CHARACTERISTICS OVERVIEW CHART

<table>
<thead>
<tr>
<th>Verbal Skills</th>
<th>Grade Levels</th>
<th>Cognitive Level</th>
<th>Areas Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗ Nonverbal</td>
<td>✗ PK</td>
<td>✗ Classic</td>
<td>✗ (Pre)Academic/Cognitive/Academic</td>
</tr>
<tr>
<td>✗ Mixed</td>
<td>✗ Elementary</td>
<td>✗ High</td>
<td>✗ Adaptive Behavior/</td>
</tr>
<tr>
<td>✗ Verbal</td>
<td>✗ Middle/High</td>
<td></td>
<td>✗ Daily Living</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>✗ Behavior</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>✗ Communication/Speech</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>✗ Social/Emotional</td>
</tr>
</tbody>
</table>

BRIEF INTRODUCTION

Prompting is extensively used in behavior shaping and skill acquisition. It provides learners with assistance to increase the probability that a desired behavior will occur. Successful performance of a desired behavior elicits positive reinforcement, therefore reinforcing learning. Prompts vary from most to least intrusive. Prompting should be faded to avoid prompt dependency.

DESCRIPTION

Prompting is a means to induce an individual with added stimuli (prompts) to perform a desired behavior. A prompt is like a cue or support to encourage a desired behavior that otherwise does not occur. In other words, a prompt is an antecedent that is provided when an ordinary antecedent is ineffective. Prompts are often categorized into a hierarchy from most intrusive to least intrusive. Types of prompts (from most intrusive to least intrusive), their descriptions, and examples are as follows:

- **Full physical assistance.** The teacher uses “hand-over-hand” support to aid the child in completing a task (e.g., when teaching the child to pick up a cup, the teacher takes the child’s hand and guides him to pick it up).
• **Partial physical assistance.** The teacher provides partial physical assistance to help the child complete a task (e.g., when teaching the child to pick up the cup, the teacher guides the child’s hand to the cup by tapping his elbow).

• **Full model.** The teacher models the desired behavior (e.g., when teaching the child how to clap, the teacher claps while telling the child to clap).

• **Partial model.** The teacher models only part of the desired behavior (e.g., when teaching the child how to clap, the teacher puts his hands in front of himself, but does not actually clap).

• **Full verbal prompts.** The teacher verbally models the desired behavior (e.g., when teaching the child to expressively label “car,” the teacher asks, “What is it? Say car.”).

• **Partial verbal model.** The teacher verbally models only part of the desired behavior (e.g., when teaching the child to expressively label “car,” the teacher asks, “What is it? Say c___”).

• **Gestural prompt.** The teacher utilizes a physical gesture to encourage the desired behavior (e.g., when teaching the function of an object, the teacher says, “What do you drink with?” while holding his hand to his mouth shaping it like a cup).

• **Positional prompt.** The teacher places the target item in a location that is closer to the child (e.g., when teaching the child to label “toy,” the teacher places the toy closest to the child).

• **Time-delay or prompt-delay techniques** (Walker, 2008). This instructional procedure is proven to be effective, especially for children with AU. When teaching a novel task, time delay is used to transfer the stimulus control from a controlling prompt to a natural prompt by placing varying amounts of time between a controlling prompt and a natural prompt. Given different lengths of time delay, time delay strategies are categorized into constant time delay (CTD) and progressive time delay (PTD). CTD indicates that there is a standard time delay whereas PTD has a graduated delay. The procedures of time delay strategy begin with a zero-second (0-s) delay trial, meaning the controlling prompt is presented with task instruction at the same time without any delay in between. Gradually, to fade the prompt, time delay is increased between the natural prompt (task direction) and the controlling prompt.
Not all prompts in the hierarchy need to be used when teaching a skill. Prompts should be chosen based on which ones are most effective for a particular child. Prompts should be faded systematically and as quickly as possible to avoid prompt dependency. Overall, the goal of using prompts is to help the child independently perform the desired behavior.

**STEPS**

1. *Identify the least intrusive prompt.* Choose a prompt that is necessary for a correct response to occur.

2. *Give differential reinforcement.* After a correct response, give appropriate reinforcement that is equivalent to the level of performance independency.

3. *Fade prompt.* After the child masters a skill, gradually move prompt away or replace with least intrusive prompt.

**BRIEF EXAMPLE**

Josh was learning to match objects with names. The teacher started with verbal and gestural prompts. She said, “It is time for drawing, and we need some crayons to draw with.” She looked at the crayons on the table and pointed at them, saying, “These are crayons.” Then she pointed at the crayons and asked Josh, “What are these?” After Josh responded “Crayons,” the teacher nodded her head and said, “These are crayons! Good job, Josh!”

To fade prompts, the teacher gradually moved from verbal and gestural prompts to only positional prompts. For example, the next time the teacher placed the crayons on the table near Josh, she said, “We need some crayons to draw with. Josh, show me the crayons.” Josh pointed to the crayons correctly and received a point on his token board.
SUMMARY

Prompting is used to increase desired behaviors and skill acquisition. When delivering prompts, the instructor should be mindful of the student’s learning level and fading considerations. Reinforcement should occur after a correct response and should be contingent upon the level of performance independence desired.

RESEARCH TABLE

<table>
<thead>
<tr>
<th>Number of Studies</th>
<th>Ages (year)</th>
<th>Sample Size</th>
<th>Area(s) Addressed</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>48*</td>
<td>3 to adult</td>
<td>139</td>
<td>Academics, art, communication, imitative skill, generalization, social skills, daily living skills, leisure choice, Internet skills, spontaneous response, disruptive behaviors, reading comprehension, safety, writing, empathy, observation, on task, identifying numbers</td>
<td>+</td>
</tr>
</tbody>
</table>

*Note: Includes an integrated review of literature by Walker (2008).

STUDIES CITED IN RESEARCH TABLE


   The purpose of the present study was to evaluate the effects of hand-overhand and dot-to-dot tracing procedure to teach a 14-year-old student with classic autism to write his first name. A multiple baseline and reversal design was used to evaluate hand-over-hand and dot-to-dot tracing. The results indicated the participant increased his ability to write the letters in his first name from 60% to 100%.


   The purpose of the investigation was to compare the delivery of high-quality reinforcers exclusively following unprompted responses (differential reinforcement) with the delivery of high-quality reinforcers following both prompted and unprompted responses (nondifferential reinforcement) on the skill acquisition of two children with autism (ages 3 and 5). Results indicated that both were effective teaching procedures, although the differential reinforcement procedure was more reliable in producing skill acquisition.

The purpose of this study was to teach empathetic responding to four children with autism (ages 4 to 8). Instructors presented vignettes with dolls and puppets demonstrating various types of affect and used prompt delay, modeling, manual prompts, and reinforcement to teach participants empathy responses. Increases in empathetic responding occurred systematically with the introduction of treatment across all participants. Furthermore, responding generalized from training to nontraining stimuli for all participants. Generalization occurred from dolls and puppets to actual people in a nontraining setting for two participants.


This study evaluated the acquisition of incidental and observational information presented to six children with autism (ages 5 to 8 years old) using a time delay procedure. Students learned observational and incidental information during small group instruction.


The study involved three boys with autism who were taught play activities that combined a play sequence with requesting peer assistance using a graduated time-delay procedure. Results showed an increase in pretend play by one of the participants. Two also demonstrated a generalization of the skills learned through the time-delay procedure.


This review of 22 studies with 53 children with autism on time delay revealed that constant and progressive time-delay procedures were effective, with the latter resulting in a lower error rate and fewer procedural errors.


Three adults with autism and mental retardation were taught to access specific Internet sites using backward chaining and most-to-least intrusive prompting. Results indicated that the number of independent steps completed in the task analysis increased following training.


The study evaluated the effectiveness of intensive intervention in establishing spontaneous verbal responses to two young children with autism. The intervention involved discrete-trial
instruction, specific prompts, and error corrections. Data showed positive outcomes of the intervention.

Two boys with autism participated in the study, which compared video modeling combined with least-to-most intrusive prompting to least-to-most intrusive prompting alone in teaching daily living skills in the form of response chains. The results showed that the participants acquired skills taught with video modeling plus least-to-most prompting in fewer trials and with fewer prompts than skills taught with least-to-most prompting alone.

The study examined the effects of direct functional communication training, involving prompting, differential reinforcement, and error correction procedures, in teaching a 10-year-old child with autism to reject items by touching an icon. Results indicated that the training was successful at replacing pushing away with touching an icon to reject items, but it had variable effects on the other behaviors serving a rejecting function.

The purpose of this study was to examine effectiveness of simultaneous prompting in teaching pointing to numerals to individuals with autism. Three individuals with autism (ages 6, 12, and 17) were taught pointing to numerals, which were orally named by the teacher using simultaneous prompting. Results revealed that simultaneous prompting was effective in teaching pointing to numerals. Participants generalized this skill to pointing to the numerals on a calendar page.

The relative efficacy of two assessment packages, one contained several reinforcement procedures while the other contained several potentially effective prompts, was evaluated across two to three skills for six children with autism. Results suggested that the methodology was useful for matching targeted skills to appropriate interventions.

The purpose of this study was to investigate a strategy to improve the independent performance of four preschoolers with autism during playtime in an inclusive setting. Results of the study indicated that all four participants' on-task and play correspondence behavior increased, while experimenter prompts gradually decreased.

The purpose of this investigation was to evaluate the effectiveness of using graduated guidance and visual activity schedules to teach four elementary students with autism on-task and on-schedule behavior. Student performance (a) increased when prompting was used; (b) performance was maintained when the picture activity book was available; (c) it dropped when the picture activity book was not available; and (c) student performance generalized to novel activities.


Efficacy of individualized activity schedules with a 4-year old child with autism was examined. Graduated physical guidance and a system of most-to-least prompts were used during skill acquisition stages with teacher proximity and level of prompts being eventually faded. The child successfully acquired the skills necessary to independently follow activity schedules and generalized these skills to other settings with minimal training.


Four children with autism were taught to use gestures in combination with oral communication. Although none of the participants displayed appropriate gestural and verbal responses during baseline, they all acquired this skill with the systematic implementation of modeling, prompting, and reinforcement. The skills learned were generalized.


The study combined the procedures of fading, reinforcement, and escape extinction using guided compliance to increase food consumption while maintaining low rates of disruptive behavior at mealtime for a 6-year-old girl with autism. Results indicated that intake increased and compliance with prompting procedures remained relatively stable despite a requirement to increase consumption.


Three preschool boys with autism participated in the study, which examined the effects of a self-monitoring intervention. Three primary results were obtained. First, the self-monitoring package increased each participant’s interactions with his peers and/or siblings. Second, the school and home procedures produced comparable impacts on some dimensions of children’s social
behaviors, but other outcomes were affected differentially. Finally, both adult prompts and reinforcement were successfully reduced or faded within the school and home intervention settings.


Four preschoolers with autism participated in an intervention in which a typical peer demonstrated and physically prompted a variety of action and object manipulations that defined the activity. Following training, all four preschoolers generalized their imitative skill to a new setting involving new actions and object manipulations.


A less desirable form of requesting, leading was treated by strengthening a more desirable form of requesting, pointing. The study was conducted with four children (aged 3 and 5 yrs) with autism. Intervention included verbal and physical prompting of the pointing response as well as tangible reinforcement for child-initiated instances of that response. Verbal requesting was also taught to accompany the pointing. Following intervention, generalization was observed.


Two prompting procedures, progressive time delay and a system of least prompts, were used to teach three students (aged 8, 11, and 16 yrs) to identify functional objects. Both prompting procedures were effective in establishing correct responding at criterion levels, but the time delay procedure was more efficient than the system of least prompts.


The study describes an intervention to establish independent eating behaviors in a 3-year-old boy with autistic-like behaviors. The first phase of the intervention, using backward chaining with prompting and fading of prompts, reduced screaming, food refusal, and related disruptive mealtimes behaviors and established appropriate eating responses. The second phase of the intervention successfully taught the mother to implement the teaching strategies, and established independent mealtime behaviors at home. In addition, follow-up showed maintenance of independent eating.


In the study, a leisure education program was implemented with three boys with autistic-like behaviors. Three alternating conditions (prompt and praise condition, praise anything condition, and token economy condition) were used to encourage participation in low-
interest recreational activities. Results showed that the prompt and praise condition was superior to the other two conditions in encouraging participation in low-interest recreational activities.

24. Schepis, M. M. et al. (1982). A program for increasing manual signing by autistic and profoundly retarded youth within the daily environment. *Journal of Applied Behavior Analysis, 15*, 363-379. The study investigated a modified incidental teaching strategy program that included re-arranging the physical environment to prompt signing, altering routine staff-resident interactions to prompt, manually guiding and/or reinforcing signing, and conducting mini-training sessions (5 profoundly retarded and 4 autistic youth). Results indicated significant increases in signing for all participants. The increases were maintained during follow-up. Social validity of the program was also documented.

25. Schreibman, L., & Charlop, M. H. (1981). S+ versus S- fading in prompting procedures with autistic children. *Journal of Experimental Child Psychology, 31*, 508-520. The study investigated the relative effectiveness of two prompt-fading procedures for teaching difficult visual discriminations to eight children with autism. Both prompt procedures involved within-stimulus fading whereby manipulation occurred on the relevant component of the discrimination. One procedure involved fading first along the positive stimulus (S+), while holding the negative stimulus (S-) constant. The other procedure involved fading first along the S-, while holding the S+ constant. Results indicate that for all but one child, the discriminations were acquired significantly faster with fewer errors when the positive stimulus was faded first.

26. Rincover, A. (1978). Variables affecting stimulus fading and discriminative responding in psychotic children. *Journal of Abnormal Psychology, 87*, 541-553. Two experiments were documented. The first investigated stimulus variables in prompt fading that might reduce the attentional requirements for discrimination learning of eight children with autism. Two variables were assessed, distinctive vs. nondistinctive feature fading. Significant main effects were found for both variables due to the success of the within-stimulus and the distinctive feature conditions. The combination of within-stimulus and distinctive feature fading was the most effective procedure. The second experiment was conducted with the same children to assess whether they were still responding only to the pretrained feature after fading. Results showed that discriminative responding was maintained when the pretrained feature was made irrelevant, demonstrating that children attended to multiple features of a positive stimulus, but it was disrupted when the whole letter containing the pretrained feature was made irrelevant, showing that children still learned a restricted portion of the positive reinforcement.

27. Rosenbaum, M. S., & Breiling, J. (1976). The development and functional control of reading-comprehension behavior. *Journal of Applied Behavior Analysis, 9*, 323-333. In the study, a 12-year-old girl was taught reading comprehension using verbal prompts, modeling, and physical guidance. The girl was rewarded for correct behaviors in response to the training item. Results revealed that (a) following acquisition, performance was maintained at
near a 100% level when candy, praise, attention, and training were removed; (b) absence of other persons was correlated with a marked decrease in performance, whereas their presence was associated with performance at near 100%; and (c) performance generalized to probes and across experimenters. Rewards, which may have been reinforcing during acquisition, did not appear necessary to maintain later performance. Instead, the presence of others had control over maintenance performance.

REFERENCES


**RESOURCES AND MATERIALS**

  This Teachervision article presents information on using prompting in the classroom.

- **Prompting. Evidence-Based Practice Brief.** National Professional Development Center on Autism Spectrum Disorders: [http://autismpdc.fpg.unc.edu/content/prompting](http://autismpdc.fpg.unc.edu/content/prompting)
  Evidence-Based Practice Brief contains an overview, step-by-step directions for implementation, an implementation checklist and the evidence base for the intervention.

- **Prompting. Autism Internet Module:** [http://www.autisminternetmodules.org/user_mod.php](http://www.autisminternetmodules.org/user_mod.php)
  In conjunction with the NPDC on ASD, this module was developed. You must sign up for a free account to access this module and the others available on this site.

- **Teaching Children with Autism:** [http://www.polyxo.com/discretetrial/prompting.html](http://www.polyxo.com/discretetrial/prompting.html)
  This informative article provides a description of different types of prompts and how to use them.

  This article answers the basic question in a clear, well-written manner.
GENERAL RESOURCES

- Autism Internet Modules (AIM) [www.autisminternetmodules.org](http://www.autisminternetmodules.org)
  The Autism Internet Modules were developed with one aim in mind: to make comprehensive, up-to-date, and usable information on autism accessible and applicable to educators, other professionals, and families who support individuals with autism spectrum disorders (ASD). Written by experts from across the U.S., all online modules are free, and are designed to promote understanding of, respect for, and equality of persons with ASD. Current modules are:
  - Assessment for Identification
  - Home Base
  - Peer-Mediated Instruction and Intervention (PMII)
  - Picture Exchange Communication System (PECS)
  - Pivotal Response Training (PRT)
  - Preparing Individuals for Employment
  - Reinforcement
  - Restricted Patterns of Behavior, Interests, and Activities
  - Self-Management
  - Social Supports for Transition-Aged Individuals
  - Structured Teaching
  - Structured Work Systems and Activity Organization
  - Supporting Successful Completion of Homework
  - The Incredible 5-Point Scale
  - Time Delay
  - Transitioning Between Activities
  - Visual Supports

- Interactive Collaborative Autism Network (iCAN) [http://www.autismnetwork.org](http://www.autismnetwork.org)
  iCAN offers free online instructional modules on autism spectrum disorder (ASD). Modules have been developed in these areas:
  - Characteristics
  - Assessment
  - Academic Interventions
  - Behavioral Interventions
  - Communication Interventions
  - Environmental Interventions
  - Social Interventions

- Indiana Resource Center for Autism (IRCA) [http://www.iidc.indiana.edu/irca/fmain1.html](http://www.iidc.indiana.edu/irca/fmain1.html)
  The Indiana Resource Center for Autism staff’s efforts are focused on providing communities, organizations, agencies, and families with the knowledge and skills to support children and adults in typical early intervention, school, community, work, and home settings.
  - IRCA Articles [http://www.iidc.indiana.edu/irca/ftrainpapers.html](http://www.iidc.indiana.edu/irca/ftrainpapers.html)
  - IRCA Modules [http://www.iidc.indiana.edu/irca/fmodules.html](http://www.iidc.indiana.edu/irca/fmodules.html)
Texas Statewide Leadership for Autism [www.txautism.net](http://www.txautism.net)

The Texas Statewide Leadership for Autism in conjunction with the network of Texas Education Service center with a grant from the Texas Education Agency has developed a series of free online courses in autism. Please check the training page, [www.txautism.net/training.html](http://www.txautism.net/training.html), for update lists of courses, course numbers and registration information. Current courses include the following:

- Autism 101: Top Ten Pieces to the Puzzle
- Autismo 101: Las 10 piezas principales del rompecabezas
- Asperger Syndrome 101 Online
- Asperger Syndrome 101 Online
- Navigating the Social Maze: Supports & Interventions for Individuals with Autism Spectrum Disorders
- Communication: The Power of Communication for Individuals with Autism Spectrum Disorders
- Communication: The Power of Communication for Individuals with Autism Spectrum Disorders