

# *A Rapid Method of Teaching Profoundly Retarded Persons to Dress by a Reinforcement - Guidance Method<sup>1</sup>*

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**ABSTRACT.** Dressing and undressing is a major problem for the adult profoundly retarded person. A new program was developed that included lengthy and intensive training sessions, a forward sequence of steps rather than backward chaining, graduated and intermittent manual guidance, continuous talking and praising, graduated sized clothing, and an emphasis on reinforcers natural to dressing. The seven profoundly retarded adults who received the dressing training learned to dress and undress themselves in an average of 12 hours distributed over 3 or 4 training days.

## **Introduction**

Normal non-retarded children learn to dress with no special training, but profoundly retarded persons often have not learned the minimal dressing skills even as adults.

Behavior modification programs, such as Bensberg's (1965) early efforts, had offered hope that profoundly retarded persons could be taught to dress. Although these new procedures appeared effective for higher level persons, the evidence has been that little or no success occurs for the profoundly retarded. Minge and Ball (1967), in training six profoundly retarded girls for 30 training hours, found some improvement in undressing but virtually no improvement in dressing. Horner (1970) provided dressing training to 83 severely and profoundly retarded persons and found that about one-third could not be trained. The others required an average of 70 sessions. Ball, Seric and Payne (1971) found only slight improvement in the dressing skills of retarded boys after 90 days of training. Watson (1972) estimated that 8 to 12 months would be required to teach the profoundly retarded. In summary, the evidence indicates that the new behavior modification procedures have been of value, but have not been substantially successful in teaching dressing to the profoundly retarded, even after many months of training.

Several reinforcement procedures for teaching dressing skills have been described in detail and in overall rationale (Bensberg, Colwell & Cassell, 1965; Breland, 1965; Minge & Ball, 1967; Bensberg & Slominski, 1965; Ball, Seric & Payne, 1971; Horner, 1970; Watson, 1972). Almost all of these reports have the following procedures in common: Food snacks or praise serve as the reinforcers; reinforcement is given at the completion of the act of taking off or putting on a specific garment; an instruction is given to start each trial for a given garment; "backward chaining" is used for each garment whereby the instructor himself puts on or takes off the garment almost entirely, allowing the student to complete only the final portion; the student learns to deal with one article of clothing before proceeding to the next; finally, the instructor fades out the instructions and the reinforcers. Brief training sessions of about 15 minutes duration are used over a period of many weeks or months.

The present study designed and evaluated a new program for teaching dressing and undressing and incorporated the following principal characteristics:

1. Instead of backward chaining, the method used a forward sequence in which the student participated fully in the initial, as well as in the final, components of the dressing actions.
2. Instead of trials involving only one article of clothing, the entire dressing or undressing sequence was used.
3. Instead of a single sized garment, the program used larger sizes initially.
4. Instead of using snacks and praise exclusively, the program used reinforcers intrinsic to dressing and undressing, and also used praise and stroking on a near-continuous basis rather than only at response completion.
5. At the start of training, instructions were given nearly continuously rather than only at the beginning of a trial.

<sup>1</sup> This research was supported by the State of Illinois, Department of Mental Health and Developmental Disabilities.

6. Manual guidance, which has been noted only incidentally as a teaching method, was used as a major component.

7. The program incorporated provisions for fading out this assistance by a Graduated Guidance and Intermittent Guidance feature.

8. Training was made more intensive by increasing the duration of each session of two to three hours and providing two sessions per day.

9. To reduce confusion of the student, dressing was taught separately from undressing.

10. To increase initial success, the undressing, which was easier, was taught before dressing.

11. The objective was to teach dressing to the profoundly retarded within a few days and in a very enjoyable atmosphere.

## Method

**Students.** All residents in a state residential center for retarded persons were considered for training. Of the 20 residents who were unable to dress, even after instruction and slight assistance, seven were selected for training. Twelve residents were not included because they had physical problems which prevented them from dressing entirely without assistance. One other resident was excluded who was so passive as to require total feeding by the employees. The seven students had an average age of 31 years of which an average of 25 years was spent institutionalized. Three were male and four female. None had functional speech. They had an average Social Age of 1.6 years as measured by the Vineland Social Maturity Scale (1965) and an average Mental Age of less than 1.5 years as measured by the Merrill-Palmer Scale of Mental Tests (1965). Four students exhibited substantial behavioral stereotypy.

**Dressing-Undressing Test.** Prior to training, each student was given a standard test on at least two occasions to assure that the student could not dress. This same test was readministered at the start of each training day and at the end of training to provide a standardized measure of progress.

**Identification and use of reinforcers.** The attendants were interviewed to determine what was reinforcing for each student. To the extent possible, all of the reinforcers for a student were given for correct responses during training. The reinforcers which required substantial time, such as going for a walk, playing, being with a preferred employee, showering, napping, etc., were given only at the completion of each dressing-undressing sequence. The more discrete, short-duration reinforcers, such as snack items, were given after each garment was put on or removed. The non-interrupting types of reinforcers, such as praise and back-stroking were given virtually continually while the student was engaged in garment removal or dressing.

**Positioning.** The student was seated in a chair with a back support to eliminate unsteadiness while standing.

**Both hands used.** The student was taught to use both hands in handling each garment thereby reducing interfering actions by an unutilized hand.

**Type of garment.** Five types of garments were used: underpants, shoes, socks, pants, and shirt. All were the slip-on type with no laces, buttons, zippers, belts or snaps to make success more attainable.

**Clothing size approximation.** For each garment, the student began with a garment which was two sizes too large. When the student required no more than touch assistance, the trainer used the next smaller size, thereby making success more likely at the start.

**Entire Sequence.** The student first learned to undress, removing the shoes, then the socks, pants, underpants, and finally, the more difficult shirt. The trainers themselves dressed the student for the next undressing trial. The student then undressed himself. After the student learned to undress, dressing training began, and the student dressed as well as undressed.

**Forward sequence of steps.** The student learned to put on (or take off) a garment using the normal forward sequence whereby one usually dresses rather than the interrupted and step-by-step backward chaining procedure.

**Session length.** The intensive reinforcement procedure permitted sessions of 3 hours duration in spite of the otherwise short attention span.

**Use of student's name.** If the student was not paying attention, the instruction was preceded by calling his name and if necessary directing his head toward the task.

**Reason for reinforcement.** The student was given an explanation each time he received reinforcement and regularly shown a mirror and praised for his appearance.

**General vs. specific instruction.** Instruction proceeded from the most general, i.e., "Get dressed," to more structured and specific, i.e., "Pull up your socks," to allow the student the opportunity to follow the more general instruction if he could do so.

**Nature of the prompts and sequence.** The first instruction for each garment was simply verbal. If a few seconds passed with no action, the trainer pointed at or touched the garment. After a few seconds, the instruction was repeated and the trainer molded the student's hands around the garment. If the student was not participating, the trainer then described each movement the student was to make as he guided the hands through the necessary motion. The instructions were very specific. This procedure provided multisensory information: verbal, visual, auditory and tactual.

*Delayed manual guidance for passive learners.* Once a student demonstrated that he could deal with a particular garment without manual guidance, further guidance was delayed on subsequent trials. The instruction and pointing was repeated about every 10 seconds for one minute before manual guidance was used again. This procedure was needed for passive students who otherwise awaited the instructor's guidance.

*Multiple trainers.* Two trainers were present during the first training session and thereafter until the student could be easily managed by one. Both trainers provided praise, stroking and manual guidance, but only one trainer provided verbal instructions.

*Graduated guidance.* Gentle manual guidance was used with all students in the early stages of training. The trainer's hands were molded around the student's hands but not touching the article of clothing. A student who resisted guidance was never forced and guidance began again when the student was relaxed. The trainer's touch was lightened as the student began to respond more on his own. An instruction was never given unless the trainer was close enough to manually guide if necessary.

*Intermittent guidance.* Near the end of training, the trainer did not maintain touch contact all the time, rather he lightly and momentarily touched the student's hands only when he was not responding on his own or when he had difficulty.

*Verbal praise and stroking.* Whenever the student followed an instruction, the trainers provided praise and stroking but discontinued when the student resisted guidance (when graduated guidance was employed) or made no effort to follow the instructions (when intermittent guidance was employed). Praise and stroking began again when the student made an effort.

*Intensive training on one garment.* If a student experienced difficulty with only one or two garments, intensive training on only those garments began. Several trials of this intensive training were alternated with the complete sequence in order to keep the intensive training within the context of total dressing-undressing.

## Results

All seven students learned to dress and undress themselves. The criterion for learning was that the student put on each of the five garments without assistance upon an initial instruction to put the garment on and, when instructed to take the garment off, remove each of five garments also without assistance. Figure 1 shows the percentage of students who reached this learning criterion as a function of training time. The fastest learner required only four training hours (less than one training day) whereas the two slowest learners

both required 20 training hours (equal to four training days). The average time required was 12 hours. The median time (indicated by the 50% value of the ordinate in the Figure) was about 10 training hours, equivalent to two training days for the average student.

Prior to training, the students averaged only 7% successful attempts at handling each garment on the standard test and 10% success on the second test prior to training. At the end of training the students averaged 90% success on the same test.

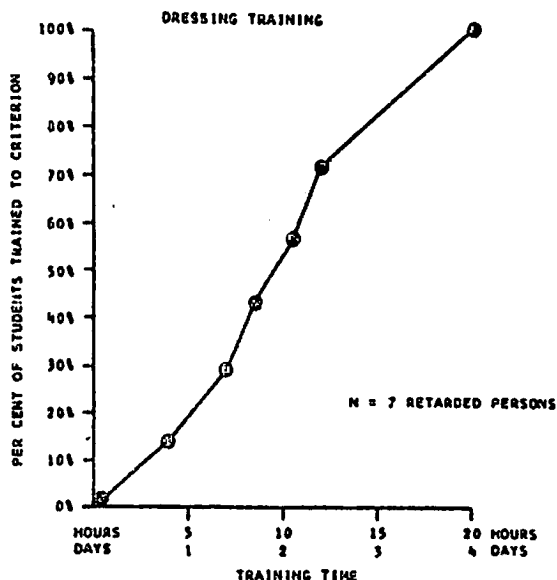
## Illustrative Case Study

Sid was nonverbal, 27 years old, and had been institutionalized since he was 5 years old. He was not toilet-trained. He could feed himself with a spoon but was messy. During his free time Sid normally sat on his bed with his legs drawn under his body. He was withdrawn and resistive and did not respond to ongoing activities. The attendants indicated that Sid liked sweet snacks, resting in bed, walking and playing outside.

At first it was necessary for the trainer to mold his hands around Sid's in order for him to undress, and Sid frequently became rigid during guidance. For example, one trainer said, "Sid, take off your pants." No response. The trainer repeated the instruction and touched Sid's pants. No response. The trainer repeated the instruction and placed Sid's hands around the waistband of the pants. No

FIGURE 1

Per cent of students trained to criterion as a function of training time.



response. The trainer said, "Take off your pants", then, with his hands molded around Sid's, said "Push them down to your knees." "Good, you're pushing them down!" "Now push them to your feet." "Good you're pushing them!" "Get your foot out." When Sid became relaxed the trainer again molded his hands around Sid's and the back stroking began. When Sid had taken his foot out of the pants leg, the trainer praised him. While Sid was eating his snack, the trainers stroked his back and praised him.

When Sid was completely undressed, he enjoyed resting in bed for 5 minutes after which the trainers dressed him. Gradually, Sid began to do more of the undressing independently, and the trainer needed only touch Sid's hands lightly. Sid never resisted this touch guidance.

After Sid was removing all of his clothing in his normal size, dressing training began. When Sid had put on his clothes, the trainers told him "Sid, you're all dressed; now you can go outside and play." While Sid and the trainers were walking through Sid's living area they stopped an attendant and said, "Fred, doesn't Sid look great? He's all dressed and he did it practically all by himself!" Fred agreed and said, "Sid, you look so nice! You've put all your clothes on!" while he patted Sid on the back.

After Sid had been playing for a few minutes, he and the trainers went back to his room where he undressed and rested for a few minutes. Each time the sequence was repeated, Sid dressed and undressed more independently.

After a total of 10 hours of training, Sid had put on his pants and underpants with the trainer instructing and pointing at the pants. Consequently, instead of molding Sid's hands, the trainer repeated the instruction and pointed at the pants every 10 seconds. After the instructions had been repeated 3 times, Sid picked them up without guidance and put them on.

Sid needed only a touch occasionally to dress. When the trainer said, "Sid, put on your shirt," Sid began to pick up his shirt and the trainers praised Sid. After Sid had put the shirt over his head, he stopped. The trainer said "Put your arm in," then pointed at the sleeve and stopped praising. After 2 seconds, the trainer lightly touched Sid's elbow, whereupon Sid pushed his arm through the sleeve and the trainers praised him.

After 12 hours of training, Sid, for the first time in his life, took off all of his clothes when asked to undress and put on all of his clothes when asked to dress. Other staff members were understandably surprised and praised him a great deal when he got undressed and dressed himself again to go outside for a walk. In order to maintain Sid's skills, the attendants needed only to touch his hands occasionally when he was dressing or undressing and to praise him when he was finished.

## Discussion

The dressing program achieved the objective of rapidly teaching all of the profoundly retarded adults to dress and undress themselves in simple garments without the need for assistance. All seven students achieved mastery. The average time required for mastery was about two training days, each day including five hours of training. A standard test of dressing skills showed less than 10% mastery when administered before training. These results show that mastery was not attributable to simple testing and retesting. The same test showed almost total mastery after training. The applicability of the program to retarded persons with very low levels of development is evidenced by the extremely low level of functioning possessed by the present study: The students had an average mental age equivalency of one and one-half years and yet averaged 31 years of age in actuality. The present method taught retarded persons who had an IQ as low as 10, long institutionalization up to 41 years, had failed previous efforts, had extensive behavioral stereotypies, had no speech, and no other self-care skills.

The applicability of the present method to children cannot be estimated directly from the results presented thus far, since only adults were included in this formal study. An informal attempt to use this method with two profoundly retarded children was most encouraging but indicated that some slight changes in procedure would be desirable. First, the snack treats may not be as useful as reinforcers for children as they are for adults because of the greater prevalence of "food-finkiness" of children. On the other hand, praise, hugging, and back-stroking seemed more effective with the children. A second difference is the greater likelihood of temper tantrums among children. The solution for this problem was to provide the child with a brief period of required relaxation on a chair until the child had become calm. A third difference was the greater desire for activity by the children. This problem was solved by using various play activities as the reinforcer for the child at the end of each dressing sequence, and by reducing or eliminating the bed rest that had been scheduled as a reinforcer for most adults at the end of the undressing sequence. With additional simple changes of the same type, the present methods seem potentially as applicable to young retarded children as has been found true for adults.

Physical disability seems to present the major obstacle to general applicability of the present method to the profoundly retarded person since physical disabilities are so frequently associated with this extreme degree of retardation. In the present study, 12 persons had a physical limitation that made it impossible for them to put on, or take off, the garments without assistance. They

were excluded from the study since the results would have had to be reported in a manner that was individually related to the specific nature of each physical disability. Yet, for many of these profoundly retarded persons with physical disability, some degree of mastery of learning to dress and undress many of the garments could have been achieved, especially if some assistance were given.

In previous studies, rapid success has been achieved in teaching profoundly retarded persons to toilet themselves (Azrin & Foxx, 1971; Foxx & Azrin, 1973), to stop bedwetting (Azrin, Sneed & Foxx, 1973), to stop self-stimulation (Azrin, Kaplin & Foxx, 1973), to stop self-injury (Azrin, Gottlieb, Hughart, Wesolowski, & Rahn, 1975), to discontinue aggressive disruptive behaviors (Foxx & Azrin, 1972; Webster & Azrin, 1973) and to eat properly (Azrin & Armstrong, 1973). The present method provides a similarly rapid and effective training program to teach profoundly retarded persons to dress themselves.

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## Acknowledgments

The authors wish to thank Mr. Ralph Travis, Administrator of the Developmental Learning Center, Mr. Phil Egelston, Living Unit Team Leader, Ms. Loleen Reickert and Ms. Mildred Lazenby for their cooperation and assistance.

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