

## Integrating Children With Severe Disabilities for Intensified Outdoor Education: Focus on Feasibility

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### **Abstract:**

The feasibility of an intensified (i.e., all-day-for-2-weeks) integrated camping experience for children with and without severe disabilities was evaluated as was the impact of integrated programming on camp staff members' attitudes. Procedures employed for promoting social interactions included positive reinforcement and cooperative learning strategies. Task-analytic procedures were used to teach campers with severe disabilities a domestic skill and a life-long leisure activity. By the end of the 2 weeks, children with severe disabilities demonstrated substantially improved skills in targeted activities. Furthermore, campers without disabilities substantially increased their prosocial interaction bids, and ratings reflective of friendship increased significantly. Also, staff members' perceptions of operating an integrated camp versus a segregated one and their perceptions of the presence of participants with disabilities as facilitative of camp operations improved significantly.

### **Article:**

Outdoor education in the form of organized camping has always had a socializing aim in America. Mitchell, Robberson, and Obley (1977) reported that in 1890, the first private camp dedicated to educational needs was designed especially for boys from well-to-do families who would otherwise "idle" away their summers at resort hotels. In fact, an orderly program of "character building" activities, under the supervision of model adults, was the essential pattern of camping in its early days.

Integrated camping (i.e., camping involving participants with and without disabilities) is at a beginning stage of development. Where it has been attempted, few integrated efforts have involved individuals with severe disabilities. This is unfortunate because, as Schleien and Ray (1988) have documented, carefully planned integrated outdoor programs can be of great benefit to learners with severe disabilities. Similarly, documentation exists that learners who do not have disabilities can profit from sound integrated experiences in terms of their perspective-taking ability and self-esteem (Brown, Branston, Hamre-Nietupski, Wilcox, & Gruenwald, 1979; Voeltz & Brennan, 1984), and judgment of self-worth (Donder & Nietupski, 1981).

Virtually nothing is known, however, about the feasibility of integrating learners with and without severe disabilities in an intensified, integrated camping program. Thus, the primary purpose of this investigation was to determine the effects of integrating learners with severe disabilities and learners without disabilities in a 2-week round-the-clock camping program. Outcomes of interest were campers' attitudes, social interactions, appropriateness of behavior, and leisure and daily living skills development. A second purpose was to assess the impact of integrated programming on the attitudes of camp staff members, some of whom had experienced only segregated, "handicapped-only" camping for nearly 20 years prior to the present study.

## **Method**

### ***Participants***

Three children with severe disabilities participated in the integrated camp. They lived at home with their parents and attended special education classes in regular elementary schools. The children were selected on the basis of their parents' willingness to allow participation in an integrated camping experience and their low scores on the Topeka Association for Retarded Citizens' (TARC) scale, a standardized adaptive behavior rating scale (Sailor & Mix, 1975).

Molly (real names not used), was a 9-year-old girl diagnosed as autistic. She did not actively seek interactions with adults, except to occasionally sign for assistance. She also tended to ignore peers. Molly needed assistance with personal hygiene and dressing and exhibited tantruming behavior. She was nonverbal, although she had a limited sign language repertoire. Her score on the TARC, which has a maximum score of 196, was 130.

Mary, an 11-year-old girl, had severe mental retardation and a profound bilateral hearing loss that was partially corrected with a binaural hearing aid. Although she was able to follow one-step directions and seemed to understand simple phrases, Mary did not actively seek interactions with peers or adults. She needed reminders to toilet herself and required assistance with personal hygiene and dressing. Her TARC score was 123.

John, a 9-year-old boy, had severe mental retardation and arrested hydrocephaly. Although John was nonverbal, he tried to imitate spoken words and sounds and had a modest sign language repertoire. John interacted with adults and peers, although he tended to seek out adults for interactions more than peers. He required prompting to initiate and maintain grooming and personal hygiene behaviors. His score on the TARC was 142.

Campers without disabilities were 3 boys and 5 girls who volunteered for the program. They ranged in age from 10 to 13 years and attended public or parochial schools throughout the Twin Cities metropolitan area. Prior to registering, these 8 participants and their parents were informed that 3 children with severe cognitive, sensory, and physical disabilities would also be attending the camping program. Most of the children without disabilities had minimal or no previous direct exposure to individuals with severe disabilities.

### ***Setting***

Owned and operated by the Amherst H. Wilder Foundation, Wilder Forest, the site of this study, is a 980-acre outdoor education environment serving a variety of human service agencies from the Twin Cities area and the upper midwest. Facilities include camp grounds, handicapped-accessible earth-sheltered lodges, a dining hall, 70-acre farm, greenhouse, orchard, and a swimming beach. During the study participants resided in an earth-sheltered lodge that contained two large sleeping rooms—one for boys and one for girls—a kitchen, dining and living area, and two bathrooms. Throughout the 2 weeks, campers lived, played, and worked together continuously.

### ***Nondisabled Participant Peer Training***

When the participants with and without disabilities and their parents arrived at Wilder Forest, an introductory meeting was arranged for staff, participants, and parents. During this meeting, the parent of each child with a disability described his or her child's communicative behaviors, likes and dislikes, and preferred activities.

A more extensive informal session occurred during the second day of camp, when campers without disabilities were taken aside to view a slide—tape show called *Special Friends* (Voeltz et al., 1983). This audio—visual presentation depicted children with and without severe disabilities engaged in a variety of integrated, age-appropriate recreational activities, including outdoor education activities. Staff members emphasized that campers with disabilities had come to camp for the same reasons the campers who were not disabled had, namely, to make new friends, increase outdoor skills, and have fun. Similarities between the two groups of campers in terms of their leisure and social interests were discussed, and manual communication signs (identified by the parents of the children with severe disabilities as ones they used frequently at home) were taught and practiced.

Training involved preparing participants without disabilities to interact cooperatively and assist their peers with disabilities as needed. For example, they were instructed to begin an activity by offering their companions simple verbal instruction, then to proceed, if necessary, with demonstrating the task. If that did not suffice, they were instructed to help their companions with gentle hand-over-hand guidance. Throughout the training, they were encouraged to offer participatory assistance but not to force participation. Their role as friends, rather than teachers or tutors, was emphasized repeatedly. Following the training sessions, two groups of 4 campers each (1 with severe disabilities and 3 without disabilities) and one group of 3 campers (1 with severe disabilities and 2 without disabilities) were constructed based on considerations of gender and mutuality of interests.

### *Activities*

A typical day commenced with integrated groups of campers using a wood stove in the lodge to prepare breakfast together. Following morning meal cleanup, they participated in a craft activity in their integrated groups. At noon, campers ate lunch together in the central dining hall. Afternoon activities included integrated hiking, boating, fishing, and swimming in their respective groups. Late in the afternoon, groups took turns preparing dinner and doing chores at the farm. Evening activities included integrated games, hayrides, folk dancing, and campfire programs.

Clearing their own dishes from the table after meals and preparation for swimming were targeted as instructional tasks for campers with disabilities for several reasons. First, both activities are chronologically age-appropriate, and many of the component steps of both activities can potentially generalize to other settings. Second, clearing a table is a useful domestic skill, both at home and in a community restaurant, where diners often bus their own dishes; similarly, swimming is an enjoyable task, with varying entry points and lifelong potential for enjoyment of discretionary time.

The morning craft activity (i.e., woodcraft or woolcraft) and an afternoon outdoor activity (e.g., hiking, boating) were targeted as times to assess the appropriateness of social behaviors of campers with disabilities and to record interactions between them and their peers without disabilities.

### *Experimental Conditions*

A quasi-experimental (i.e., pre—post) design was used to examine the effects of training.

**Pretest.** Nonintrusive observations occurred prior to the cooperative interaction training of peers without disabilities. For these observations, instances of appropriate social behavior and social interaction were recorded during the morning craft period and the afternoon outdoor activities. Operational definitions that governed observations are as follows:

***Appropriate social behavior:*** engaging in goal-directed activity, including appropriate use of materials and/or equipment in a chronologically age-appropriate manner, and/or oriented toward activity, in position to engage in activity, or in designated activity area; may include offering or receiving materials or assistance and/or setting up and putting away materials.

***Inappropriate social behavior:*** engaging in nongoaldirected, nonfunctional, purposeless, stereotypic, or other behavior out of context to the activity, including manipulation of materials and/or equipment in an inappropriate or incorrect manner (e.g., pounding table with object, throwing equipment not designated to be thrown), not participating in an activity, wandering away from the designated activity area, and/or not being in position to engage in activity.

***Initiating social interaction:*** child actively seeks social contact with peer by touching, gesturing to, vocalizing to, or talking to peer; contact must be directed toward a specific person. (An initiation was any behavior that began an interaction between two children who had not interacted for the previous 3 seconds.)

Receiving social interaction: child is touched, gestured to, given directions, or questioned by peer. (An

interaction was coded as being received only when the initiations that preceded it were separated by 3 or more seconds.)

**Intervention.** Social reinforcement of occurrences of appropriate behavior on the part of campers with disabilities and contingent reinforcement of peer social interactions (but no prompting of these behaviors) commenced immediately following the pretest and continued throughout intervention. A rotation system applied to cooperative interaction instruction was instituted during the craft activity. Campers without disabilities took turns within their small groups in assisting peers with disabilities to complete an individual craft project. A rotation system was not used during the other social interaction activities (e.g., boating, fishing) because individual products were not part of these activities.

Adult leaders assessed campers with disabilities on two skills (i.e., table clearing and swimming preparation). Employing a task analytic (test—teach) approach, leaders taught the task steps that were not completed independently. During this instruction, an error-correction procedure consisting of verbal instruction, then modeling plus verbal instruction, and then physical assistance with verbal instruction, with social praise following each correct behavior, was implemented for each step of the task analysis.

All of the activities were implemented by staff members from Wilder Forest. Similarly, all contingent social reinforcements were delivered by these staff members, following several training sessions in which they learned how and when to reinforce the campers.

### ***Observational Procedures***

A trained observer from the University of Minnesota (a data-collection specialist) recorded instances of appropriate behavior by participants with disabilities. In addition, social interactions initiated by campers without disabilities or reciprocated by campers with disabilities were recorded throughout morning craft and afternoon outdoor education activities. A system combining interval and duration data-collection measures was used to summarize these behavior occurrences. To accomplish this, we prepared an audiotape recording to inform the observer (through a headset) which camper to observe and the type of behavior to observe. Two types of observations occurred: During the first observation the number of seconds that campers with disabilities emitted appropriate and/or inappropriate behavior was timed and recorded; during the second observation the frequency and type of social interactions that occurred between peers was determined. Each interval, which consisted of these two types of observations, was 45 seconds in length. The mean number of intervals observed per student/per activity was 9.9.

Interobserver reliability was calculated through having a second trained University observer record behavior of the same participants concurrent with the primary observer during 33% of the intervals. Interobserver reliability of initiated and received social interactions for the morning craft activity and afternoon outdoor activities averaged 88% and 87%, respectively, across campers and across all phases of the program.

## **Results**

### ***Skill Acquisition and Frequency of Appropriate Behaviors Emitted by Campers With Disabilities***

Participants with severe disabilities displayed a substantial increase in the number of steps performed independently in the activities of clearing the table and swimming preparation. As can be seen in Table 1, Molly, Mary, and John exhibited a relatively low frequency of independent behavior during the pretest phase of the study as compared to their substantially higher performances during intervention.

During crafts and outdoor education activities, participants with disabilities displayed slight reductions in socially appropriate behavior, on a pre—post basis. (Pre—post tests of significance were not conducted on either skill development or frequency of appropriate behavior because of the small number of campers with disabilities.)

Table 1  
Skill Development and Appropriate Behavior of Participants With Severe Handicaps

Outcome	Molly	Mary	John
Skill development <sup>a</sup>			
Table clearing			
Pretest	15	10	12
Posttest	46	61	78
Swimming			
Pretest	09	57	11
Posttest	51	76	82
Appropriate behavior <sup>b</sup>			
Crafts			
Pretest	79	98	96
Posttest	64	96	85
Outdoor activity			
Pretest	83	100	98
Posttest	69	99	86

Note. Pre-Post differences not tested for significance because of small *n*.

<sup>a</sup> Mean percentage of steps performed independently by participants with handicaps. <sup>b</sup> Mean percentage per minute by campers with handicaps.

### Social Interaction Bids by and Attitudes of Campers Without Disabilities

Social bids emitted by participants who were not disabled toward campers with disabilities were compared on a pre—post basis using a Wilcoxon Matched-Pairs Signed Ranks test (see Table 2). Pre—post differences approached, but did not reach, the .05 level of significance.

Table 2  
Social Interactions by Campers Without Disabilities: Bids Per Minute

Shared activity	Molly		Mary		John	
	Mean	SD	Mean	SD	Mean	SD
Crafts						
Pretest	0	0	.72	.54	.35	.02
Posttest	1.11	1.17	2.01	1.25	2.12	1.94
Outdoor activity						
Pretest	1.06	.56	1.03	.95	.18	.25
Posttest	.61	.67	.93	.86	1.77	1.23

From an attitudinal standpoint, campers who were not disabled participated in an informal "de-briefing" session every evening, without campers with disabilities present. Prior to this discussion, each camper without disabilities received a 5-item questionnaire and was asked to complete it independently by circling numbers on a Likert-type scale that corresponded to his or her perceptions of the relationship between himself or herself and his or her peer with severe disabilities. Table 3 summarizes the results of these daily attitude probes, which reveal generally positive perceptions of the integration experience and a statistically significant,  $p < .05$ , difference in their feelings of friendship toward their peers with disabilities (see Question 4). (The Wilcoxon test of significance was also employed for this analysis.)

Table 3  
Ratings by Campers Without Disabilities Regarding Their Feelings Toward Campers With Disabilities

Question	Pretest		Posttest	
	Mean	SD	Mean	SD
1. If my friend could tell me how much I helped him/her learn today, he would say I helped him learn (Not much to A lot)	2.13	1.13	2.88	1.64
2. If my friend could tell me how much fun he/she had today, this is what he would circle (Not much fun to A lot of fun)	3.75	.89	4.00	1.07
3. This is how much confidence I have in helping my friend learn from me (Not much confidence to A lot of confidence)	3.50	1.51	3.75	1.38
4. My feelings of friendship toward my friend are (Not friends yet to We are pretty good friends)	3.25	1.04	4.25	.89*
5. This is how much I liked being with my friend today (Not at all to Liked a lot)	4.13	.84	4.13	.64

Note: Ratings were made on a 1 (low) to 5 (high) basis. Ratings by nondisabled campers were summed across all 14 days and across all campers with disabilities. Pre—post differences,  $p < .05$ .

### Staff Perceptions

Table 4 summarizes staff ratings of the integrated camping experience on a pre—post basis. Before and after the



integrated camp program, staff members received questions that were designed to solicit their feelings about the integrated program. Overall, as revealed in Table 4, staff displayed more positive attitudes toward the integration of the residential camp following intervention. Two of the items showed significant differences,  $p < .05$ , pre to post, using the Wilcoxon test.

**Table 4**  
*Pre-Post Attitudes of Staff Members (N = 13)*

Essential content of questionnaire/items <sup>a</sup>	Pretest		Posttest	
	Mean	SD	Mean	SD
Presence of people with disabilities facilitates Wilder Forest operations?	4.46	.66	5.00	0.00*
Perceived level of enjoyment across participants with disabilities?	4.62	.65	4.92	.28
Perceived benefit to participants with disabilities?	1.62	.77	1.54	.78
Perceived benefit to participants without disabilities?	1.31	.63	1.70	.63
Desire for more integrated programs at Wilder Forest?	1.62	.51	1.46	.66
Perceived participation success of campers with disabilities?	2.42	.79	2.00	.71
Perceived acceptance of participants with disabilities by participants without disabilities?	3.92	.64	4.15	.56
Desire of staff for more integrated versus segregated camping?	4.00	.82	4.62	.51*
Ease of operating an integrated versus a segregated camping experience?	2.23	1.54	2.31	1.11

<sup>a</sup> Ratings made on a scale from 1 (lowest) to 5 (highest).  
\*  $p < .05$ .

## Discussion

Taken together, findings of increased social interaction bids and perceptions of friendship by campers without disabilities, increased skill acquisition in campers with severe disabilities, and the positive ratings of staff members concerning the integrated camping experience appear promising from a feasibility standpoint. However, providing a relatively intensive, integrated program is not free from challenges of a practical, experimental, or conceptual nature.

From a practical standpoint, participants without disabilities were, at times, perplexed by the inability of their peers with severe disabilities to communicate with them: There were occasions when tantruming on the part of a camper with a disability dismayed the other campers. At these times, a round-robin (rotating) interaction pattern reduced total participatory responsibility for each of the campers without disabilities. Debriefing sessions revealed the salutary effect of this procedure. Relatedly, during craft and outdoor education activities, campers with disabilities, on a pre—post basis, exhibited a slight decrease in their percentage of appropriate behaviors. It seems likely that these small decreases reflect the prolonged periods of prosocial bids that campers with disabilities were receiving, likely a new experience for them. Fortunately, toward the end of the program, the percentage of appropriate behaviors was increasing.

From a staff perspective, it is evident from the questionnaire results that staff members valued the integrated program and wanted to conduct other programs in the same manner. At the same time, from a practicality standpoint, they indicated that integrated programs are more difficult to implement. We believe that their perceptions are accurate and reflect, possibly, the tradition of primarily segregated programming at Wilder Forest for people with disabilities. As staff members gain more experience with integrated programming, it will probably become easier for them to design and implement one successfully.

Possibly the most valid practical indicator of feasibility is the fact that not one of the 11 campers dropped out of the program. This was extremely encouraging because most of the campers with disabilities, and a few of those without disabilities, had never before been away from home for 2 consecutive weeks. Despite some bouts of homesickness and "competition" from activities occurring at home, they all stayed on, every hour for the full 2 weeks.

From an experimental standpoint, particularly from an external validity perspective, findings should be viewed

in light of several limitations. First, the number of participants in the study (N = 11) was relatively small. (The number of participants was dictated by the capacity (12) of the co-educational facility that was available on a 24-hour basis at Wilder Forest.) Nonetheless, replication of the procedures with a larger number of campers is recommended in order to assess generalizability of the procedures.

Second, although the 2-week length of the present study was relatively long in terms of contemporary integrated outdoor education efforts, it is not an exceptionally long period from the standpoint of advancing the kind of integration called for in recent federal legislation. Laws such as P.L. 94-142 (The Education for All Handicapped Children Act of 1975) and Sections 503 and 504 of the Rehabilitation Act of 1973 (P.L. 93-112) signal clearly that integration is to be a lifelong proposition. Although we are on the way to achieving this societal goal through programs such as the present one, there is a long way to go in achieving it fully.

Third, although an informal transfer/ generalization probe was conducted (campers planned and delivered a cooperative 4-H wool-craft demonstration at the county fair shortly after the project ended), data were not collected on this phase. Thus, although parents volunteered many positive comments about the demonstration's appropriateness and quality, the question of transfer/generalizability of the integration procedures remains largely unaddressed.

From a conceptual point of view, in spite of the gaps in our knowledge of integration, we are convinced that the social relationships occurring in carefully structured integrated programs such as this one are authentic in terms of "friendliness." However, it is possible that they are somewhat different "friendships" in terms of how children without disabilities ordinarily behave with their usual peers. In this regard, Cole (1986) found that children without disabilities who had been prepared to interact under a Special Friends (Voeltz et al., 1983) structure with children who had both severe cognitive and physical disabilities worked harder and had less opportunity to play as compared to interactions instigated with peers who had severe cognitive disabilities alone. In a related vein, Cole, Vandercook, and Rynders (1987) found that interactions between peers with and without severe disabilities were perceived by the children without disabilities as more fun when peers who were not disabled were 1 to 2 years older. Cole et al. concluded that the challenge of interacting with a peer who has severe disabilities appeared to be met more easily when the peer without disabilities had a couple of years advantage from an age standpoint. This finding runs counter to the popularized belief that children of differing abilities should be grouped according to their mental age (MA) levels, a belief that has resulted in having older (sometimes much older) children with disabilities grouped with much younger children who are not disabled. Our findings suggest that children without disabilities interact effectively with peers based to a large extent on their day-to-day socialization experiences, not on expectations linked to MA as manifested on a traditional intelligence test.

In a related vein, what can be said about the advantages and disadvantages in employing tutorially based versus friendship-based socialization structures? This question is pertinent to the present investigation where outdoor education was featured. The term education implies that teaching (tutoring) should be done. Indeed, the directions that an adult gives to an integrated group set socialization factors and expectations in motion, just as age differences influence social interactions. The dynamics involved in tutorial-type and friendship-type interactions have been conceptualized by Sailor and Guess (1983) as vertical (tutorial) or horizontal (friendship) interactions. Peer tutors interact with peers in a top-down, or vertical, fashion, often assuming the role of a teacher who has an academic goal in mind. In contrast, peer friends interact in a side-by-side, or horizontal, manner with an emphasis on turn-taking and often with a playful, socialization purpose in mind. Obviously, these structures can co-occur (and do so when a peer may assume these roles interchangeably to suit the changing demands of a given situation). Our own bias is to create outdoor education and other recreational settings where horizontal relationships are emphasized because, as Meyer (1987) pointed out, if horizontal relationships are not afforded to children with severe disabilities, they will experience a vacuum of side-by-side interactions. This will be the case because top-down relationships (therapist, teacher, parent) are often so prevalent in their lives.

In spite of the fact that we know something about factors in children and environments that are consequential to interacting successfully, we are unable to answer some of the most fundamental questions. For instance, what metric should we choose for judging a heterogeneous relationship as a true friendship? We cannot shed much light on this question, possibly the most fundamental of all. However, we can suggest an alternative way to think about it. We believe that it is not necessary to set our integration sights so high that we cannot be satisfied unless a heterogeneous relationship "lasts forever" and transcends every conceivable area of both groups of children's lives. Instead, we contend that although professionals are anxiously awaiting the answer to this question, they should be keenly interested in promoting a nondisabled child's capacity for empathy (not pity), feelings of respect for the small accomplishments of others (and the ability to see small accomplishments in the first place), and natural enjoyment in relating to peers who are very different from themselves in terms of ability. Indeed, relationships occurring in the type of integrated situations that were fostered at Wilder Forest may have more lasting value, at least from an attitudinal standpoint, than the evanescent friendships that often occur between children without disabilities. After all, adolescents without disabilities sometimes "change" friends about as often as they change their clothing.

Although we await more answers concerning the penetration value of our efforts, we can already take advantage of the fact that children with and without disabilities who are participating in well-designed, integrated programs are benefiting from them. The concern that students without disabilities might forfeit precious educational opportunities or that only peers with disabilities will benefit from integrated programs seems to be a rapidly diminishing issue as youth-serving, outdoor education agencies such as scouting, 4H, and YMCA programs "live-out" the intent of the laws supporting integrated programming.

A quotation from an article in Scouting (Peterson, 1987) illustrates the important, mutually beneficial, lessons that are available in an integrated program. Called Scouting Together, the program brings troops of boys with and without disabilities together for a one-weekend camporee (an aggregated camping experience). Peterson reported:

Many of the special Scouts needed three minutes and lots of helping hands to traverse the monkey bridge which able-bodied boys cross in 10 or 15 seconds. . . . But there was never a shortage of willing hands to help, and there was no dearth of cheers and cries of "Nice job!" from their buddies and instructors.

It's hard to say whether the special Scouts or their buddies had more fun or learned more. For the nonhandicapped Scouts, especially those who had never before had close contact with disabled people, it was an intense experience. . . . "What most of our boys seem to get out of it is a much greater understanding of handicapped people in general," said [an] Assistant Scoutmaster. ( p. 31)

Willing hands, fun, learning, understanding—all of these valuable outcomes are available to people of all ability levels in a well-run integrated outdoor education program.

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