

# Education update:

## Which speech training technique works best?

Severely disabled autistic children may learn speech best if their attempts to speak are reinforced without regard for accuracy, according to a new study.

Robert Koegel and colleagues taught speech to four non-verbal, low-functioning autistic children using two approaches. In one, the child was rewarded for any attempt to speak, whether the attempt was phonetically correct or not. In the second, the therapist rewarded speech attempts only if they met increasingly more strict criteria—a procedure known as "shaping." (For instance, the child might be rewarded for saying "duh" for "dog" initially, but later be rewarded only for saying "dog" correctly.)

Koegel et al. report that all four children showed the greatest improvement in correct speech production when all of their speech attempts were rewarded. In addition, they were happier, more interested, and more enthusiastic when this technique was used than when "shaping" was used. The researchers believe this demonstrates the importance of motivating autistic children by designing tasks that allow them to succeed frequently.

"Producing speech use in nonverbal autistic children by reinforcing attempts," Robert L. Koegel, Mary O'Dell, and Glen Dunlap; *Journal of Autism and Developmental Disorders*, Vol. 18, No. 4, 1988, pp. 525-538. Address: Robert Koegel, Speech and Hearing Center, U.C. Santa Barbara, CA 93106.

## B-mod methods tested

Researchers trying to reduce the self-stimulating and aggression of three multi-handicapped children found that:

—"DRO" alone was not effective with two children, and was less effective with the third than a combination of procedures. (In this case, the DRO—or differential reinforcement of other behaviors—consisted of offering each child a favorite food, toy, etc., when aggressive or self-stimulating behaviors did not occur. The reinforcing items were tested ahead of time to ensure that the children liked them, and were rotated to maintain the children's interest.)

—When an aversive procedure was added to the DRO procedure, the children's maladaptive behaviors dropped sharply. The aversives used were *immobilization time-out* (where the trainer placed the child in a chair facing away from classroom activity, and restrained him if necessary); or *overcorrection*, where the child was guided through a series of arm exercises whenever he self-stimmed or eye-gouged.

—While 30-second time-out and overcorrection procedures reduced levels of

maladaptive behavior sharply, increasing these procedures to 90 seconds each resulted in "near-zero levels" of misbehavior.

The procedures did *not* cause non-targeted behavior problems to increase, and *did* cause appropriate play behaviors to increase. The researchers were able to implement the procedures in the children's regular classrooms, and successfully "faded" the procedures in two cases. A five-month follow-up of two subjects showed that the improvements in behavior had been maintained.

In conclusion, the researchers say, "Our results support findings of previous research demonstrating a) failure of DRO procedures to reduce high-rate maladaptive behaviors in multihandicapped children, despite extensive efforts to identify preferred stimuli for use in DRO treatments, and b) efficacy of time-out and overcorrection programs when combined with DRO."

"Tripartite behavioral intervention to reduce stereotypic and disruptive behaviors in young multihandicapped children," Lori A. Sisson, Vincent B. Van Hasselt, Michel Hersen and Joann C. Aurand; *Behavior Therapy*, 19, pp. 503-526, 1988. Address not provided.

## Self-injury reduced

Self-injury can be reduced by reinforcing incompatible behaviors, according to an Irish study.

The study subject was a nine-year-old child with Down syndrome, who head-banged more than 60 times per minute and was generally restrained by arm splints and a helmet. The researchers removed one of the boy's arm splints and then physically prompted him to place blocks into a box—an activity incompatible with head-banging. Each time he placed a block in the box, he was immediately reinforced with a vibrating cushion which he liked; then his hand was placed back on the block tray and he was prompted to "do it again."

Within a month, the boy was striking himself less than once every 10 seconds. The researchers then began gradually requiring longer periods of non-injury before offering reinforcement; in addition, they offered a wider selection of toys and activities, and began reinforcing the boy with praise alone. At six-month follow-up, the boy went for periods of as long as five minutes without striking himself.

"The differential reinforcement of incompatible responses in the reduction of self-injurious behavior: a pilot study," Robert S. P. Jones and L. J. V. Baker; *Behavioral Psychotherapy*, No. 16, 1988, pp. 323-328. Address: Robert Jones, Department of Psychology, University College of North Wales, Bangor, Gwynedd LL57 2DG, U.K.

## Severe eating problems treated

An autistic-like young child who refused to eat solid foods was prompted to eat independently using "backward chaining," prompts, and time-out (MacArthur, Ballard and Artinian).

The 3-1/2-year-old boy, who had been force-fed pureed food, was malnourished and dehydrated at the time the emergency intervention was undertaken by the researchers. He refused to feed himself, and screamed and resisted when others attempted to feed him. Hospitalization was being considered.

The researchers' procedure consisted of:

- Backward chaining. Initially the trainer prompted each step of eating. Then the trainer prompted all but the last step, all but the last two steps, and so on, until the child was eating totally independently. When the child refused to complete a step, verbal prompts were given. If that failed, the child was physically prompted to complete the step.
- Time-out/food removal. If the child screamed or otherwise misbehaved, the trainer removed the food bowl and spoon and turned away until the boy was quiet for five seconds. If he continued to resist, the trainer walked him away from the table.

In addition, if the boy stiffened his arm to prevent the spoon from reaching his mouth, the trainer massaged the boy's elbow to flex it.

The researchers report that by the 25th session, the boy ate well with little resistance and few inappropriate behaviors. A home training program was also successful, and the boy was still eating well at follow-up more than three years later.

The researchers note that some critics feel that a non-exclusionary time-out is an unwarranted aversive procedure. "Nevertheless," they say, "if more positive options have been tried and have failed to prevent interruptions to learning, then a mildly aversive procedure such as a non-exclusionary time-out might be justified in a situation where inadequate diet threatens a child's physical well-being."

"Teaching independent eating to a developmentally handicapped child showing chronic food refusal and disruption at mealtimes," Judy MacArthur, Keith D. Ballard and Miriam Artinian; *Australia and New Zealand Journal of Developmental Disabilities*, 1986, Vol. 12, No. 3, pp. 203-210. Address: Judy MacArthur, Department of Education, University of Otago, P.O. Box 56, Dunedin, New Zealand.