**LEISURE-DANCE INSTRUCTION FOR SEVERELY AND PROFOUNDLY
RETARDED PERSONS: TEACHING AN INTERMEDIATE
COMMUNITY-LIVING SKILL**

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We evaluated an approach for teaching an intermediate community living skill via a leisure-dance activity to institutionalized severely and profoundly retarded persons. The targeted skill was considered as intermediate in contrast to a community living skill per se because it was based on successful performances of higher functioning, noninstitutionalized retarded persons as opposed to nonhandicapped individuals. Definitions for appropriate dancing were established and then validated through observations of the performance of retarded persons living in the local community. The dance skills were then taught to four participants through serial training in leg movements, arm movements, and coordinated leg and arm movements, plus follow-up trainer supervision. Generalization was also programmed by way of multiple trainers and training settings. Results during structured assessments showed that all four residents acquired the dance skills and that both serial training and follow-up supervision were necessary for skill acquisition. Generalized increases in appropriate dancing at dances attended by the participants and retarded persons from the community were also demonstrated. However, in most cases some active supervision by caregivers was needed to enhance the generalized improvements. Results are discussed in terms of the applicability of this approach for validating goals when training other community-related skills to low-functioning populations.

DESCRIPTORS: social validation, retarded persons, generalization, community survival skills, leisure skill activities

One of the most influential movements affecting services for mentally retarded persons during the last decade has been deinstitutionalization. As a result, thousands of previously institutionalized retarded individuals now live in community settings (Scheerenberger, 1981). Concurrent with this trend, an abundance of applied behavioral research has attempted to develop and refine methods for training community living skills to the mentally retarded (see Cuvo & Davis, in press, for a review). For the most part, deinstitutionalization activities and related research have focused on persons whose

handicaps fall on the less serious end of the continuum of mental retardation; the mildly and moderately retarded. Much less attention has focused on the severely and profoundly retarded.

A major factor for the relatively little attention given to training community living skills to the severely and profoundly retarded is the serious skill deficits of this population. That is, given the current state of habilitative technology, it is unclear how many of the behavioral deficits of these individuals can be overcome to allow them to participate in community environments (Whitman, Scibak, & Reid, 1983). Although totally independent functioning in community settings may be unrealistic, training goals could be established with a focus on intermediate steps to community living. For example, an intermediate step for training the community living skill of public street crossing (Page, Iwata, & Neef, 1976) would be training

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independent travel skills on institutional grounds (Gruber, Reeser, & Reid, 1979).

A primary concern when designing community-living training programs for institutionalized persons is the social validity of the training goals. As discussed elsewhere (Kazdin & Matson, 1981), efforts are needed to ensure that target skills have an empirical basis to document their importance. When focusing on intermediate steps to community living, it seems particularly important to substantiate the validity of target skills because the behaviors are less likely to be observed among normal community populations than are community living skills *per se*. Hence, the relevance of the intermediate skills may not be immediately obvious.

One potential method for validating the importance of intermediate community living skills targeted for institutional populations is to select as a training goal the performance of less seriously retarded persons who reside in a noninstitutional setting. More specifically, where skill deficits appear too prohibitive to allow institutionalized severely and profoundly retarded clients to function as proficiently as their nonretarded peers, performance of noninstitutionalized mildly and moderately retarded persons could serve as an empirical norm for training programs with the former population. If severely and profoundly retarded individuals successfully acquired skills demonstrated by their less seriously retarded peers, then not only would they be functioning more skillfully, but their appropriate participation in community-type activities with these peers is likely to be enhanced.

A program area that may especially benefit from such a "peer" validation of training goals is leisure activity. The development of acceptable leisure skills according to community standards has been recognized repeatedly as an habilitative need of the institutionalized severely and profoundly retarded (e.g., Reid, Willis, Jarman, & Brown, 1978), and such skills have been the focus of numerous investigations (see Whitman *et al.*, 1983, for a review). However, in many cases, determining what constitutes an appropriate leisure skill is difficult because the appropriateness varies according to what

happens to be socially popular in a given situation. For example, dancing is a common leisure activity in many communities but the specific type of dance that is popular can vary across time and different community groups (e.g., square dance versus disco). Hence, the social norms of the community should be considered when designing training programs.

We evaluated a program for training a leisure-dance skill to institutionalized severely and profoundly retarded persons using the dance performance of noninstitutionalized mildly and moderately retarded individuals as the training standard. Dancing was chosen because dances were regularly occurring social events for retarded persons who lived in the local community. Teaching the more seriously retarded institutionalized individuals to dance was viewed as a method of training an intermediate community living skill.

METHOD

Participants and Setting

Five ambulatory, mentally retarded clients of a state residential facility participated. Ages ranged from 14 to 19 years and, based on levels of intellectual and adaptive functioning as described by Grossman (1977), two participants were severely retarded and three were profoundly retarded. All residents displayed independence in basic self-help skills such as toileting and received training in more advanced self-care skills. Two residents engaged in simple conversations using 1–3-word phrases, although the context of their verbalizations was often inappropriate. The other three participants only occasionally engaged in 1-word verbalizations. Receptive language skills were more advanced than expressive skills, with each resident usually comprehending 1–2 phrase requests of staff. Three of the residents engaged in intermittent stereotypic behaviors and no resident was seriously aggressive. The five participants resided on one living unit in the facility with 10 other residents. These particular individuals were selected because they were among the most skilled residents at the facility and

were the ones most likely to move to a group home. Also, prebaseline observations had indicated that each resident was noticeably deficient in dance skills when compared to the dance skills of non-institutional-based retarded persons.

The setting included three locations: training rooms and offices in the institution, the living room on the residents' living unit, and a dance hall of a community building owned by the local Association for Retarded Citizens (ARC). The training rooms and offices were used for training the residents, the living unit was used for regularly occurring facility dances, and the ARC dance hall was used for observing the dance behaviors of retarded individuals living in the community.

Trainers

There were three groups of trainers: experimental trainers, generalization trainers, and normal-setting trainers. The experimental trainers included a recreation therapist (experimenter) and two recreation therapy assistants who worked at the facility. Each person had received on-the-job training in behavior modification. The generalization trainers were also facility employees and included a unit supervisor, a bachelor's-level psychologist, a master's-level psychologist, and a general therapy assistant. All generalization trainers had received on-the-job training in behavior modification and two had formal educational training in the field. The normal-setting trainers included five direct care staff with on-the-job training in behavior modification and 12 volunteers who had no specific experience in behavior modification but who were familiar with residents at the institution. The volunteers were from the local community and frequently helped with recreational activities at the facility.

Apparatus

The apparatus consisted of a stereo sound system and tapes of 10 dance songs consisting of rock/disco music. The songs were recommended by members of two bands who played at community ARC dances as being representative of the songs they played at the dances.

Behavior Definitions

Dance behaviors. Definitions of dance skills were based on experimenter observations of the dance behaviors of both retarded (mildly or moderately) and nonretarded persons of the approximate age group as the participants. Also, behaviors were selected that appeared to be essential components of different dance styles (i.e., different dance styles seemed to be variations on a basic set of behaviors). Additionally, definitions were established with the goal of representing popular dance steps but not including behaviors that were likely to attract special attention to the participants such as noticeably gross motor movements.

Specific definitions were as follows: *Dancing*—continuous body movement in an apparent attempt to dance while music is playing. *Appropriate dancing*—each of the following must occur: (a) both arms are moving close to the body within an imaginary cylindrical plane that exists 18 in. (0.46 m) from the person's torso and both arms are bent at the elbows; (b) both legs are moving close to the body (same 18 in. boundary) in a repetitive, alternating stepping motion with either an observable bend in the knee or each foot coming completely off the ground; and (c) no occurrence of inappropriate dancing behaviors, including any grossly nonsocial behavior such as screaming and holding onto an object.

An integral component of the definitions was an *apparent attempt* to dance (see description under *Dance training* for additional discussion of appropriate dance behaviors). This component was designed to exclude such behaviors as running or walking that may topographically resemble certain aspects of dancing but are obviously not dancing behaviors per se. Also, a special note was added to the definitions such that if a resident was dancing appropriately and touched his or her partner in a socially acceptable manner such as holding hands, the response would be scored as appropriate, even if the behaviors involved in touching (e.g., extending the arm beyond 18 in.) contradicted the definition for appropriate dancing.

Trainer behaviors. Three categories of trainer behavior were defined and monitored as a method

of evaluating whether the experimental procedures were actually implemented as intended. First, trainer instruction was defined as a vocalization that appeared to be intended to evoke dancing from a resident (e.g., "Okay, let's dance."). Second, praise statements were defined as approving statements directed toward a resident while a resident was dancing or within 5 seconds after a resident stopped dancing (e.g., "Good dancing!"). Separate instructions or praise statements were scored only if they were separated by at least a 5-second pause. Third, physical guidance was defined as physically touching a resident in an apparent attempt to evoke dancing, such as grabbing a resident's hand(s) while dancing. In order for separate instances of physical guidance to be scored, the trainer had to terminate all physical contact with the resident and then reinstate the contact. Whenever a category of trainer behavior was scored, the name of the resident to whom the behavior was directed was recorded.

Observation System

Observers and observer training. Observers included a practicum student, a staff member from the facility, and three experimenters. The practicum student was not informed when experimental conditions were changed. Observers were trained via instructions from an experimenter, observing a staff member demonstrate various dance behaviors and receiving feedback from the experimenter, observing a videotape of staff members dancing and receiving feedback, and observing with feedback during prebaseline sessions. Additionally, two measures were included to control against observer drift (Kazdin, 1977). First, videotaped samples were used periodically to retrain observers according to a standard key. Second, one observer was not trained until approximately three-fourths of the study was completed; at that time she was trained with the same procedures used with the initial observers.

Observation procedures. During an assessment session, each of two residents was observed individually within alternating 1-minute periods. Within each observation minute, observers used a

10-second observe and 5-second record procedure (i.e., after observing a resident for 10 seconds, the observer had 5 seconds to record whether or not a target behavior occurred). A partial interval procedure (Powell, Martindale, & Kulp, 1975) was used to record the occurrence of dancing. For appropriate dancing to be scored, the resident had to be dancing appropriately during the entire time (whole interval) he or she was dancing. Dancing and appropriate dancing could each be recorded only once per interval.

In addition to observations of resident dancing during assessments, data were collected during generalization dances held in the evening in the living room area of the residents' living unit. Observation procedures were the same as during the assessment sessions with the following exceptions. First, observations were conducted through a one-way window as opposed to within the same room as the residents, except on two occasions when observations were conducted from one corner of the room due to the observation window being broken. Second, because all the experimental participants could be present at the dance as opposed to only two during assessment sessions, the order of observing the residents was altered. The residents' names were listed in a nonsystematic order and each individual was observed in that order for 1 minute, using the same interval procedure described previously. After completing the entire list of residents (i.e., four observation intervals per resident), the list was completed a second time.

Probes on trainer behavior were conducted during 70% of the assessment sessions. The observer recorded each occurrence of the three trainer behavior categories. A continuous recording, minute-interval system was used in which a tally was marked every time a targeted behavior occurred during each minute of the assessment session.

Reliability. Reliability checks on resident dance behavior were conducted by two independent observers during 58% of the assessment sessions and 35% of the generalization dances, including during each experimental condition. Percentages were calculated separately for overall, occurrence, and non-occurrence reliabilities (Bailey & Bostow, 1979) on

an interval-by-interval basis. In each case, the calculation formula was the number of agreements divided by the number of agreements plus disagreements and multiplied by 100. An agreement was scored only if both observers recorded the occurrence, or nonoccurrence, of the same behavior.

Overall reliability for dancing during the assessments and generalization dances averaged (mean) 97% (range 95% to 99%) and 95% (86% to 100%), respectively. Reliability for the occurrence of dancing was 89% (62% to 95%) during assessments and 92% (83% to 100%) during the generalization dances, and nonoccurrence averages were 66% (50% to 92%) and 72% (19% to 99%), respectively. The lower percentages for occurrence and nonoccurrence reliabilities resulted when there were few opportunities for agreement between observers. To illustrate, with the 62% occurrence reliability figure with one resident, there was only 0–1 disagreements between observers on the occurrence of dancing on 76% of all reliability checks. Also, on 88% of all reliability checks across all participants during assessments, only 0–1 disagreements between observers on nonoccurrence of dancing were recorded.

For appropriate dancing during assessments overall reliability averaged 94% (89% to 96%), occurrence 47% (0% to 76%), and nonoccurrence 85% (70% to 96%). Respective percentages during generalization dances were 94% (89% to 99%), 56% (33% to 96%) and 87% (75% to 99%). There were two or fewer disagreements per assessment session between observers on the occurrence of appropriate dancing on 82% of all reliability checks. Similarly, during generalization dances observers disagreed on the occurrence of appropriate dancing for a given participant more than once on only four occasions.

Reliability checks on trainer behavior occurred during 23% of all trainer observations. Due to a different observation system for trainer behavior as described earlier, a different method of calculating reliability was used. Specifically, the number of times observers disagreed on the total frequencies of each behavior recorded per minute-interval was analyzed. For trainer instructions, during 81% of

the intervals the observers did not disagree on the number of occurrences, during 17% the observers disagreed by one occurrence, and during 2% they disagreed by two occurrences. For praise statements, the observers did not disagree during 73% of the intervals, disagreed by one occurrence during 23%, and by two occurrences during 4%. For physical guidance, observers never disagreed during any interval.

Establishing Validity for the Definition of Appropriate Dancing

To establish social validity for the definition of appropriate dancing, two staff members from the local ARC who conducted dances for retarded persons living in the local community were consulted. The ARC representatives were provided an overview of the project and were asked to name retarded persons from the community who would be “good dance models” and “undesirable or inappropriate models” for residents in the institution. The ARC representatives agreed on four persons in the former category and two in the latter.

These six models were observed at three ARC dances to determine if the definition of appropriate dancing would discriminate between the two types of models. Two observers conducted all observations simultaneously, with one observer being naive as to which persons had been identified as which type of model. The observation system was altered from that described previously to allow the observers to be more inconspicuous. A combination of momentary time-sample and interval procedures was used in which the dance behavior of one of the targeted “models” was observed for 5 seconds at 30-second intervals. At the end of the 5 seconds the observers recorded whether or not the individual danced and if so, whether he or she danced appropriately for the entire time. Recordings were made on a 5 cm × 10 cm card cupped in the palm of the observer’s hand. During each dance, individual models present were observed according to a previously designated, nonsystematic order for a minimum of 6 samples and a maximum of 12 samples per model.

Reliability percentages for dancing by the models

were computed as described previously. Overall reliability for dancing averaged 96% (range 92% to 100%), occurrence 96% (90% to 100%) and nonoccurrence 56% (0% to 100%). Overall reliability for appropriate dancing averaged 90% (85% to 100%), occurrence 67% (36% to 100%), and nonoccurrence 75% (50% to 100%). As during assessments and generalization dances, the lower reliability figures were generally due to a small number of disagreements. Across all models and all dances, observers had more than two disagreements on dancing or appropriate dancing by a particular individual on only one occasion.

Results of the social validity observations indicated that the definition established for appropriate dancing was discriminative. Both observers recorded more appropriate dancing for all previously identified "good models" than for either of the "inappropriate models" at each dance. The good models averaged 65% appropriate dancing whereas no occurrences of appropriate dancing were recorded for the inappropriate models, although all models engaged in dancing.

Experimental Procedures

Baseline (pretraining). Baseline sessions were conducted in a large (11 m $\times$ 15 m) recreation/training room with two residents at a time. Residents were told this period would be available for "Boogie Time." Each resident was familiar with the dancing conditions associated with "Boogie Time" through attendance at previous dances. A general instruction that dance time would begin when the music started was then given, the music began, and the trainer started dancing while facing, and within 3 feet of, one of the residents.

To encourage dancing by the residents without affecting its appropriateness, the trainer attempted to systematize her interactions by engaging in each of the following types of interactions no more than two times with each resident per assessment session: a specific instruction to dance, physical guidance to prompt dancing, and a praise statement contingent on the occurrence of dancing but noncontingent on appropriate dancing. The specific instruction to dance was provided when a resident

either did not begin dancing at the start of a session or stopped during a session. If a resident did not immediately comply with the instruction, a second instruction was provided. If the resident did not comply with the second instruction, physical guidance was provided for approximately 5 seconds (e.g., the trainer took the resident's hand(s) and began swinging him or her as when leading a dance partner). If the resident was not dancing after the guidance was withdrawn, guidance was provided a second time. Finally, a praise statement was provided when a resident began dancing without a specific instruction, or when a resident complied with a specific instruction or with the guidance. Throughout the assessment session the trainer engaged in the basic dance steps described in the next section, while dividing her attention between the two residents. Music was played continuously throughout the session, which lasted 5 to 10 minutes depending on the duration of the particular songs.

Dance training. Four components to dance training were implemented in a serial fashion (Panyan & Hall, 1978): leg movements, arm movements, coordinated leg and arm movements, and training to generalize. Each training session was conducted by one trainer with one resident.

To train appropriate leg movements, the trainer first instructed the resident to dance and then observed to determine if the leg movements were appropriate. If the dance behaviors were appropriate, intermittent praise was provided by the trainer while the resident continued to move his or her legs. If the behaviors were not appropriate, the following remedial action was taken until appropriate leg movements occurred. First, the trainer provided verbal feedback regarding errors (e.g., "Ben, your legs are too far apart.") Second, the trainer modeled the appropriate behavior. In some cases, the trainer instructed the resident to attend to the relevant movements that were being demonstrated (e.g., "Ben, watch where I put my feet.") Third, the resident was instructed to practice the appropriate behavior (e.g., "Ben, now you do it.") Fourth, the trainer provided feedback to the resident contingent on appropriate movement in the

same format as provided earlier, except that where corrective verbal feedback was used, the trainer also manually guided the resident's actions (e.g., the trainer placed her hands on the outside of the resident's legs and pushed the legs closer together). Finally, the trainer observed the resident's movement, determined if it was appropriate, and then followed the same respective actions as just described. Once the resident demonstrated appropriate leg movements for 3–5 minutes following the trainer's instruction to dance, the same teaching strategy was implemented for arm movements. When appropriate arm movements were occurring for 3–5 minutes following the initial instruction, the trainer focused on coordinated leg and arm movements.

Throughout dance training a basic dance step was taught using the behavior definitions described earlier. Leg movements involved placing the feet 6–10 inches apart and picking up the feet in alternating fashion 1–3 inches off the floor. Arm movements involved holding the elbows approximately 1 inch from the sides of the body, bending the arms at an approximate 90° angle with the hands extending out in front of the body in a loosely closed fist, and moving the arms up and down in sequence with the up and down movements of the opposite-side leg. Throughout implementation of all dance training components, the trainer continued to model these movements, except when the movements were incompatible with manually guiding the resident's movements, with the beat of the music.

Because generalization of newly acquired skills is a major concern in applied behavioral research with the severely and profoundly retarded (Whitman & Scibak, 1979), a training component was implemented to enhance skill generalization. Specifically, training was conducted in different settings (Handleman, 1979) and training was conducted by several trainers (Stokes, Baer, & Jackson, 1974). This training component was implemented while each resident received instruction in coordinated leg and arm movements. Generalization training sessions were conducted to provide each resident with training by at least three generaliza-

tion trainers (range of three to six trainers) and in at least three different locations within the facility (range of three to seven). The generalization training sessions were conducted using the same procedures as described previously for the leg and arm movement training phase. The specific number of additional sessions varied weekly depending on each resident's availability in terms of school schedule. Sessions continued until each resident was dancing appropriately during the majority of each session as indicated by intermittent experimenter observations as well as on evaluation sheets completed by the trainers.

Training sessions during all phases were brief, lasting between 5 and 10 minutes. In total, there were 57 training sessions with Bernie, 64 with Linda, 34 with Kyle, and 37 with Ben.

Supervision. The initial plan for evaluating the effects of dance training was to compare residents' performance during the pretraining assessment sessions with their performance during posttraining assessment sessions. However, after working with one resident, it became apparent that residents might not dance appropriately during assessment sessions even though they had demonstrated proficiency during the dance training sessions. Therefore, a supervision condition was added that represented a combination of procedures used in the assessment sessions and the training sessions. The supervision condition was the same as the pretraining condition with the addition of more instructions, physical guidance, and praise focusing on coordinated arm and leg dance movements. Hence, during baseline assessment sessions the trainer provided instructions, guidance, and praise to encourage dancing by the residents, whereas during assessment sessions with supervision the trainer provided instructions, guidance, and praise to encourage appropriate dancing. Also, during baseline assessment sessions the number of trainer interactions directed at resident dancing was limited to no more than two of any specific type of interaction whereas during assessment sessions with supervision the trainer initiated as many interactions as she or he deemed necessary to encourage appropriate dancing.

Generalization Dance Sessions

Baseline. Baseline generalization sessions consisted of regularly occurring dances in the residents' living unit, typically on Friday evenings. All residents from the living unit, as well as three to five retarded persons who lived in the local community, attended these dances. Three to five staff and one to three volunteers were usually present to assist with the dance activities. During the dances the staff and volunteers attempted to maintain general orderliness of the activities and dance with the residents. During baseline, no instructions were given to the staff and volunteers in terms of their responsibilities regarding the ongoing study.

Posttraining. Generalization dances during this condition were conducted in the same manner as during the baseline generalization dances except that the residents had participated in dance training and posttraining assessment sessions with supervision.

Posttraining plus supervision. During these generalization dances, staff and volunteers provided instructions, guidance, and praise to the residents similar to that described previously for the supervision condition with assessment sessions. Staff and volunteers were instructed not to seek out the target residents any more than usual; rather, they were told that when they did dance with the target residents, they should attempt to encourage the residents to dance appropriately using the instruction, guidance, and praise strategy. Staff and volunteers were trained in this strategy during one 20–30-minute meeting with an experimenter. The experimenter described and modeled appropriate dance movements and noted a specific inappropriate dance behavior that a given resident had displayed most frequently during previous assessment sessions (e.g., spreading the feet too far apart). The experimenter also described the use of instructions, contingent praise, and physical guidance to evoke and maintain appropriate dancing. Using this orientation format with the staff and volunteers, it was not expected that they would supervise the residents' dance performance as proficiently as the trainers had done during the previous assessment sessions with supervision. Instead, it was in-

tended that the staff and volunteers would be able to approximate the supervision strategy and that this would be sufficient to improve residents' dance performance where necessary.

In addition to the usual resident observations during the posttraining generalization dances with supervision, an additional observation was conducted during one dance to determine if the target residents were receiving more or different types of interactions from staff and volunteers than were the nontarget residents (i.e., those not in the study). The observation was conducted via the one-way window without the awareness of staff and volunteers. Five nontarget residents were randomly selected from all residents on the living unit and staff interactions with these persons were observed as well as interactions with three target residents who had received dance training (one target resident had been discharged from the facility). The same observation system described earlier with trainer behavior during assessments was used, with minute-by-minute alternation between target and nontarget residents until each resident had been observed for one or two complete intervals.

Experimental Design

The initial plans for the experimental design were to evaluate the effects of dance training with a multiple-baseline design across residents, comparing dance performance on pre- versus posttraining assessment sessions. As alluded to earlier, after intervention with one resident, this plan was altered so the effects of dance training plus supervision during posttraining assessments could be evaluated in multiple-baseline fashion. Additionally, the effects of assessments with supervision but without prior dance training were evaluated with one resident. Finally, one resident's performance served as a control for time and practice without any intervention.

RESULTS

Assessment Sessions

Results of the experimental manipulations on the dance and appropriate dance behaviors of the

residents during assessment sessions are shown in Figure 1. During baseline, three residents (Bernie, Linda, and Kyle) danced during an average of 80% or more of the observation intervals, whereas two residents (Ben and Ann) danced less consistently. However, the percentage of intervals with dancing that was recorded as appropriate was minimal, with each resident averaging less than 11%. During posttraining assessment sessions with Bernie, dancing continued to occur frequently and appropriate dancing increased over baseline (mean 36%) although it was considerably less than maximal and was highly variable (range 0% to 64%). Similarly, when predance-training assessment sessions with supervision were conducted with Linda, dancing remained frequent but appropriate dancing increased very little (mean 28%). In contrast to the first two experimental manipulations, during post-training assessment sessions with supervision, increases in appropriate dancing were observed for each of the four residents, with averages of 89% (76% to 100%), 81% (43% to 100%), 76% (38% to 96%), and 51% (17% to 67%), respectively. Also, dancing either remained at a high level (above a mean 80%) or increased from a previous low level (for Ben). Throughout baseline assessments for the control resident, Ann, dancing remained infrequent as did appropriate dancing. During the one assessment session in which there was a high percentage of appropriate dancing (100%) for Ann, this represented only two observation intervals. In this respect, it should be noted that percent appropriate dancing could exceed percent dancing as displayed graphically when a resident danced during only a small number of the total observation intervals but when he or she did dance, it was appropriate. For example, if a resident danced during 2 of 50 observation samples, his or her dancing would equal 4%, whereas if during each of those 2 intervals the dancing was appropriate, then percent appropriate dancing would equal 100.

Generalization Dances

Resident dance performance throughout the generalization dances was variable across residents

(Figure 2). Specifically, dancing was relatively frequent for Linda and Kyle, highly variable for Bernie and Ben, and typically infrequent for Ann. Differential results across residents were also obtained with appropriate dancing (Figure 2) for the four residents who had received dance training and follow-up supervision during assessment sessions. During posttraining assessment sessions with supervision, Bernie, Linda, and Kyle increased their levels of appropriate dancing during the generalization dances. However, only Kyle's appropriate dancing maintained. When supervision was later provided during generalization dances, Linda's appropriate dancing increased to a mean 85% (range 55% to 100%) with no decreasing trend apparent (Bernie's discharge from the facility prohibited his participation in this condition). For Ben, there was no apparent increase in appropriate dancing during the generalization dances while the various types of assessment sessions were in effect, but there was an increase to a mean 88% (78% to 100%) when supervision was provided during the generalization dances. There were no apparent changes in the control participant's appropriate dancing during the generalization dances. Hence, for three of the four residents who improved their appropriate dancing during assessment sessions, there was evidence of generalization to the dances on the living unit. However, except for Kyle, the generalized changes were not durable and supervision was required at the generalization dances for more significant improvement.

Trainer Behavior

Table 1, which presents the rate and type of trainer interactions with each resident during assessment sessions, indicates that trainers did indeed interact with the residents in accordance with the intended procedures. That is, there were considerably more interactions directed to each resident during the assessment sessions with supervision than the assessment sessions without supervision.

The frequency of staff/volunteer interactions with the three trained residents still present at the facility when supervision was implemented during the observed generalization dance, and the fre-

Figure 1. Percentage of observation intervals in which dancing (open circles) occurred, and percentage of intervals with dancing during which appropriate dancing (closed circles) occurred, for each participant for each *assessment* session for all experimental conditions.

Figure 2. Percentage of observation intervals in which dancing (open circles) occurred, and percentage of intervals with dancing during which appropriate dancing (closed circles) occurred, for each participant for each *generalization dance* for all experimental conditions.

Table 1

Rate (per Minute) of Trainer Instructions (I), Physical Prompts (P), and Praise Statements (PS) with Each Resident During Assessment Sessions

Resi- dent	Experimental conditions											
	Pretraining (baseline)			Pretraining & supervision			Posttraining			Posttraining & supervision		
	I	P	PS	I	P	PS	I	P	PS	I	P	PS
Bernie	0.40	0.03	0.50	— ^a	—	—	0.16	0.03	0.30	2.35	0.74	1.72
Linda	0.50	0.12	0.05	4.78	3.57	3.70	—	—	—	2.88	0.46	2.26
Kyle	0.27	0.03	0.38	—	—	—	—	—	—	2.33	1.32	2.22
Ben	0.38	0.48	0.37	—	—	—	—	—	—	2.11	2.48	1.86
Ann	0.38	0.22	0.34	—	—	—	—	—	—	—	—	—

^a A dash (—) means resident did not participate in that experimental condition.

quency with the nontarget residents, is presented in Table 2. Mean rate per minute of all interactions combined was similar for nontarget residents (0.77) and Kyle (0.83), who exhibited a high frequency of appropriate dancing in the generalization dances following intervention during assessment sessions without experimentally imposed supervision during the generalization dances. Ben and Linda, who were receiving experimentally imposed supervision during the generalization dances, received approx-

imately 0.90 interactions more per minute (mean 1.67) than the nontarget residents. The higher rate of interactions was generally due to more instructions and praise from the staff/volunteers, as the rate of physical guidance was less than that with the nontarget residents.

DISCUSSION

In this investigation, we demonstrated a method of training an intermediate community living skill to institutionalized severely and profoundly retarded persons using the performance of higher functioning, noninstitutionalized individuals as the performance norm. The program, consisting of serial training in appropriate dance movements plus follow-up trainer supervision, was effective in teaching all four participants to engage in appropriate dance behaviors. Improvements in appropriate dancing occurred during both formal assessment sessions and ongoing (generalization) dances at the facility.

Because of the difficulties in achieving generalized behavior changes with severely and profoundly retarded persons, several generalization training components were included in the current program—multiple trainers and multiple training settings. Although the precise influence of these components relative to other program components cannot be determined, evidence for generalization was present in that three of four participants dem-

Table 2

Rate (per Minute) of Staff/Volunteer Interactions with Target and Nontarget Residents During a Generalization Dance

Group	Resi- dents	Interactions			
		In- struc- tions	Phys- ical prompts	Praise state- ments	All inter- actions
<i>Target</i>	Ben	2.00	0.50	2.50	1.67
	Linda	3.00	0.00	2.00	1.67
	Kyle ^a	1.00	0.00	1.50	0.83
<i>Nontarget</i>	Penny	1.00	1.00	0.00	0.67
	Ernie	0.00	1.00	1.00	0.67
	Hank	1.00	0.50	2.00	1.17
	Jack	0.00	0.00	1.00	0.33
	Kim	1.00	1.00	1.00	1.00

^a Kyle was the only target resident with whom staff and volunteers were not instructed to provide additional instructions, physical guidance, and praise.

onstrated some increases in appropriate dancing during the generalization dances after improving their dance performance during assessment sessions. However, large and durable effects were noted for only one resident, Kyle. In contrast, significant changes occurred for both remaining residents (Linda and Ben) when supervision was implemented at the generalization dances. Changes for these two residents occurred even though the rate of supervisory interactions during the generalization dances was considerably less than that provided during posttraining assessment sessions with supervision (Table 2 vs. Table 1). Also, the improvements in dancing were brought about without changing the normal caregivers at the dances and with only minimal preparation of the caregivers (one 20–30-minute meeting). These characteristics suggest that the program could be easily used by staff in other service settings because intensive training and background experiences are not necessary (all training was by institutional staff). Additionally, although the supervision component during the generalization dances apparently required more staff and volunteer interactions with the target residents relative to nontarget residents who were also at the dances, the type of interaction was less intense with the former group. That is, the two target residents who received supervision received more verbal interactions (instructions and praise) but the nontarget residents received more physical interactions (manual guidance) on the average from the staff/volunteers. Hence, the supervisory interactions with the target residents were probably no more effortful for the staff and volunteers than were the interactions they typically had with other residents.

Because of the need for supervision during the generalization dances, it appears that serial training alone was not sufficient to develop independent dance skills. However, the program can be considered a successful method for achieving "partial participation" (Brown, Branston-McClean, Baumgart, Vincent, Falvey, & Schroeder, 1979). Briefly, partial participation refers to assisting individuals whose disabilities are so serious as to prohibit totally normal functioning, such that they can par-

ticipate to some degree in normalized activities. In the present case the residents participated appropriately during the generalization dances with only partial assistance from staff and volunteers. The benefits of partial participation for severely and profoundly handicapped persons have been espoused frequently in the professional literature (e.g., Brown et al., 1979; Certo, 1983; Snell & Smith, 1983), and two of the benefits seem particularly relevant here. First, the general quality of life available to seriously handicapped persons can be enhanced significantly (Brown et al., 1979). Second, successful partial participation can demonstrate the development of skills that were once considered beyond the capabilities of the severely and profoundly handicapped (Brown et al., 1979). In this study the appropriate, partial participation in the social dances with less seriously retarded persons from the community resulted in a greater variety of life experiences for the residents. Also, the acquisition of a rather complex leisure or social skill not heretofore reported with this population provides some evidence of a capability not previously considered within the likely behavioral repertoire of the severely and profoundly mentally retarded.

The effectiveness of dance training plus follow-up supervision on the residents' dance performance was demonstrated via the multiple-baseline analysis. In contrast, the lack of noticeable improvements in performance when dance training was implemented without follow-up supervision as well as when supervision was provided without prior dance training, suggests that both the training and supervision components were necessary. It should be noted though that each individual component was evaluated only one time with one resident, too small a sample for forming definitive conclusions. Subsequently, a conclusion as to the effectiveness of the packaged program seems warranted whereas conclusions regarding the lack of effectiveness of each component when used individually should be cautious.

A frequently recognized need of institutionalized retarded persons is training in leisure skills that are appropriate according to community standards. As a result of the present program, four institutional

residents were participating, with partial assistance, more appropriately in a leisure-dance activity at their facility. This approach to developing a leisure skill as an intermediate community-living step—intermediate in the sense that the skill level of the institutional residents improved to a level commensurate with retarded persons in the community as opposed to a level equal to nonhandicapped adults—should be amenable to other types of leisure and community-living activities. Using successful performances of retarded persons living in less restrictive environments to determine the skills necessary for these activities enhances the probability that the skills will be truly functional for institutional populations.

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