conference*. Charleston, WV: Clearinghouse on Rural Education and Small Schools. (ERIC Document Reproduction Service No. ED 438 142).

ANNOTATION: This paper offers suggestions for making ropes challenge courses accessible to individuals with special needs. Federal legislation requires that programs be updated to be inclusive of individuals with disabilities. A multi-disciplinary approach is suggested for promoting a better and safer program based on input from occupational therapists, physical therapists, speech and language pathologists, teachers, parents, and individuals. A team approach helps determine what physical adaptations or special equipment are needed, the best teaching approach, and necessary safety precautions. A

questionnaire is included that can be used as a guideline for finding out from individual clients what, if any, adaptations need to be made.

158. Haras, K. & Lisson, B. (2003b). Designing adventure: All for one and one for all. *Pathways: The Ontario Journal of Outdoor Education*, 15(1), 23-27.

ANNOTATION: In ropes course activities, an inclusive attitude and accompanying actions convey that everyone is welcome, respected, and able to contribute. Adventure leaders can facilitate inclusion by building options and adaptations into an activity's design. Examples illustrate how variations in the design variables of goal, structure, scenario, equipment, rules, and environment can invite participation and expand opportunities in adventure activities.

159. Havens, M. D. (1990, Spring). Making the experience accessible. *Outdoor Network Newsletter*, 1, 6-7.

ANNOTATION: Ropes and other challenge courses can be important tools in treatment and rehabilitation strategies for people with disabilities. Making challenge courses accessible to people of all abilities fosters integration and acceptance of disabled persons. Suggestions for building or modifying courses for accessibility are provided.

160. Larson, J. P. (1995). A ropes retreat: Fun, adventure, and personal growth. *Perspectives in Education and Deafness*, 13(5), 12-17.

ANNOTATION: This article describes a wilderness education program that uses a rope challenge course to foster group cooperation and individual self-confidence in a deaf and hard-of-hearing high school.

161. Martin, K. & Fulton, B. (1999 March-April). Ropes courses for all: Creating a universally accessible challenge program. *Camping Magazine*, 72(2), 25-28

ANNOTATION: Offers suggestions to camps for creating low-and high-ropes courses that are accessible to everyone. Describes modifications to low-ropes-course elements, such as the Nitro or Prouty's landing and a tension-traverse element; mechanical advantage systems to provide access to high-ropes-course elements; and special equipment for access or protection. (SV)

162. Rogers, D. (2000, March). To the top. *Parks & Recreation*, 35, 76-87.

ANNOTATION: The challenge course industry has experienced tremendous growth over the past decade. There appears to be widespread acceptance of the methodology while ever increasing numbers of public and private agencies are committing the resources to this powerful tool and its accompanying programs. With this proliferation of challenge courses an inevitable question as emerged: How do we include people with disabilities in these programs? No simple answer has been found to this controversial question. This article suggests that an approach called Universal Challenge Course

Design will accomplish a meaningful inclusion that extends beyond the confines of mandated accessibility.

PHYSIOLOGY

The following studies look at the physical measures and physical exertion involved with participating in a challenge course. The studies examine the effect of challenge course participation on heart rate, metabolic rate, blood pressure, and urinary neuroendocrine responses.

163. Bunting, C. J., Tolson, H., Kuhn, C., Suarez, E. & Williams, R. B. (2000). Physiological stress response of the neuroendocrine system during outdoor adventure tasks. *Journal of Leisure Research* 32(2), 191-207.

ANNOTATION: Outdoor adventure tasks involve a composite stress of both physical and psychosocial demands. Such compound stressors are not often studied, yet this is the type of stress most often associated with active leisure experiences. The purpose of this study was to describe urinary epinephrine, norepinephrine, cortisol responses to various outdoor adventure tasks, and to evaluate the influence of aerobic fitness on these responses. Adult participants were recruited from individuals who had voluntarily registered and paid for a nine-day outdoor adventure program. Urine samples were collected from 15 participants following beginning and advanced rock-climbing, beginning and advanced whitewater canoeing, ropes course, and backpacking, as well as pre and post course van rides. The advanced rock climbing and advanced whitewater canoeing days elicited the highest urinary neuroendocrine responses, and lower fit participants had higher neuroendocrine levels when compared to the higher fit participants.

164. Jones, R. A. & Ellis, G. D. (1996). Effect of variation in perceived risk on the secretion of B – endorphin. *Leisure Sciences*, 18, 277-291.

ANNOTATION: It is currently unknown why individuals opt to participate in risk-taking as a form of recreation. This study was designed to test the hypothesis that B-endorphin, a naturally produced opiate-like peptide, is secreted in response to a perception of risk, thereby reinforcing risk taking behaviors. A 2X2 factorial design (Time X Perceived Risk) with repeated measures across both factors was used. The two levels of perceived risk were high and low. Perceived risk was operationalized through the use of ropes course events of similar design but differing in exposure to height. The dependent variable was level of plasma B – endorphin. Exploratory analyses of subjective arousal, pleasure, and desire to repeat were also undertaken. Results indicated that plasma B – endorphin and arousal were significantly increased in the high – perceived-risk condition. A Time X Risk interaction was identified for subjective pleasure. Although the means were in the hypothesized direction, no significant difference was found between low and high risk conditions for desire to repeat the experience.

165. Priest, S. & Montelpare, W. (1992). Research update: Prediction of heart rates on a ropes course from simple physical measures. *Journal of Experiential Education*, 18(1), 25-29.

ANNOTATION: This study identified the highest heart rates attained on a ropes course for a corporate population. It also examined the relationships between highest heart rate and other physical measures (basal heart rate, blood pressure, height, weight, body girths, cholesterol, maximum number of pushups, and heart rate after brisk walk); and developed an equation for screening men's cardiac risk for a ropes course.

166. Swatton, R. M., MA (1994). Time-motion analysis and heart rate telemetry of rock wall and ropes course activities in children. *Dissertation Abstracts International*, 34(02), 500. (UMI No. AAIMM99936).

ANNOTATION: The purpose of this study was to describe, using time motion analysis and heart rate telemetry, the intensity and movement characteristics in rock wall and ropes course activities. Twenty elementary school children were divided into high and low strength groups based on their performance of a 1 repetition maximal (1 RM) bench press test. Each student was required to complete the rock wall and ropes course circuit which consisted of 12 climbing related segments. Results revealed that the mean heart rate intensity for the entire circuit was 80.6% over a mean duration of 36 minutes 20 seconds. The high strength group had a lower mean heart rate and a shorter duration for the entire circuit. The correlation between predicted V02 max and total duration was moderate ($r = 0.39$), suggesting that aerobic fitness level influenced performance.

167. Watts, P. B., Coleman, B., Clure, C., Daggett, M., Gallagher, P., Sustrich, P. & Wilkins, B. (1999). Metabolic and cardiovascular responses during work on a high ropes course. *Journal of Sports Medicine and Physical Fitness*, 39(1), 37-41.

ANNOTATION: High ropes course facilities are employed in adventure programs to promote self-esteem, stress management, and problem solving skill development. Although the combination of fear, anxiety, and potentially high levels of physical exertion during such activity could yield situations of cardiac arrest for certain individuals, no previous research has described the physiological nature of high ropes course work. The purpose of this study was to observe the metabolic and cardiovascular responses to a typical high ropes course experience. Seventeen subjects completed a 5-element sequence on an indoor high ropes course (step swings, swinging tires, balance beam, vertical cargo net and a second beam). These elements were positioned in series at a height of 20 feet above the floor. Expired air was analyzed continuously using a portable open circuit metabolic analyzer and heart rate (HR) was recorded at 5-second intervals via telemetry. Pre and post-course blood samples were obtained via finger-prick and analyzed for lactate. Systolic and diastolic blood pressures were taken at an orientation session prior to each subject's test date and at pre-, mid-, and post course points during each test session. Results indicated an increase in blood lactate from pre-course to post course. Systolic blood pressure was higher at pre and post-course when compared to orientation. mid- and post- course systolic blood pressure was significantly

higher than the pre-course mean. A significant difference was found for diastolic blood pressure between the midcourse vs. orientation mean. Based on the results of this study, average high ropes course work can be classified as aerobically moderate to heavy. Elevation in diastolic blood pressure may occur during elements with a high level of upper bodywork. High ropes course work does not present an unusually high physiological stress for healthy, physically fit individuals.

Evaluation

This section contains examples of studies that focus on the use of specific techniques to evaluate challenge course programs. Delphi Study, meta-analysis and other qualitative and quantitative methods are presented.

168. Bishop, R. M. (1991). The perceptions of ropes course facilitators of the impact of a ropes course experience on individuals and families: A Delphi study. *Dissertation Abstracts International*, 52(08A), 3088. (UMI No. AAI9203088).

ANNOTATION: The purpose of this study was to identify what elements of family dynamics and which family and individual issues can be impacted by a ropes course experience. The study used a three round Delphi technique. An original list of 125 subjects was compiled from publications, workshop presentations, teaching and training facilities, recommendations from ropes course trainers, and the participant list of a state-wide conference on ropes courses. The subjects were asked to list positive and negative effects on individuals and families that they had observed as a result of a ropes course experience. From the responses, individual and family issues were identified that appeared to the subjects to have been impacted by the ropes course experience. The second and third rounds of the study asked the subjects to rate the identified items as to the impact that a ropes course experience had on the issues. The subjects were also asked to make comments concerning any items or comments made on the surveys. The comments and ratings were made available to the subjects before completing the following round. The data were reported in the form of rank orders of 37 individual issues and 35 family issues that the subjects perceived to be impacted by a ropes course experience. The consensus of the subjects indicated that a ropes course experience can have an impact on both individual and family issues if the facilitators are trained and skilled in processing the experiences provided by the ropes activities. At least five clusters of family issues were identified: therapeutic usefulness, togetherness and being together, communication, teamwork, and family structure. Discussion of negative impacts of a ropes course experience was also reported including issues of training and skill level of the facilitator. Recommendations were made for further research, practical use of ropes experiences in family therapy and enrichment, and issues of training.

169. Braverman, M., Brenner, J., Fretz, P. & Desmond, D. (1990). Three approaches to evaluation: A ropes course illustration. *Journal of Experiential Education*, 13(1), 23-30.

ANNOTATION: Examines benefits of three models for evaluating outdoor adventure programs: program monitoring with debriefings and check-offs; experimental evaluation; and qualitative, naturalistic observation. Illustrates and compares approaches using California 4-H adventure ropes course. Examines data's specificity, assumptions, ambiguities, and follow-up. Poses further evaluation questions.

170. Bunting, C. J. & Donley, J. P. (2002). Ten years of challenge course research: A review of affective outcome studies. In M. D. Bialeschki, K. A. Henderson, A. B. Young, & R. G. Andrejewski (Eds.), *Research in outdoor education: Vol. 6.* (pp.158-159). Cortland, NY: The Coalition for Education in the Outdoors.

ABSTRACT: This meta-analysis gathered and synthesized the ropes/challenge course research during the 1990s that studied the affective outcomes with non-therapeutic populations. Primary findings suggest small to moderate positive effects on team-work and self-esteem, leaving unanswered questions and unproven claims about ropes challenge courses still exist.

171. Gilliam, N. G. (1990). A qualitative study of ropes courses in psychiatric treatment facilities. *Dissertation Abstracts International*, 52(01B), 504. (UMI No. AAI9117918).

ANNOTATION: Ropes courses are becoming widely utilized in psychiatric treatment settings. Prior to this study, little has been studied or written about the use of ropes courses for mental health clients. This present qualitative study describes the usage of ropes courses in five psychiatric hospitals and treatment facilities. The goal of the project was to discover (a) why were the ropes courses installed; (b) how have these five treatment facilities integrated the ropes course into their treatment program; (c) what were the kinds of issues that emerged and how were problems solved. Interviews were conducted with administrators, recreation therapists, activity therapy directors, and patients. Questions focused on topics as funding, goals for the course, liability issues, support for the course, how the course was used therapeutically, staff and patients' view of the course, and significant staff issues such as training and safety. Staff were observed at each site conducting a ropes experience. A content analysis revealed themes and patterns of response. The results suggest that the course is becoming accepted as a valuable treatment strategy. But problems do exist with safety, ethics, staff training, marketing, educating the hospital community, under-utilization, and scheduling. Across these five sites, there was little agreement on how the course should be used as a treatment tool. Support for the ropes course was critical to its success. The amount of support the course received from the administration and staff varied from site to site, and the amount of support directly affected the utilization of the course. Fear of the course was cited as the biggest block.

172. Heyliger, J. (2003). *Program satisfaction assessment tool for measuring client satisfaction with challenge course programs.* Unpublished manuscript. Durham, NH: The University of New Hampshire.

ANNOTATION: This one page, 12 question program evaluation tool for challenge course programs was designed as part of a graduate class at the University of New Hampshire.

173. Terry, L. (2002). *A quantitative and qualitative analysis on the effects of an adventure course: An intervention with female adolescents*. Undergraduate Thesis, Scripps College, Claremont, CA.

ANNOTATION: No significant effects were found following a one-day ropes course experience on several personal development outcomes measured with the Life Effectiveness Questionnaire. There were no effects were found for conducting bi-weekly journaling following the one-day ropes course experience. However, following interviews, students reported developing greater self-confidence and better friendships as a result of the ropes course experience.

174. Tholkes, B. (1994). Anxiety and outdoor adventure: a study of state anxiety and activity. *Dissertation Abstracts International*, 55(04A), 1100. (UMI No. AAI9422315).

ANNOTATION: The purpose of this study was to examine the relationship between state anxiety and performance in an outdoor adventure activity, a high ropes course. Two theories, which were examined to determine the type of relationship present were the inverted U theory and the multidimensional anxiety theory. The results were based on research conducted at the Mankato State University High Ropes Course. During this study, 217 individuals were administered the Spielberger State Anxiety Inventory (SAI) and observed as they participated in the high ropes course. Pearson product moment coefficient of correlation and stepwise multiple regression were used to examine the relationship between the variables of performance, state anxiety, age, gender, ethnicity, previous experience, and self-efficacy. Two variables, performance and gender, demonstrated a significant relationship with state anxiety. The results demonstrated a linear relationship between state anxiety and performance, as proposed by the multidimensional anxiety theory. Two other theories, which were examined were Easterbrook's cue utilization theory, to examine the significance of cue recognition, and Bandura's theory of observational learning, to examine the concept of modeling.

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