

**Integration Through Adventure:  
Results of a Three-Year Longitudinal Study**

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## Introduction

*"Our group would like to get together with other groups where handicaps were not the common bond, but where bonds were created by interests and activities."*

(Respondent to a Wilderness Inquiry Survey of Organizational Needs, 1989)

The importance of social integration has become more clear as our profession and our society move beyond merely placing people with disabilities into programs to learning effective ways to truly include people with disabilities on an interpersonal level through the reduction of negative attitudes and the development of friendships and other relationships. Facilitation of social integration is a primary goal of Wilderness Inquiry, an organization that provides outdoor and high adventure experiences to persons of mixed abilities.

The purpose of this study/evaluation effort was to investigate the effectiveness of extended integrated outdoor adventure programming conducted by Wilderness Inquiry in enhancing friendship development between persons with and without disabilities, increasing positive attitudes toward persons with disabilities, promoting outdoor skill acquisition, and impacting quality of life and generalization beyond the outdoor experience.

This study was completed as a part of Grant # H128J00034 with the U.S. Department of Education/Office of Special Education and Rehabilitation Services and addressed the needs of people with and without disabilities in accessing wilderness-based, high adventure activities in mixed ability groups. The grant project included not only this research component, but also the development of an outdoor curriculum for high adventure pursuits with mixed ability groups and the development and implementation of a series of canoe workshops across the midwest region for mixed ability groups. This study was a 3 year investigation designed to thoroughly document the changes in participants attitudes, relationships, skills, and quality of life as they participated in wilderness-based outdoor recreation. It was completed by Wilderness Inquiry in conjunction with the University of Minnesota.

This report will present the methodology of the study, the results obtained, and a discussion of conclusions and implications for serving mixed ability groups in outdoor adventure recreation programming. It is hoped that this report will be useful to other agencies and individuals as they attempt to "open up" wilderness experiences to more diverse ability level groups. It is also hoped that the report will provide guidelines for social as well as physical inclusion of people with disabilities in all aspects of life.

## Methodology of the Study

This section of the report will focus on the methods used in the longitudinal study. First, a brief overview of the chronology of the study and its activities over the three year grant period will be presented. The rest of this section will describe the sample, the research design, the dependent variables studied, the instrumentation and methods used to collect the data, and the methods used for data analysis.

### What was the chronology of the study?

This section outlines the activities and corresponding timelines of the research project. This overview will provide an overall perspective on how the research study progressed. The remaining sections will describe specific methods used and data collected in detail.

#### Year One:

- Designed research study (research questions, design, instruments, sampling)
- Recruited and selected sample of two cohort groups
- Completed baseline assessments on all subjects at metro area canoe workshops
- Group One participated in two wilderness trips (7-day and 3-day trips) with corresponding data collection
- Completed six-month follow-up interviews with Group One

#### Year Two:

- Completed baseline assessments with both groups at metro area canoe workshops
- Group One and Group Two participated in two wilderness trips each (each took a 3-day and a 7-day trip) with corresponding data collection
- Completed six month follow-up interviews with Group One and Group Two

#### Year Three:

- Completed baseline assessments with both groups
- Group One and Group Two each participated in a 10-day wilderness trip with corresponding data collection
- Completed six month follow-up interviews with Group One and Group Two

## Who participated in the three year study and how were they selected?

### **Sample Selection:**

The sample for this study was selected using a random stratified cluster technique. The stratified clustering was designed to include (a) subjects with a variety of disabilities who were receiving vocational rehabilitation services, and (b) subjects without disabilities.

Applicants with disabilities were recruited in collaboration with the independent living centers in the state of Minnesota. In addition, there were many people with disabilities who volunteered to be a part of the study when they learned of it through friends, acquaintances, or other informal networks. From this pool of names, ten subjects were randomly selected after being stratified into disability type (persons with mobility impairments who use wheelchairs, persons with sensory impairments, and persons with other disabilities, such as other mobility impairments, head injury, communication impairments, mental illness, etc.). This type of stratification was necessary in order to balance ability levels in the groups being formed to participate in wilderness-based high adventure experiences.

Subjects without disabilities were randomly selected from a pool of voluntary applicants. This pool of volunteers was created after the study was advertised within the metropolitan area in recreation and human service agencies, as well educational agencies (e.g. YMCA's, group homes, universities, etc.). Eight subjects without disabilities were chosen from this pool.

### **Sample Description:**

Two cohort groups were formed consisting of nine subjects each, five of whom had disabilities and four who did not have disabilities. Table One provides a summary of the participants in the study. Because the study extended over three years, it was difficult to keep the original sample intact. Table One also describes participants who were chosen to be a part of the study when attrition occurred. It also describes why subjects were replaced in the study. The attrition of subjects was due primarily to participants having life events occur that did not allow them to continue further in the study (weddings, illnesses, other obligations). However, there were a small number of cases (e.g. Ladd, Henry) where the subjects themselves experienced difficulties in continuing with the study. This will be discussed in detail later in this report.

**Table One. Summary and Description of the Participants in the Study.**

<b>Name</b>	<b>Demographic Information</b>	<b>Evident Disability</b>	<b>Life Situation</b>	<b>Participation in Study</b>
<b>GROUP ONE:</b>				
Ladd	male; 59 years old, divorced	CVA; hemiplegia; past history of alcoholism; uses wheelchair	unemployed; lives alone in subsidized housing; little family support	discontinued during Year Two; refused to participate in any trips after the first trip
Drew	male; 30 years old; single	mild level of mental retardation; legally blind	works at a restaurant; lives in own apartment with a roommate	completed entire study
Annette	female; 41 years old; single	mental retardation; wears hearing aids for a hearing impairment	works at a sheltered workshop; lives in own apartment; strong family support	completed entire study
Rick	male; 27 years old; single	cerebral palsy affecting limbs on right side	graduate student at a major university in rehabilitation services	completed entire study
Mike	male; 38 years old; single	diabetes; legally blind; hearing impairment; below the knee amputee on both legs; used wheelchair; kidney transplants	active as a self-advocate for disability rights; lives in own apartment	discontinued during Year 2 of study due to severe health problems
Henry	male; 30 years old; single	traumatic brain injury; left hemiparesis; impaired cognitive skills	attends a day treatment program; ; lives in own apartment	joined study during Year 2; at the beginning of the last trip, asked to be transported home before the trip started

Kathy	female; 45 years old; single	ataxia; uses a wheelchair; post traumatic stress disorder	works as a counselor	joined study during Year 2; completed last half of Year 2 and Year Three of study
Lana	female; 34 years old; single	no disability	works as an occupational therapy assistant with a rehabilitation service	completed entire study
Linda	female; 30 years old; married	no disability	works in the developmental disabilities field	completed entire study
Natalie	female; 26 years old; single	no disability	graduate student in special education and works in the developmental disabilities field	completed entire study
Dustin	male; 30 years old; single	no disability	graduate student in planning and management; works for municipal government	began study at the beginning of Year 2 and completed rest of study

## GROUP TWO

Greg	male; 41 years old; single	cerebral palsy; communication impairment; uses a communication device and a wheelchair	active in self-advocacy groups	completed entire study
Ralph	male; 43 years old; single	cerebral palsy; limbs slightly affected; fine motor control affected	consultant and speaker on disability awareness training	completed entire study
Karen	female; 41 years old; single	cerebral palsy with spasticity; slight speech impairment; uses a wheelchair or a quad cane	works at PNS, Inc.; lives in own apartment	completed entire study

Tom	male; 44 years old; married to Sally, who is also in the study	epilepsy; bipolar disorder	active in self advocacy movement; lives in apartment with Sally, whom he helps with daily living	completed entire study
Sally	female; 45 years old; married to Tom, who is also in the study	cerebral palsy; uses electric wheelchair; speech impairment	active in self-advocacy; writes for a newsletter; lives in an apartment with her husband	completed entire study
Tim	male; 47 years old; married	no disability	works in a department store selling clothing; writer	completed entire study except last trip
Susan	female; 50 years old; married	no disability	works with a communication group for people with speech impairments	completed entire study except last trip
Paul	male; 22 years old; single	no disability	undergraduate student at a major university in therapeutic recreation	completed only one 7-day trip during Year 2; moved or quit school - unable to locate him
Ann	female; 65 years old; divorced; mother of 13 children	knee replacements; scoliosis	retired; travels extensively	completed entire study

Three other participants from Group 2 asked to be discontinued from the study before Year Two (when that group started actively participating in the study) due to weddings, travel plans, and family illness. One participant without a disability in Group One participated in the first trip, then quit. She had never wilderness camped before and did not like it.

## How was the research study designed?

A **multiple baseline research design across groups** (Tawney & Gast, 1984) was used in this study. In Year One and Year Two, Cohort Group One participated in baseline sessions and then participated in 7-day and 3-day outdoor adventure trips in wilderness settings. In Year Three, they participated in one 10-day outdoor adventure

trip. They also participated in an in-depth follow-up interview sessions approximately four months following their trips each year, for a total of three interview sessions.

Cohort Group Two participated in baseline sessions, but did not participate in any trips in Year One of the study. This established a baseline by which to compare changes in Group One. In Year Two, Group Two participated in baseline sessions and 3-day and 7-day outdoor adventure trips. In Year Three, they participated in a 10-day outdoor adventure trip. They also participated in in-depth follow-up interviews two to four months after their trips in Year Two and Year Three. Appendix A compiles most of the quantitative data collected over the three year period.

### **What dependent variables were studied?**

The **dependent variables** studied were:

- 1) Canoe skill acquisition among persons with disabilities;
- 2) Change in attitude toward persons with disabilities;
- 3) Friendship or relationship development; and,
- 4) Perceptions of the impact of the outdoor adventure experiences on quality of life and its generalization to other areas of daily living.

Each of these variables is believed to be critical to understanding the impact and possible success outdoor adventure-based programming has on positively impacting the lives of individuals with and without disabilities.

### **How were the dependent variables measured or assessed?**

#### **Canoe skill acquisition:**

Canoe skill acquisition was measured on a repeated schedule using a task analytic assessment. The canoe skills task analytic assessment used is provided in Appendix B. A baseline of canoeing skills was established on each subject with a disability prior to involvement in the extended outdoor trips each year. During the extended outdoor adventures, a daily assessment was made of canoe skills. Interrater reliability was checked on a regular basis throughout the collection of the skill acquisition data. Data were analyzed through plotting of the variables and visual inspection of data trends.

#### **Attitude change toward people with disabilities:**

Attitude change was measured using an adapted version of the Peer Acceptance Scale (Voeltz, 1982) (see Appendix C). The scale was administered during the first baseline session and again after the extended trips each year. Mean attitude scores were graphed for comparison of change over time of involvement in



the study. This data was visually inspected as well as being subjected to a univariate repeated measures analysis of variance to test for significant differences at the .05 level of significance.

#### **Relationship/friendship development:**

Friendship and relationship development were measured in two ways. First, a sociometric assessment was used (see Appendix D for the sociometric assessment tool used). This assessment was completed by participants following the baseline sessions, but prior to involvement in the extended trips. The sociometric assessment was completed again before and after the second and third year of involvement in the extended outdoor experiences for a total of six assessments for Group One and five assessments for Group Two. Data were analyzed by tabulating the frequency and direction of peer choices on the sociometric measurement (Ellis, Forsyth, & Voight, 1983). Group expansiveness, group cohesion, and individual status within the group were determined (Gronlund, 1959). Friendship and relationship development were also studied by having the subjects complete daily journals during the extended outdoor experiences. In addition, data from the quality of life interviews and field observation notes were used to assess relationship development. These qualitative data were analyzed by classifying and coding responses according to emerging themes on relationship development.

#### **Impact of outdoor adventure experiences on lifestyle:**

Impact of the outdoor experiences on quality of life was ascertained through an in-depth structured interview that occurred 3 - 6 months after the trips. The interview protocol, shown in Appendix E, was first developed by McAvoy, Schatz, Stutz, Schleien, and Lais (1989) for use with Wilderness Inquiry participants. The interview questions focused on changes subjects with and without disabilities perceived they had experienced in their lifestyles, daily living skills, employment, relationships, leisure involvement, and other areas. The interviews were completed by trained assistants and the researchers and lasted from 1 to 1-1/2 hours. Interview data were analyzed by classifying and coding responses to search for patterns in the outcomes from involvement in the integrated outdoor experiences as perceived by the participants. In addition, results of a quantitative portion of the interview, looking at perceived impact on several major areas of life on a Likert scale, were tabulated and compared over the three year period.

In summary, data was collected to determine changes in outdoor skill development, changes in attitude toward people with disabilities, friendship or relationship development, and impact of outdoor experiences on other life areas. The longitudinal nature of the study provided for an unusual in-depth look at these variables and added strength to the findings. The next section of this report presents the results of this study.

## Results

This section of the report will present the results of the data collected on each of the main variables, canoe skill acquisition and maintenance; changes in attitude toward people with disabilities; relationship development; and, perceived impact of the outdoor adventure experience on other life areas after the trips.

### **What changes occurred in canoe skill acquisition?**

Results of the canoe skills task analytic assessment, as shown in the Figure One, indicated that participants with disabilities showed a definite acquisition of canoeing skills following participation in the extended outdoor experiences as compared to baseline assessment. This improvement in canoe skills was maintained from the first to the last trip, with minimal loss of skills between trips. The multiple baseline design helped to clarify the significant contribution the Wilderness Inquiry trips seemed to have on canoe skill acquisition and maintenance, as evidenced by the change in skill mastery once trips were started with both groups, as compared to baseline. The interrater reliability for the canoe skill task analytic assessment was an average of 90.6% with a range of 68% - 100%.

### **What changes in attitudes toward people with disabilities occurred over the course of the three-year study?**

Results of the attitude/peer acceptance scale showed that all groups started out with positive attitudes toward people with disabilities and maintained that positive attitude throughout the three-year study. Figure Two illustrates the maintenance of positive attitudes over time, with 40 points being the maximum score on the peer acceptance scale, indicating a highly positive attitude. Results of the repeated measures univariate analysis of variance with the attitude survey scores showed that there was not a significant difference between attitude scores from the pre-measurement to the post-measurement at the end of Year 3.

**Figure One. Canoe skill acquisition during the three year study.**

### Canoe Skill Acquisition for Group 1 and 2

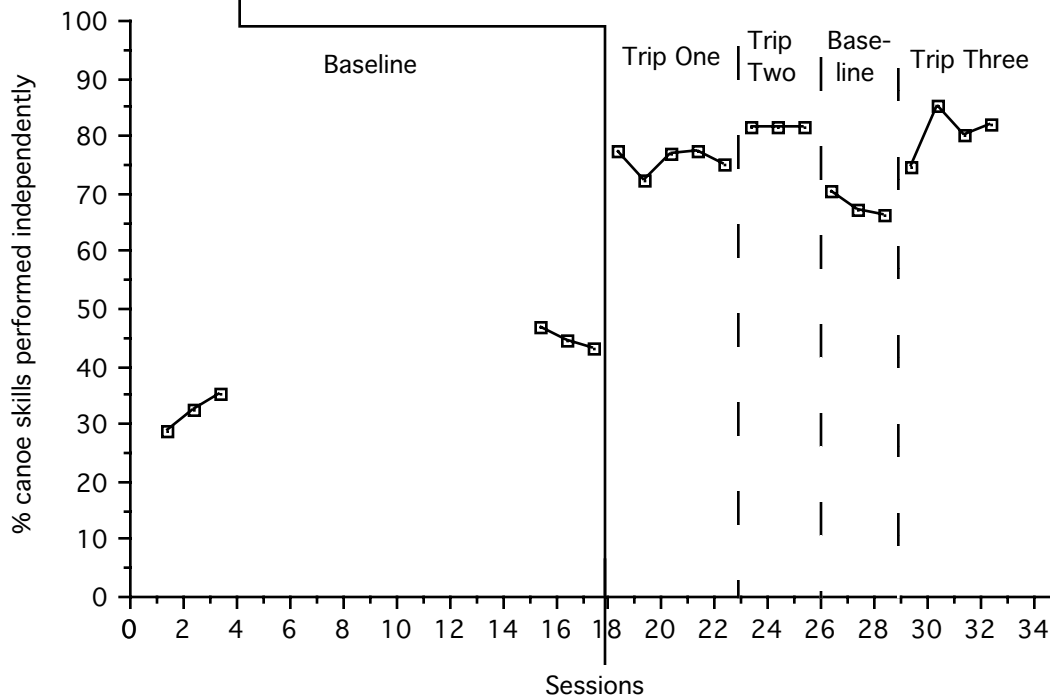
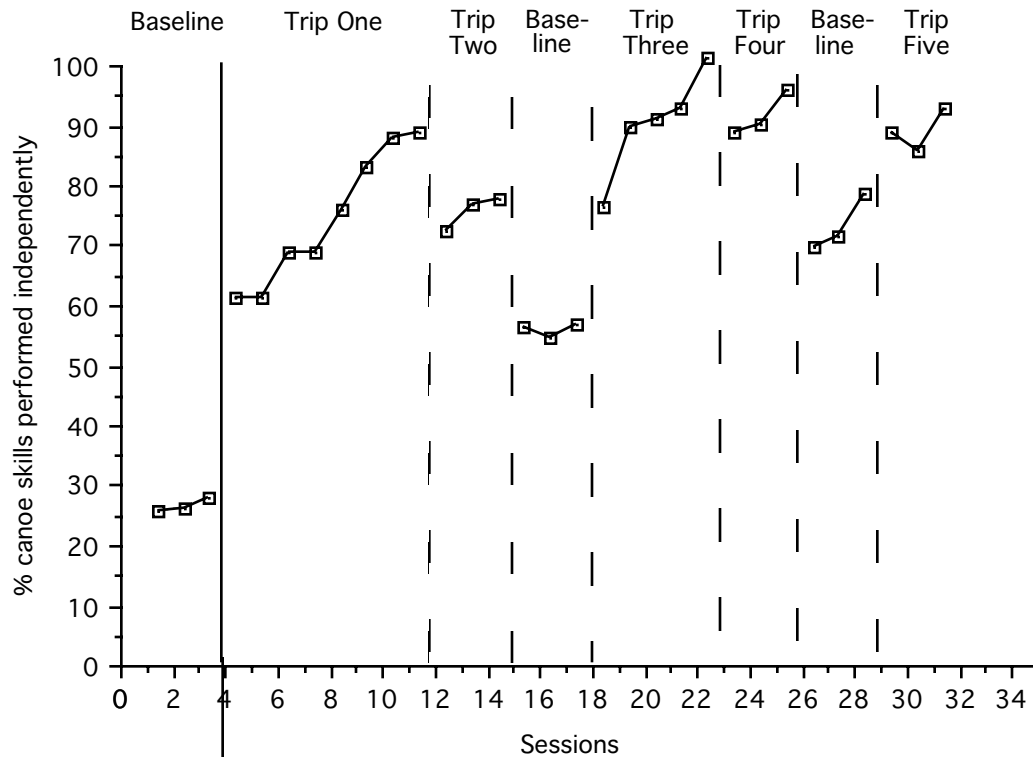
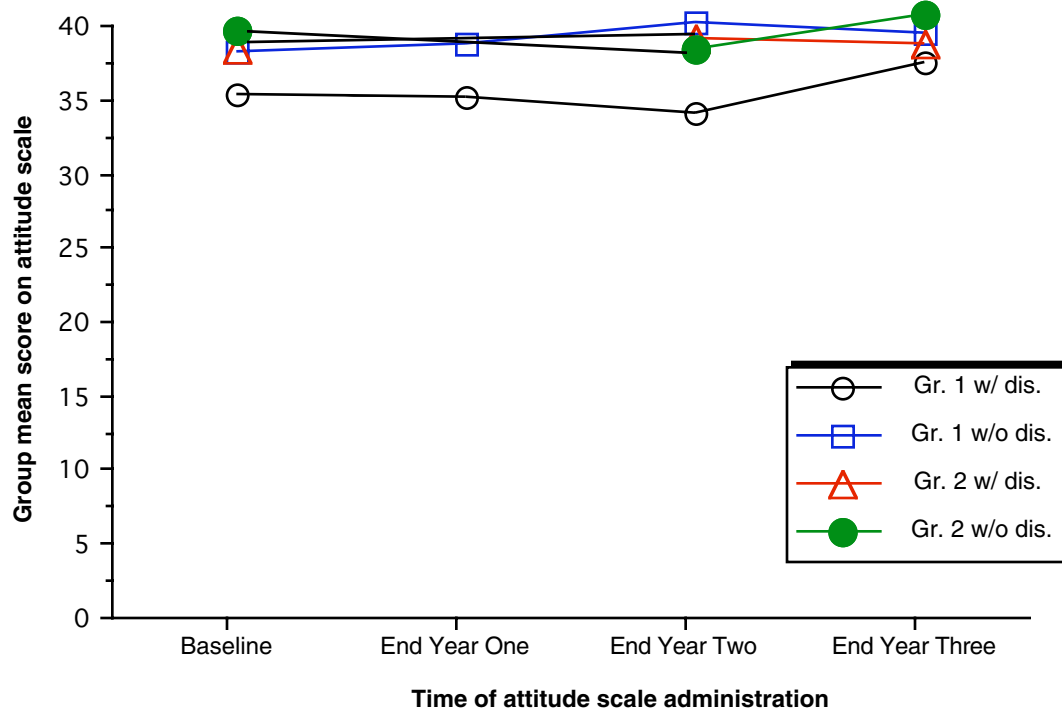


Figure Two. Mean scores on attitude scales for Group 1 and Group 2 across the three-year study.



### What types of friendships or relationships developed within the groups?

Relationship development was assessed using a sociometric assessment repeated over time. From this data, the variables identified for analysis were: 1) indices of group cohesion; 2) indices of group expansiveness; and, 3) choice status within the group.

**Group cohesion** is defined as the ratio of the number of mutual choices group members make to the total number of possible mutual choices. It is an indication of how close the group has become as a whole.

**Group expansiveness** is defined as a willingness to talk or be a part of the group. It is obtained by dividing the total number of group choices made by the number of group members. It is an indication of the group's openness to forming relationships.

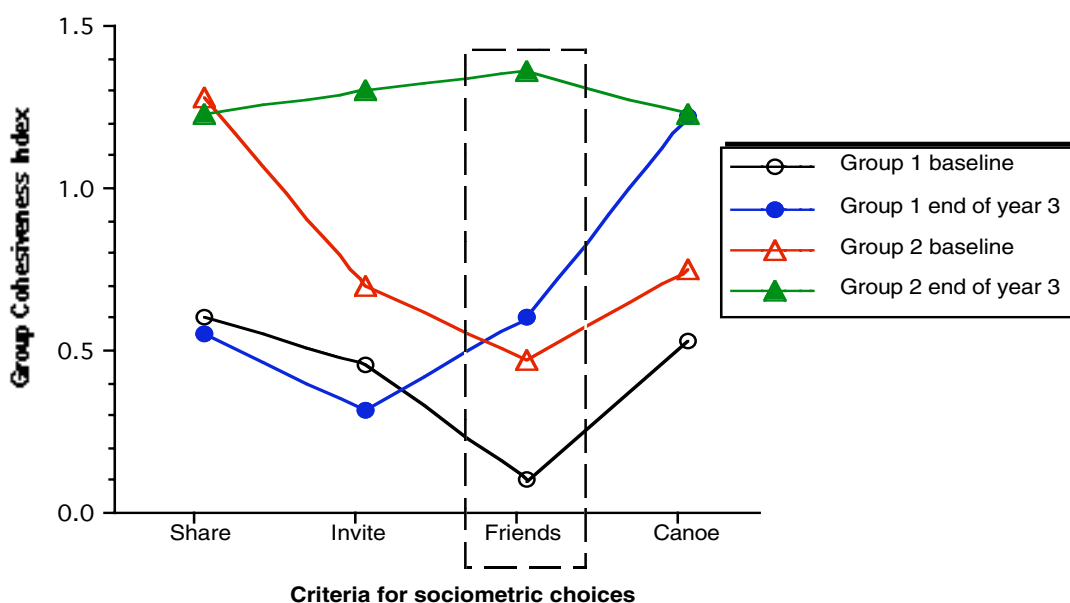
**Choice status** is defined as the number of times a person is chosen by others in the group divided by the number of people in the group minus one. The higher the choice status for an individual, the more that individual was chosen by others. A

choice status of 1.0 means that a group member was chosen by all other group members on the criterion being assessed.

The criteria which asked, "Which people from this group are your friends?" and "Which people from this group are not your friends?" was used for this analysis, as friendship development is the variable under study. The following data results illustrate how the groups developed over time and how many group members were choosing other group members as friends.

In Figure Three, which illustrates the results of the group cohesiveness index on all four criteria, shows that in general, the groups became more cohesive by the end of the three year study. On the friendship criterion, even though Group 2 was much more cohesive than Group One at baseline, both groups gained in cohesiveness by the end trips in Year Two, considering more of the group members as friends.

**Figure Three. Changes in Group Cohesiveness in Both Groups**



In Figure Four, examining group expansiveness, it can again be seen that Group Two was more expansive or open to forming friendships than was Group One at baseline, but that both groups increased in willingness to form friendships by the end of Year Two.

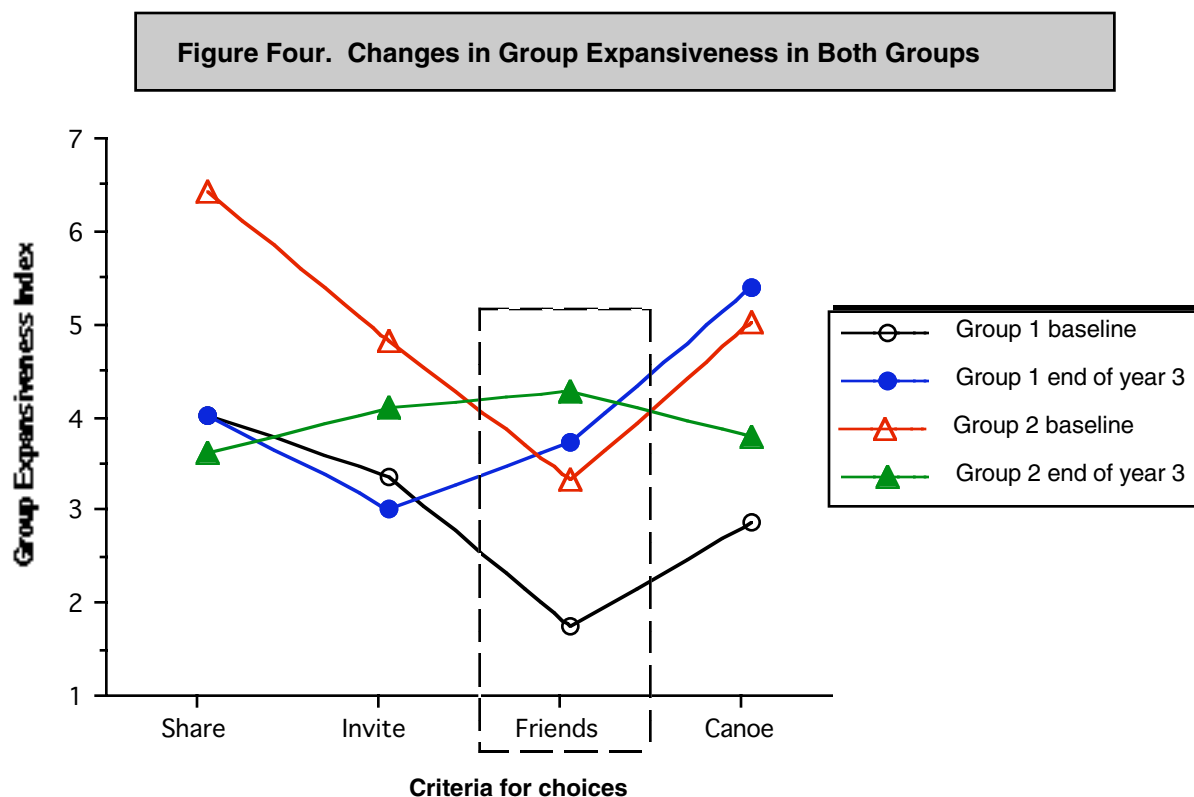
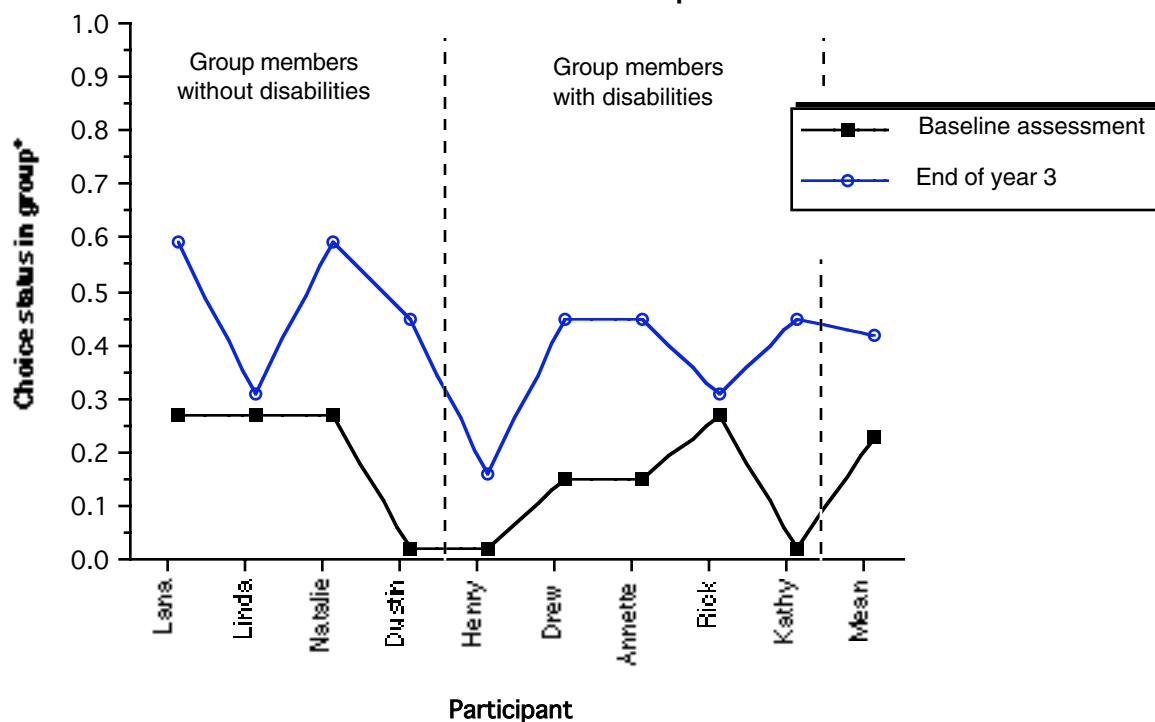


Figure Five depicts the choice status of individuals in **Group One** at the baseline sociometric assessment and at the end of Year Three. In general, all group members increased their choice status as a friend to other group members, meaning that group members were choosing each other as friends more frequently when asked on the sociometric assessment. In addition, the mean choice status for the group members increased by a significant amount.

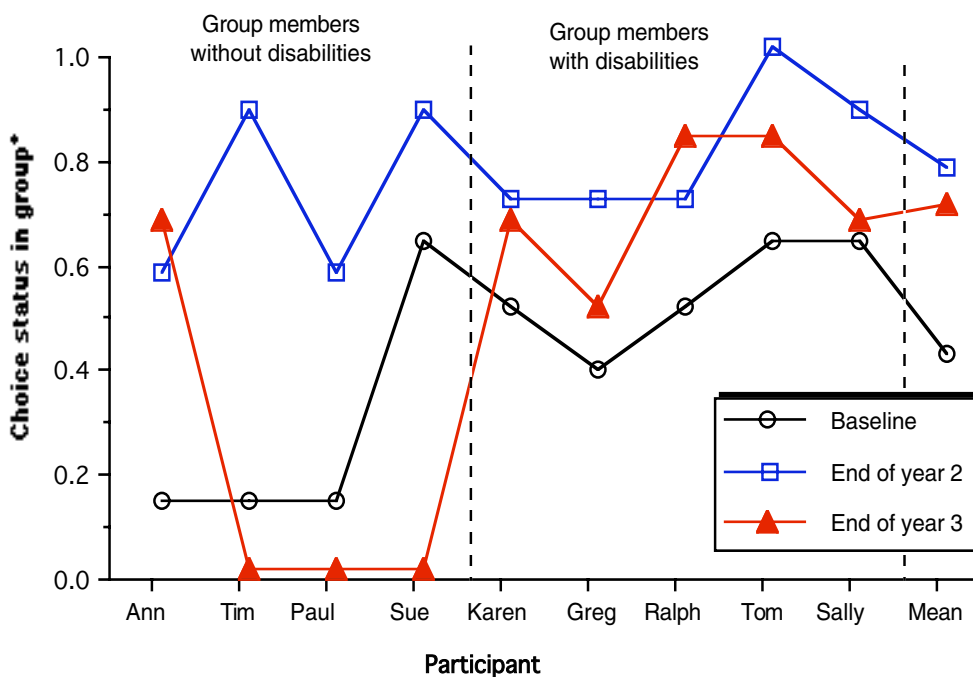
Figure Six depicts the choice status of individuals in **Group Two** at the baseline sociometric assessment, at the end of Year Two, and again at the end of Year Three. All three years were shown since three group members were absent from the last trip where the sociometric assessment was given. In Group Two, all group members increased in their choice as a friend by other group members from baseline. Also in this group, there was no visual difference between group members with or without disabilities.

**Figure Five. Pre- and Post-Choice Status for Group One on Sociometric Friendship Criteria**



\*1.0 = participant was chosen by all other group members

**Figure Six. Choice Status on Sociometric Friendship Criterion for Group Two**



\*1.0 = participant was chosen by all other group members



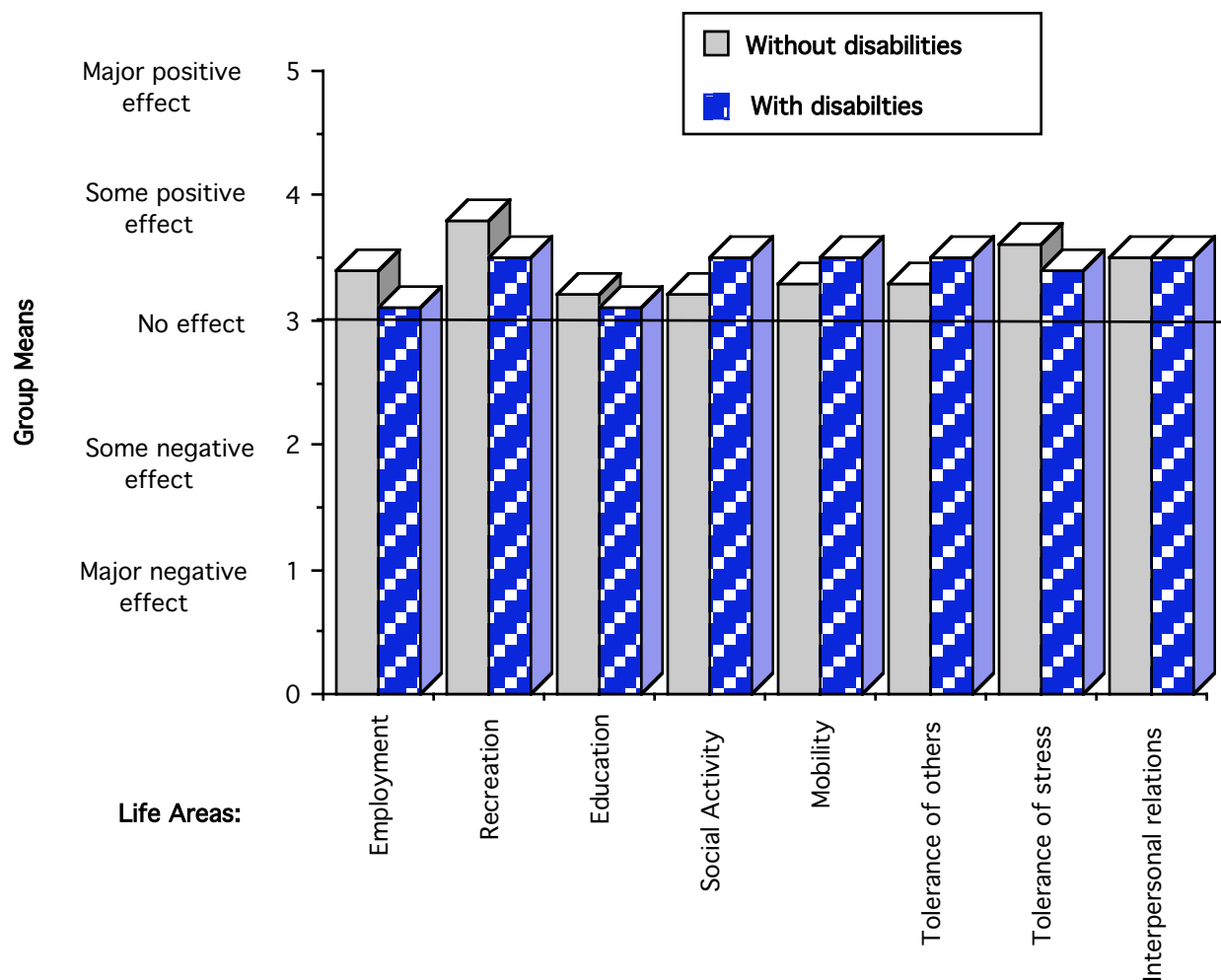
## **How did participants perceive that the wilderness trip experiences had impacted their quality of life?**

Perceived impacts of the trip experiences on participants' quality of life was assessed through an in-depth interview. Group One participated in three follow-up interviews, one at the end of each of the three years of the study. Group Two participated in two interviews, after Year Two and after Year Three. This section reports the quantitative results of the interviews, as well as qualitative data that supports and strengthens the quantitative data.

### **Perceived Impacts on Quality of Life - Quantitative Results:**

Figure Seven illustrates the perceived impact the Wilderness Inquiry trips had on major life areas for Group One and Group Two at the end of Year Two. All areas showed some minor positive impact from participation in the trip experiences. The areas of recreation, tolerance of stress, and interpersonal relations were listed as having been impacted the most. Social activity, mobility, and tolerance of others were also positively impacted by trip participation. Education and employment were only minimally impacted, on the average.

## Perceived Effects of the Trips on Major Life Areas



### Preliminary Results from the Qualitative Data:

A preliminary review of the qualitative interview data supports these positive impacts, with some individuals being much more positively impacted than others. Qualitative data analysis, although still in progress, also showed many positive outcomes not delineated on the quantitative scale of the interview protocol.

A theme that continued to emerge from the interview data was that of a more **positive attitude toward people with disabilities**. According to one nondisabled participant:

"I have made a lot of changes in the way I deal with people with handicaps. They can do a lot more."

Another participant stated:

"It (the trips) gave me a broader perspective. I had a very narrow perspective of what people with disabilities are like.... I know that even people with the most severe disabilities have preferences, likes and dislikes. It made me realize that again, people are human, and what people with or without disabilities can do if they really want to. If they really have their heart set on something you can help them find a way to do it."

Another participant described how the experiences opened up a whole new perspective to him about disability:

"I have more of a respect, and I'm still trying to think of a way to describe how it opened up a new place of understanding where people are coming from, and also understanding more of what capabilities are even if people are challenged with developmental disabilities, what their social abilities are, how much fun and pleasure and warmth and enjoyment you can share with them. In terms of physical disability, I've gained a little more respect of how people cope with the physical challenge that they have, that diligence of persisting, being very creative about solving that problem.."

A nondisabled participant described how a changed attitude toward people with disabilities has affected his daily life:

"Now that when I'm in daily life encountering someone with disabilities, there is just something else that I feel. Just something that wasn't there before. I have a little more inclination to make sure that person is treated fairly, whether it's physical or seeing what the environment is doing to them, more so than I paid attention before."

Another theme that emerged from the data was the **personal growth** that participants with and without disabilities felt had taken place. Some of the types of personal growth included increased self-confidence, increased self-esteem, assessment of life priorities, increased relaxation and a more balanced attitude toward life's stressors, among others. One participant with a disability commented:

"I don't know that the trip has changed my priorities as much as maybe helped me focus on what is really important to me and help me decide what that is. You know, when you're out there in the wilderness you just have the stars, the streams, and the sky, you realize that all the little things that you worry about here, this kind of stuff you realize doesn't mean anything in the grand scheme of things."

Another participant with a disability stated:

"I'm more willing to try things now than I was before... I think I am more outgoing. More willing to get out and about and do things than sit here at home."

A participant without disabilities stated:

"It made me more, well, as you get older, you think, "I'm not going to do this or that or this" and you have to do everything on these trips. So I would say it made me more willing to put myself in a situation and deal with whatever comes. I would say that is a big thing because it gives you a lot of self-confidence."

A participant with a mental illness stated:

"I know you have my disability written down as epilepsy, but I don't see that as a disability at all. That's no problem for me. What's a real disability for me is the manic-depressive illness I have....being out here in the wilderness has been so great for me - it's really helped me. There is always something that needs to be done - and the group! That's good for me. The story of my life has been to start things and never finish any of them...I can even get up (in the wilderness) in the morning, I don't feel like sleeping all the time like I do at home."

One last quote captures the personal growth that occurs in the wilderness setting, and was written in a participant's journal:

"I've had this kind of back and forth feeling from being anxious to go home and reluctance to leave the wilderness. This trip has been good for my soul. I would like to carry forward my motivation and good spirits into my daily life as long as I can...it's funny how I've hardly thought of my other life for this week. I've really been immersed in this trip."

Two other major themes that emerged from the interview data and the trip journals were the **group dynamics**, as the groups became more cohesive, and the **development of relationships and friendships**. The following quotes from participants' interviews and trip journals capture the closeness or cohesiveness that developed in the groups, especially in Group Two.

"I think it's a sense that you're really in it together, especially if you're faced with something like on our second trip where we had an incoming thunderstorm and we had to get camp set up immediately. We just got everything set up before it started pouring really bad, and so there's that part of working like in a group. You have a sense of urgency. You're very excited about making sure you get this done because you want to be dry. It really builds cohesion and you feel really good after it's over, that we worked together and got this done and now everyone's OK."

"I just think the wilderness atmosphere forces people to work together and survive together."

"Today was a test of group cohesiveness. We're all tired and it's raining all morning. At first, everyone was pretty on edge, wanting to do nothing. But once we realized and came to terms with the fact that the rain wasn't stopping and the only way we were getting home was to do what we needed to do in spite of the rain, we became really efficient and I almost had fun being rained on."

"These trips put philosophy into practice. Nobody would ever say that integration is bad and that you shouldn't have these kids in your classroom or that you shouldn't have these employees on your job site, because that's the politically incorrect thing to say. But when it comes right down to it, until you have personal experience with, until you can put names to a situation, until you can know me as Rick instead of a person with a disability, philosophy doesn't mean anything."

The following comments from participants reflect the types of friendships and relationships formed during the study:

"The best thing on the trip was associating with Annette and Drew (two participants with developmental disabilities) because I really don't interact with people with disabilities in my daily life. I've learned more about how two people with disabilities live on a daily basis, but most important I got to know them as people, and I've shared a lot of joyful and warm

moments with them. I have a much better grounding in interacting with disabled people than I did before. All the courses or workshops in a workplace for sensitivity training don't mean anything compared to actually developing relationships with people."

"I think I have made friendships on the trips. I have a problem defining it as "friends" because I haven't kept in touch or spoken with anyone from the group. However, I feel that on wilderness trips, you can't help but to get to know people, and we shared quite a bit of ourselves and our abilities and our disabilities, and we had to depend on each other on those trips. I would consider any one of them a friend. I look forward to seeing them again and going on another trip."

One participant with a traumatic brain injury, who had several conflicts with group members while on the trips, later wrote this in his journal:

"The best part of this trip is that the people who came with me had so much concern for me. They wanted , I believe, to be sure I was being very responsible and respectable. But I think the best part is that they wanted be to sure I was learning a lot and having a lot of fun."

In summary, the results showed that many positive changes took place in participants during the three year study. The next section discussed the results and outlines further research needs.

## Discussion and Conclusions

This section will provide a brief discussion of the findings of the study, describe implications from those findings, and outline issues and further research.

### What do the results mean?

Four main variables will be discussed in relation to the results of this study: outdoor skill acquisition; changes in attitude toward people with disabilities; friendship or relationship development; and, impact of the experience on other life areas.

#### **Outdoor skill acquisition:**

The results obtained on the canoe task analytic assessment indicate that integrated outdoor adventure experiences appear to be effective in achieving mastery of the skills involved in canoeing. Specifically, the skills needed to load, paddle, and navigate a canoe were learned and maintained by all participants with disabilities in both groups. In addition, it appears that participants were maintaining those skills over time. Although Wilderness Inquiry does not focus on skill development as a main goal in its program, it is still achieving a high level of skill mastery on the part of the participants. During longer trips, skills continued to improve daily, emphasizing trip length as a factor in allowing participants to gain more independence and master more demands of the activities. It is interesting to note that many of the participants had multiple or severe disabilities, both physical and cognitive, yet all were able to achieve some level of mastery in canoeing. Canoe skill proficiency allowed participants with disabilities to take a more active role in the trips, allowing them to achieve a more equal status with other group members. This may in turn have led to more positive attitudes toward disability and more social inclusion.

#### **Changes in attitude toward people with disabilities:**

The subjects in this study were a voluntary sample, which helped to explain the initial high positive attitudes toward people with disabilities. This positive attitude was maintained across time by both groups, even after spending several days together in challenging situations in a wilderness setting. The experiences the groups underwent, living, working, and playing together for several days at a time, put their positive attitudes "to the test". Despite this, the groups' attitudes remained positive. The insights that participants gained, as reflected in the qualitative data, helped to possibly redefine their positive attitude to a more individualistic and less stereotypic way of thinking about people with disabilities. These individualistic attitudes appear

to have generalized beyond the outdoor experience in which they were formed to everyday life. Even though there is a weak link between attitude and behavior, the predisposition to behave positively toward people with disabilities was established through involvement in the adventure experiences.

### **Friendship or relationship development:**

Both groups, though they differed from each other, gained in group cohesiveness, group expansiveness, and individual choice status. Group members also felt friendships had formed with other group members.

Group cohesion, or the closeness of the group members to each other, improved dramatically over the three year study. By the end of the study most members chose each other with whom to be friends and to go canoeing. This group cohesion facilitated friendship formation and improved trust.

Group expansiveness, or openness to forming new relationships, also improved dramatically over the course of the study. Group One, which began the study less open and more guarded, showed the most change. By the end of Year Three, participants in this group were more willing to choose others in their group as canoe partners than were the members in Group Two, who began the study being more expansive. This willingness to form relationships reflects the trust that developed between group members as they participated together in outdoor adventure experiences in remote areas of the country.

Individual choice status, or how much each individual was chosen as a friend by other group members, increased for all participants in both groups. This increase in choice status was maintained over time and appeared to be stable. Although people did not maintain contact with each other outside of the outdoor adventure trips, they still thought of the other group members as friends who had made a significant impact on their lives. These context-related friendships may be just as important in one's lives as are friends who are seen on a regular basis. They enrich one's life and add diversity and depth to one's perspectives of community. There appeared to be no difference between the individual choice status of participants with or without disabilities when visually inspecting the graphs in Figure Five and Figure Six. Thus, participants were not choosing each other as friends based on the presence of a disability, but rather for other individual differences, such as personality or sense of humor, or personal warmth.

### **Impact of trip experiences on quality of life and other daily living areas:**

In general, participants felt some positive effect on the major life areas of recreation, tolerance of stress, interpersonal relationships, social activity, mobility, and tolerance of others. Less positive effects were felt on employment and education. Some of the major positive changes identified by participants included a more positive attitude toward people with disabilities, increased sensitivity to the needs of others, personal growth, increased self confidence, improved self esteem, more motivation for life activities, increased sense of priorities in life and increased relaxation, improved ability to handle stressors, and increased respect for nature.

Participants also felt a sense of friendship and belonging as a result of being a part of the groups they were in. They felt the benefits of being a part of a caring, accepting group of people.



### **What were some issues that arose during the study?**

Perhaps a major issue that surfaced in this study was the need to address the involvement level of people who typically fall through the cracks in many systems. In this study, there were two participants who were difficult to maintain in the study. One participant, Ladd, had difficulty following through on the obligations of the study and ended up participating in only the first trip. The other participant, Henry, had difficulty with social skills and with group living. Perhaps due in part to the traumatic brain injury he had sustained, he also had a difficult time following through on the expectations of the study. On the last ten day trip in the study (Year 3), when the group was about 1500 miles from home, he demanded to be sent home and was put on a plane to do so. These two individuals typify the "difficult clients", who have poor social skills and poor adaptive behaviors. They are the people most in need of social integration strategies, and yet are the most difficult to help belong to or participate with a group.

Another issue raised in this study was the positive, proactive perspective the volunteer sample held toward disability in general. The people who participated in this study, and in general in most Wilderness Inquiry trips, may be the people who need this type of social integration experience the least. How to attract and involve people with less positive attitudes is an issue that needs to be addressed by Wilderness Inquiry and by society in general.

### **What are the implications of these results for social integration and outdoor adventure programming?**

#### **Implications for providing integrated outdoor adventure programming:**

This study helps to support the need for and effectiveness of outdoor adventure programming. The results of the study help to substantiate the methods used by Wilderness Inquiry in providing adventure-oriented wilderness-based experiences to mixed ability groups. The focus on group dynamics and social integration is effective in helping diverse people pull together into a functioning "mini-community".

The gain in skills shown by participants with disabilities, and the resulting impact of that skill development in group status, substantiates the need to focus on skill instruction during trips. The development of curricula for outdoor skill instruction, as was accomplished in another component of this project, may be just as important to social inclusion as it is to physical skill development.

The wilderness setting is crucial in helping groups form and perform together. The theme of "the wilderness" permeated through most trip journals and interview transcripts. Although Wilderness Inquiry could teach outdoor skills and promote social inclusion in other settings, the wilderness environment appears to intensify

and focus those efforts to produce a very dramatic impact on group participants. This appears to lead to a more accelerated group development process, leading in turn to more effective social integration.

Concomitant to the use of the wilderness environment is a need to educate group participants about minimum impact camping and traveling techniques.

The use of programmatic adaptations to open up the wilderness to people with multiple disabilities, instead of environmental or physical modifications to the area, appears to be an effective means of not only promoting preservation of wilderness, but of increasing group cohesion and social inclusion. This practice should be continued in future program efforts.

### **What future research needs to be completed?**

#### **Research still in progress:**

Other data was collected in association with this three year longitudinal study. It is still in the process of being analyzed and interpreted.

A major question asked in this research is, "What is happening **during** the trips to produce the outcomes described in this study?". Qualitative data from interviews, trip journals, and field observation are still being analyzed to answer this question. In addition, a random sample of trip participants completed questionnaires during the trips using the experience sampling method, to help to further understand the processes at work during the trip experience related to positive outcomes. This data is also being processed. The results of this data will hopefully give more definition or clarity to practices used by outdoor leaders in facilitating social integration.

#### **Future research:**

Future research is needed to look more in-depth and in a longitudinal sense at the impact of the trip experience on the daily lives of participants. Often, the impact of the trip on one's life is not felt until much reflection has occurred. It is possible that the effects of a group wilderness experience have a stronger impact on one's life than was reported by the participants in this study, who responded on a short-term basis.

Future research is needed to document more precisely the practices and procedures, the skills, the styles, and the overall role of the trip leader in facilitating social inclusion on outdoor adventure experiences. Future research should also be directed at investigating the generalizability of those practices to other community recreation programs where social inclusion should be a goal.

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Appendix A

Compilation of Data  
Collected During the  
Three Year Longitudinal Study

Appendix B

Canoe Skills Task  
Analytic Assessment

Appendix C

Adapted Version of the Peer Acceptance Scale/  
Attitude Scale

Appendix D  
Sociometric Assessment

## Appendix E

### Quality of Life Interview Protocol