Communication for People with Severe Disabilities

by

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Funded by a grant from the
Minnesota Governor's Planning Council on Developmental Disabilities,
Minnesota State Planning Agency, 300 Centennial Office Building,
658 Cedar Street, St. Paul, Minnesota 55155

and

A grant from the Administration on Developmental Disabilities, entitled the
"Statewide System for Training Direct Care Service Providers in
Community Programs Project"
(ADD Grant No. 07DD0282), to the Institute on Community Integration,
a University Affiliated Program, University of Minnesota,
Room 6 Pattee Hall, 150 Pillsbury Drive S.E.,
Minneapolis, Minnesota 55455

and

A grant from the National Institute on Disability and Rehabilitation Research
(Grant No. M133B80048) to the Research and Training Center on Community Living,
University of Minnesota, Room 101 Pattee Hall, 150 Pillsbury Drive S.E.,
Minneapolis, Minnesota 55455

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Produced by
The Minnesota Governor's Planning Council
on Developmental Disabilities

and

The Institute on Community Integration, a University
Affiliated Program, University of Minnesota

Graphic Design
Janet Leadholm and Carol Kittelson
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Photography by Linda Beauvais
Destiny 2 Inc.

Acknowledgement to:

Colleen Wieck, Ph. D.
Executive Director
Developmental Disabilities Council

David Hancox
Training Director

Miriam Karlins
Special Consultant

Teri Wallace
Assistant Director for Continuing Education
Institute on Community Integration

We would like to thank the following individuals for serving on the editorial review board. Their comments and suggestions were most helpful.

Ruth Berman
Paris DePaepe
Judy Douglas
Carol Gabor
David Hancox
Sharon Kannonberg
Miriam Karlins
Roberta Kehne
Cheryl Light
Nancy Okinow
Mary O'Phelan
Joan Seidel

A special thanks to Linda Ellson and Diann Ackard.

Portions of this module were derived from Reichle, J., York, J., & Sigafoos, J. (1991). Implementing augmentative and alternative communication: Strategies for learners with severe disabilities. Baltimore, MD: Paul H. Brookes Publishing Company.

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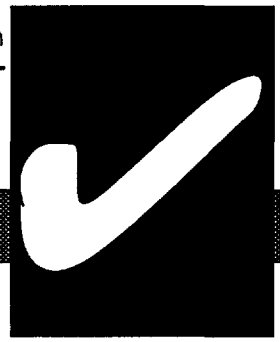


Notes On Using This Manual

The content upon which this course is based is found in the inside column of each page. Overheads for each section are referenced within the text and are located on the back of this manual.

This course is designed to be delivered in two sessions. The first session takes approximately four hours and thirty minutes, and the second session takes approximately three hours and ten minutes.

Notes to Instructor

This course has been specifically developed to help people responsible for providing direct care to individuals with severe disabilities to understand and participate in the process of communication.

This course is organized into a total of 12 sections. Overheads and a video which can be used to augment the lecture or to demonstrate a particular technique are incorporated into the course.

The time recommended for each section is provided in the notes that preface the sections.

References employed in the development of this course are listed in the bibliography. Before teaching this course we recommend that you become familiar with all of this material and the video.

Format

This course is designed to be delivered via a combination of lecture, videotape presentations, and large group discussions.

Time

This course is designed for an approximate total of eight hours of classroom instruction divided into two sessions. The course may be delivered over two different days or may be combined into one day-long session.

Additionally, while this course has been developed for stand-alone delivery, it may be combined with additional material as part of a more comprehensive course in the support of individuals with disabilities.

Materials

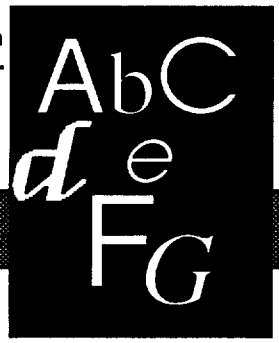
Originals of all required overheads are included in this manual. In order to deliver this material as designed, you will have to make overhead copies from these originals. In addition, the following equipment is required:

1. Overhead projector.

2. Projection screen.

3. VHS Format Video Cassette Recorder (VCR) or video playback unit.

Communication



Course Outline

SESSION 1

A. INTRODUCTION
Lecture; 5 minutes

B. DEFINITION OF AUGMENTATIVE AND ALTERNATIVE COMMUNICATION
Lecture; discussion; 30 minutes

C. THE RELATIONSHIP BETWEEN UNACCEPTABLE SOCIAL BEHAVIOR AND THE INABILITY TO COMMUNICATE
Lecture; 50 minutes

D. INITIAL STEPS IN PLANNING AN AUGMENTATIVE COMMUNICATION INTERVENTION
Lecture; discussion; 50 minutes

E. A DESCRIPTION OF INSTRUCTIONAL TECHNIQUES USED IN THE IMPLEMENTATION OF AUGMENTATIVE COMMUNICATION SYSTEMS
Lecture; 1 hour, 30 minutes

F. SUMMARY AND CLOSING
5 minutes

SESSION 2

A. INTRODUCTION TO SESSION 2
Lecture; 10 minutes

B. TEACHING REQUESTING USING A DIRECT SELECT COMMUNICATION SYSTEM
Lecture; 60 minutes

C. TEACHING GENERALIZED REJECTING AND LEAVE-TAKING
Lecture; 60 minutes

D. USING GRAPHIC MODE SYMBOLS TO TEACH LEARNERS TO FOLLOW INSTRUCTIONS OR EVENTS OF HOME OR COMMUNITY ROUTINES
Lecture; 30 minutes

E. DESIGNING GRAPHIC MODE COMMUNICATION SYSTEMS
Demonstration; 30 minutes

F. COURSE SUMMARY
Lecture; 15 minutes

Communication

UPON COMPLETION OF THIS COURSE, STUDENTS SHOULD BE ABLE TO:

1.0 Define augmentative and alternative communication.

1.1 List the people who can benefit from augmentative and alternative communication.

1.2 Define gestural and graphic communication modes.

1.3 Give examples of selection techniques, symbol systems, and electronic applications.

1.4 List advantages and disadvantages of augmentative modes.

1.5 Discuss the initial steps to take before the implementation of an augmentative system is undertaken.

2.0 Recognize that there is a relationship between unacceptable social behavior and the ability to communicate.

2.1 Give examples of socially and nonsocially motivated excess behaviors.

2.2 Define attention, object, escape, and activity transition motivated excess behavior.

2.3 State the logic for implementing communication interventions as part of intervention packages for socially motivated excess behavior.

2.4 List methods for assessing the function of excess behavior.

2.5 Describe at least two different procedures that have been used successfully or may be useful for replacing an excess behavior with an appropriate communication behavior.

3.0 List the steps in planning an augmentative communication intervention.

3.1 List four methods for identifying learner's likes and dislikes.

3.2 Describe factors that determine which of three communicative intents (request, reject, describe) to implement initially.

3.3 List two considerations in selecting initial vocabulary to teach.

4.0 Describe instructional techniques used to implement augmentative communication systems.

4.1 Describe the importance of analyzing the environment to identify needed communication skills.

4.2 Describe how stimulus prompting can be used to teach generalized requesting.

4.3 Demonstrate a verbal, a gestural, a modeling, and a physical prompt.

4.4 Describe several ways to fade response prompts.

4.5 Define incidental teaching, mand-model, and time delay procedures.

4.6 Describe two alternatives for implementing intervention opportunities.

4.7 List several strategies for promoting both response and stimulus generalization.

5.0 Demonstrate the procedures for teaching requesting using a direct select communication system.

5.1 Explain the advantages and disadvantages of explicit and generalized requests.

5.2 Describe procedures for teaching generalized requesting.

5.3 Describe how response prompting and stimulus control procedures can be used to teach a learner to make explicit requests.

5.4 Describe procedures for teaching a learner to appropriately request the attention of others.

5.5 Describe methods for ensuring that learners are making valid requests.

5.6 Describe why teaching the conditional use of a request may be important.

6.0 Demonstrate procedures for teaching rejecting and leave-taking.

6.1 Describe the purpose of teaching a rejecting response.

6.2 Describe the purpose of teaching a learner to use a leave-take symbol.

6.3 Describe safety signal intervention.

7.0 Describe how graphic mode symbols can be used to teach learners to follow instructions or events of a daily routine, or to shop more independently.

7.1 Describe a message board program.

7.2 List the steps involved in teaching learners to use a message board.

7.3 Describe procedures for teaching learners to use graphic symbols as an aid to more independent shopping.

8.0 Describe possible ways graphic symbols can be displayed and list materials needed for constructing various display surfaces for graphic mode communication systems.

8.1 Describe several options for displaying symbols on a graphic system.

8.2 List materials sometimes used in constructing graphic symbol display surfaces.

8.3 Describe procedures for selecting the type of graphic symbol to use on a display surface.

8.4 Describe procedures for deciding on size and spacing of symbols.

8.5 Describe procedures for teaching a learner to locate symbols in a multipage symbol display.

Communication

Session 1. : Notes and Content

CLASS INTRODUCTION

Format

Lecture

Time

5 minutes

Materials

Overhead 1

Notes

1. Introduce yourself and have participants introduce themselves.

2. Using Overhead 1 and the content provided, introduce the course goals.

Section A: Content

This is a course in augmentative and alternative communication intervention for persons with severe developmental disabilities. Without training and assistance in this area, persons with developmental disabilities do not have the same opportunities to communicate as persons without disabilities. Many individuals who do not have an augmentative or alternative mode of communication engage in socially unacceptable means to communicate with others around them. Augmentative and alternative modes of communication provides these individuals with skills and behaviors to replace the socially unacceptable behaviors.

Communication training can be and should be implemented across environments and situations. In fact, communication training can be implemented in any situation that may obligate a person to respond.

In developing an aumentative or alternative mode of communication, consideration must be given to a person's current skills as well as skills the person may have in the future. Augmentative and alternative communication should address a variety of communicative intents, consider the range of environmental variables that may influence the learner's communicative opportunities in home, work and community environments. Developing an augmentative or alternative mode of commuication will assist the person with developmental disabilities to participate in a wide variety of life options.

This course on developing an augmentative or alternative mode of communication will assist planning teams in identifying augmentative or alternative mode of communication to fit individuals' communicative needs.

DEFINITION OF AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

Format

Lecture and Discussion

Time

30 minutes

Materials

Overheads 2 through 7

Videotape

"Talk is Not a Four Letter Word" from American Speech, Language, and Hearing Association.
20 minutes

Objectives

Upon completing this section, students should be able to:

1.0 Define augmentative and alternative communication.

- 1.1 List the people who can benefit from augmentative and alternative communication.
- 1.2 Define gestural and graphic communication modes.
- 1.3 Give examples of selection techniques, symbol systems, and electronic applications.
- 1.4 List advantages and disadvantages of augmentative modes.
- 1.5 Discuss the initial steps to take before the implementation of an augmentative system is undertaken.

Section B: Content

DEFINITIONS

Augmentative communication involves supplementing a learner's existing verbal or vocal communication skills. People who use augmentative systems may combine vocal mode communication with graphic symbols or gestures. Most individuals have some existing vocal or verbal ability and continue to use these forms even after they begin using augmentative communication.

Alternative communication refers to the use of means other than spoken language or vocalizations for communication. Learners who use alternative forms of communication have no vocal or verbal communication ability and rely exclusively on signs, gestures, or graphic symbols to communicate.

PEOPLE WHO BENEFIT FROM AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

People benefitting from augmentative and alternative systems include those who find it difficult to use or are unable to use standard forms of communication (i.e., spoken language or writing). Conditions that result in a need for an alternative system can either be congenital (e.g., cerebral palsy, mental retardation, severe sensory impairments), acquired (e.g., spinal cord injury, closed head injury), or progressive (e.g., multiple sclerosis, muscular dystrophy, Parkinson's disease, ALS). Sometimes the need for an alternative or augmentative system is temporary. For example, an individual may lose her speech temporarily due to an accident or surgery, and need an alternative communication system in the interim. Some children with mental retardation show normal but delayed

Notes

1. Show Overheads #2 and #3 (Definitions) and elaborate upon the definitions with information in this section.

speech development, necessitating augmentative systems until their verbal speech is adequately developed.

DESCRIPTION OF AVAILABLE AUGMENTATIVE COMMUNICATION MODES

2. *To summarize this section, have the participants list people who can benefit from augmentative and alternative communication.*

Learners who use augmentative communication generally use one or a combination of the following available methods of communication.

1. GESTURAL

Gestural mode communication includes natural gestures that are commonly understood by members of a particular culture, such as a wave goodbye, a yes/no headshake, or the thumbs up "a-okay" gesture. Another example of gestural mode communication is Amer-Ind, a gestural system based on gestures used by Native Americans. It also includes sign languages, such as American, British, or French Sign Language, to name a few. The vocabulary, syntax, and grammar of sign languages is unique and not necessarily related to the native languages of those countries.

2. GRAPHIC

Graphic mode communication involves the use of symbols that represent actual concepts. Graphic communication can take many forms, the most common of which is writing produced either by hand or by machine. Other forms of graphic communication include photographs and line drawings. Most graphic symbols are two or three dimensional. Real objects,

miniature objects, and parts of real objects can also serve as graphic symbols. There are many kinds of graphic symbols. The most commonly used symbols include line drawings, photographs, or product logos.

SELECTION TECHNIQUES

1. DIRECT SELECTION

Direct selection is a technique in which the learner points to a desired symbol located on a communication board. The learner may point with a finger, knuckle, elbow, toe, hand-held pointing device, or may point with a device attached to his or her head. Some learners use battery operated pointers that emit a beam of light which illuminates the word or symbol to which the learner is pointing.

Eye gaze is another form of direct selection. A learner who uses this technique gazes at a symbol located on a large piece of plexiglass, plywood, cardboard or other material. The listener sits directly in front of the learner and follows the learner's gaze to determine the symbol to which the learner is "pointing." Symbols on eye gaze boards are generally double-sided so that both the listener and the learner can see the symbol. Although eye gaze boards can be made of any material, they tend to be most effective when constructed of a clear material such as plexiglass, so that the listener can better see which symbols the learner is looking at. Because of the need for widely spaced items on the surface of the eye gaze board, eye-gaze technique is seldom used with learners who are expected to develop large vocabularies, since the need to space items widely will limit the number of symbols which can appear on an eye gaze board.

3. To summarize this section, have participants define gestural and graphic communication modes.

4. Show Overhead #4 (Examples of Symbol Sets) and point out a few differences between types of symbol sets.

Direct select techniques tend to be the fastest type of selection options, provided learners are motorically capable of accessing the targets. The learner who uses a direct select technique can also be more active in the communication process than learners who must use other selection options, which are discussed in the next section.

2. SCANNING

Scanning is a selection technique that involves menuing choices to a learner. When the desired symbol has been menued, the learner produces a discrete voluntary response to signal his listener. Scanning can have manual or automated applications. In manual scanning, the listener presents choices to the learner one at a time (usually by pointing out each available option in an orderly fashion). When the listener reaches the desired item the learner might indicate his choice by, for example, dropping his hand off the table, tilting his head to the side, tapping his foot or by producing any other discrete voluntary behavior. It is best to select a motor behavior that can be easily prompted. Behaviors that occur involuntarily at high rates (e.g., eyeblinks, involuntary motor behaviors) often represent less desirable options.

In automated scanning, the learner touches a switch that activates a cursor (typically a small red light) which moves from one symbol to another in a fixed pattern across the communication board. The learner waits for the cursor to reach the desired symbol, then activates the switch again to momentarily "freeze" the cursor on the symbol.

Within automated there are several types of available scanning options. In linear or sequential scanning, choices are offered in a fixed pattern, usually beginning in the upper left corner of the symbol array and proceeding horizontally across the row to the right side of the array, then down to the first symbol on the left side of the next row. This type of scanning is very predictable. the learner only needs to use a single response to start and stop the cursor. However, it can also be a very time-consuming method, since if the symbol the learner wants to select is at the bottom of the display surface the cursor must travel through all the other symbols before reaching the desired one.

In row/column scanning, the items are offered to the learner first by rows, then by columns. The cursor starts its travels across the display surface at the top left corner of the board. On some devices, entire rows light up at a time, on others, only a marker light at the beginning of the row lights up. Once the row in which the desired symbol is located is menued, the learner activates the switch to select that row. Then, the cursor begins moving across columns from symbol to symbol to symbol within the row. When the desired symbol is menued, the learner signals to stop the cursor. This type of scanning is quite a bit faster than linear/sequential scanning. However, it may also be more difficult for some learners to use since they must be able to track a moving light in both horizontal and vertical directions. It also requires a learner to rapidly visually scan across the row that is being menued to locate his or her symbol choice.

Directed scanning is a type of scanning in which the learner uses a multi-function switch to move the cursor around the board. With this type of scanning, the cursor is usually located in the center of the

display surface. The learner uses either a joystick or separate pushbutton switches to move the cursor up, down, left, and right. Joysticks that allow diagonal movements of the cursor as well as horizontal and vertical are also available. Directed scanning allows the learner to control the cursor, and also allows backtracking in the event that the desired symbol is accidently bypassed. Instead of having to wait for the cursor to go back to the beginning, the learner merely "backs up" to the missed symbol. Consequently, it is a less time-consuming method than other scanning patterns. However, in order to use directed scanning, a learner must be able to engage in several different motor movements.

3. ELECTRONIC APPLICATIONS

Electronic communication aids have several advantages over nonelectronic systems. If learners have large vocabularies, electronic aids will allow faster access to vocabulary items than will a nonelectronic system with which a learner must turn several pages in order to get to the desired symbol. Devices with a voice output are also useful for gaining and maintaining the attention of listeners. Voice output can consist of either synthesized or digitized speech. Digitized speech is the most natural and intelligible sounding type of speech output. It is based on recorded human speech. Synthesized speech on the other hand, is based on machine generated sounds and tends to be less intelligible than digitized speech. However, synthesized speech is more flexible because messages do not have to be pre-recorded, allowing the creation of novel messages. In addition, devices with digitized speech are more expensive and have a smaller memory capacity than those with synthesized speech.

Another advantage of some electronic devices is that they can be programmed to provide voice output based on the average amount of time the learner can remain on a symbol. If a learner who uses a nonelectronic system has difficulty sustaining a point and maintaining contact with a symbol, his or her finger may slide off the symbol before the listener sees what the learner was indicating. Electronic devices can be programmed so that touching the symbol for a specified period will result in voice output. For example, some learners may slide their fingers across several symbols until they come to rest on the desired symbol. If this is the case, devices can be programmed so that voice output will not occur until contact with a symbol has been maintained for a set period of time. Other learners may have very accurate pointing skills, but may only be able to apply a slight amount of pressure for a few moments. for these learners, devices with the averaging feature can be programmed to emit voice output immediately after a slight touch. Electronic aides also allow the user to access other kinds of electronic equipment such as typewriters, computers, or environmental control systems. All of these advantages contribute to increased independence.

ADVANTAGES/DISADVANTAGES OF AUGMENTATIVE MODES

1. GRAPHIC MODE

There are a number of advantages of graphic mode communication systems for learners with severe disabilities.

First of all many graphic symbols are readily identifiable to both learners and their speaking partners. For instance, a picture of a building with

Notes

5. To summarize this section, have participants give examples of selection techniques, symbol systems, and electronic applications.

6. Show video, Talk is Not a Four Letter Word, and discuss.

a cow inside it may be guessed correctly to represent a barn. Symbols such as photographs or line drawings that look like the objects they represent are easily guessed by a wide variety of listeners. The meaning of other symbols may be more difficult to discern. For example, the PCS symbol for "cookie" looks very much like a real cookie. It is an example of an iconic symbol. The Picsyms "cookie" also resembles a cookie. While it may not be immediately recognized, someone who was provided with a little additional information (e.g., it's an edible item, it's sweet, it can be either chewy or crisp) would probably be able to guess it stood for cookie. It is an example of a translucent symbol.

The least easily guessed symbols are described as being abstract. These symbols do not bear any resemblance to their referents. An example of an arbitrary symbol, whose features bear no resemblance to those of its referent, is the Bliss® symbol for cookie.

Guessibility of symbols can affect how readily a learner can learn to use them for communicative purposes. Symbols whose meanings are guessed easily have been shown to be easier to learn than less iconic symbols (Clark, 1984; Ecklund & Reichle, 1987). For these reasons, it may be better to select very iconic symbols for beginning augmentative communication intervention with learners who have severe disabilities. Selection of symbols for graphic communication aids will be discussed in greater detail in Section 2.

7. Show Overhead #5: (Continuum of Iconicity) as a visual example of what is being discussed in the section.

Features of the symbols can be adapted to make them more easily identified by users. For instance, lines on a drawing can be made thicker and darker so that learners can more easily differentiate

between symbols. Symbols can also be coded with textures to compensate for visual impairment. For example, a symbol with a very small piece of sandpaper on one corner might be used to help the learner with a severe vision impairment differentiate between it and a symbol with a similar appearance.

Graphic systems also provide a constant display of symbols. Unlike a gestural mode user, who must be able to recall the gesture required for a situation and produce it without referring to a diagram or set of instructions in order to communicate effectively, the graphic mode user has his or her entire collection to which s/he can refer.

Graphic systems are sometimes criticized for not being very portable. Some learners have so many symbols that their systems must be housed on large boards or within bulky 3-ring notebooks. This makes transporting the system cumbersome, particularly if the learner has other things to carry. Some learners also require a great deal of time to locate a particular symbol, thus slowing down the rate of message exchange between them and their listeners. If learners are ambulatory and use electronic devices, transporting the device may be challenging. Many devices come with padded carrying cases, or have custom designed carrying cases to make transportation easier. However, if learners have difficulty carrying devices, other means of transportation, such as portable wheeled luggage carts, may need to be investigated.

2. GESTURAL MODE

Gestural mode communication also has advantages for the learner. This mode of communication is very portable. Learners who sign or use natural gestures always have their mode of communication

at their fingertips, so to speak. In addition to portability, gestures are faster to use than graphic symbols. Learners do not have to spend time getting ready to communicate, as do many graphic mode users who have to locate a symbol, turn a page in a communication book, or get a device out of its case and turn it on.

8. Show Overhead #6 (Advantages & Disadvantages of Augmentative Modes) to summarize content discussed in this section.

However, the gestural modes of communication also have their share of disadvantages. First of all, many signs and gestures are not readily understood by the general public. Oftentimes it is difficult for store clerks, bus drivers, and other community people who are nonsigners to decipher the meaning of a learner's signs.

Another potential disadvantage of gestural mode is that it often requires that the learner have sophisticated motor skills. For example, to form the American Sign Language sign for "cookie" a learner must engage in a rather complex chain of motor behaviors. The learner starts by extending his left hand, palm up, and making a "claw" out of his right hand and positioning it so that the fingertips of the right hand contact the palm of the left hand. Then, using his right hand, the learner must rotate his wrist to move his fingers in a circular motion across his left palm. For learners with gross and fine motor impairments, formation of signs may be difficult. Also, motor impairments may result in poorly formed, and thus difficult to decipher signs.

9. To summarize this section, have participants list some advantages and disadvantages of graphic and gestural modes of communication.

A further potential disadvantage of the gestural mode of communication is that learners must be able to recall signs and their meanings without visual referents. Unlike a graphic mode user, who has his available symbols in front of him, the graphic mode user must be able to form signs without additional cues.

INITIAL STEPS IN THE IMPLEMENTATION OF AN AUGMENTATIVE OR ALTERNATIVE COMMUNICATION PROGRAM

1. IDENTIFICATION OF MOTOR RESPONSES

Before beginning communication intervention, it is necessary to identify potentially reliable, discrete, measurable, and efficient motor movement or movements to serve as the communicative behavior.

Obviously, if the learner is to acquire gestures, a relatively large range of available motor movements will be necessary, but as long as the learner has at least one controllable motor movement, such as pointing, moving a finger or even an eyelid to activate a switch, then an augmentative communication system can be fitted to the learner.

The challenge is to identify a motor movement or class of motor movements which could best serve as the communicative behaviors.

2. IDENTIFICATION OF REINFORCERS

The second step before beginning intervention is to reliably identify items that the learner will select time after time. To do this, the interventionist can conduct a reinforcer preference test. Two or three items the learner is thought to like are placed in front of the learner. The interventionist asks the learner what he or she wants, and allows or encourages the learner to select an item. By changing the position of the items over sessions, the interventionist can be reasonably sure that the learner is really making a choice and not simply always reaching for the item on the left or right. Preference tests should be conducted with a variety of items in order to identify several stable preferences.

10. Show Overhead #7 (Reinforcer Preference Testing).

In addition to identifying preferred items, the same procedures can be used to identify dislikes. Once identified, dislikes can be used in teaching a learner to reject items (see Section C).

3. ASSESSMENT OF VISUAL ACUITY

If the learner is a candidate for a graphic system, it will be necessary to ascertain the adequacy of his or her vision. While reports from ophthalmologists or optometrists are the most desirable and accurate type of information to rely on, sometimes a learner's vision is difficult to assess in this manner. It may be necessary to interventionists to conduct visual acuity tests in those instances. One example is the Parsons Visual Acuity Test (Cress, et al., 1981). The Parsons Visual Acuity Test requires that an individual be able to match-to-sample. The individual is shown a drawing of a "cake," a "hand," and a "bird," and is asked to touch the drawing of the "hand." The program consists of first teaching the person to touch the drawing of the hand when shown alone. Across opportunities, outlines of the other two drawings are gradually added to the card containing the drawing of the hand. Once the learner reliably discriminates between the figures (as evidenced by always pointing to the drawing of the hand), the cards can be systematically reduced in size to determine how large the symbol must be in order for the learner to continue to make reliable discriminations.

11. To summarize this section, have participants discuss the initial steps that should be taken before implementing an augmentative system.

If the learner lacks the visual acuity to participate in a graphic-mode system involving visual symbols, some type of texture based symbol system may be appropriate.

THE RELATIONSHIP BETWEEN UNACCEPTABLE SOCIAL BEHAVIOR AND THE INABILITY TO COMMUNICATE

Format

Lecture

Time

50 minutes

Materials

Overheads 8 through 12

Objectives

Upon completing this section, students should be able to:

2.0 Recognize that there is a relationship between unacceptable social behavior and the ability to communicate.

- 2.1 Give examples of socially and non-socially motivated excess behavior.
- 2.2 Define attention, object, escape, and activity transition motivated excess behavior.
- 2.3 State the logic for implementing communication interventions as part of intervention packages for socially motivated excess behavior.
- 2.4 List methods for assessing the function of excess behavior.
- 2.5 Describe at least two different procedures that have been used successfully or may be useful for replacing an excess behavior with an appropriate communication behavior.

Section C: Content

A number of studies have found a significant relationship between the presence of unacceptable social behavior and an inability to communicate efficiently among persons with autism and mental retardation.

There appears to be, for example, a strong relationship between the presence of self-injurious and aggressive behaviors and the absence of expressive language skills in persons functioning within the moderate-to-profound range of intellectual delay (Schroeder, Schroeder, Smith, & Dalldorf, 1978).

DIFFERENTIATING SOCIALLY MOTIVATED FROM NON-SOCIALLY MOTIVATED EXCESS BEHAVIOR

Some excess behavior is engaged in for the sensory feedback it provides. Other behavior occurs to obtain objects or in order to affect the environment in some way. When excess behavior occurs primarily because of the effects it has on others it is appropriate to speak of the excess as being "socially motivated."

Often socially motivated excess behaviors are learned by persons as a way to get what they want or need. There are several types of consequences delivered by others which may have followed an excess in the past and, therefore, strengthened it as socially motivated behavior.

ATTENTION-MOTIVATED EXCESS

For some learners, excess behavior may best be viewed as a form of attention-seeking behavior.

Notes

1. Show Overhead #8 (Motivation of Excess Behavior).

2. Have participants generate some examples of socially motivated and non-socially motivated excess behaviors of clients they have worked with at their facilities.

Banging your head against a wall, throwing furniture, or pulling your own hair out are often sure-fire ways of getting others to pay attention to you.

When it can be shown that the rate of excess behavior increases as a function of the attention provided by others it is proper to speak of the excess as "attention-motivated" (Iwata, Dorsey, Slifer, Bauman, & Richman, 1982).

OBJECT-MOTIVATED EXCESS

Sometimes learners produce excess behavior because it frequently leads to access to preferred objects.

Other learners may display tantrums when a preferred object is taken away or placed out of reach, because in the past doing so has resulted in obtaining the item.

ESCAPE-MOTIVATED EXCESS

Just as some learners may have learned to display excess behavior to gain attention or to gain access to objects, others may have had a history of escaping from or avoiding tasks by exhibiting excess (Carr, 1977).

When asked to clean his room, the learner may display stereotypic rocking because in the past people have "left him alone" when he was engaging in this behavior.

Consider the learner who has learned that yelling and hitting others is a good way of escaping from a nonpreferred task. In this case, yelling and hitting

are properly referred to as escape-motivated excess behaviors.

ACTIVITY TRANSITION PROVOKED EXCESS

Often for people with severe disabilities, transitions from one activity to another can evoke excess behavior. Interruptions to a person's normal routine may tend to evoke excess behavior. For example, if a learner has a history of receiving juice after exercising, trying to give juice before exercising may be met with opposition simply because it represents a departure from routine.

SUMMARY OF THE POSSIBLE FUNCTION OF EXCESS BEHAVIOR

In summary, some learners may emit excess behavior because of the direct effects such behavior has on the environment. A person may body-rock to obtain the sensory based feedback derived from moving back and forth. Another person may remove nonpreferred objects from his environment by throwing the objects into one corner of the room. Someone else might initially scratch the location of a mosquito bite to relieve the itchiness, and continue scratching out of habit after the symptoms of the bite disappear. Because these behaviors are not engaged in to obtain attention, they are referred to as being nonsocially motivated behaviors.

On the other hand, a good portion of excess behavior may be emitted because of the indirect or the "social" effects it has on other people. Excess behavior may occur, for example, because in the past it has had the effect of getting others to attend to the person and, for whatever reason, attention happens to be an effective type of reinforcement at that particular point in time. For other learners,

excess behavior may occur because in the past it has led others to deliver or make available certain tangible objects which, for some reason, happen to be particularly effective types of reinforcement. Because these types of behaviors tend to increase after delivery of the social reinforcer, they are said to be socially motivated.

3. To summarize the possible functions of excess behaviors, have participants define attention, object, escape, and activity transition motivated excess behavior.

In addition, escape or avoidance may be the principle effect of maintaining excess behavior for some other individuals or at some other times. Another arrangement which may provoke excess behavior may be the transition between activities.

LOGIC FOR COMMUNICATION INTERVENTION AS PART OF AN INTERVENTION PACKAGE FOR SOCIALLY MOTIVATED EXCESS BEHAVIOR

For some individuals with severe handicaps, excess behavior may be maintained by its effects on others (e.g., attention, access to objects, escape/ avoidance).

Because of this, many have suggested at least some excess behavior among some individuals may be an easy to produce although unconventional means of communicating.

For learners who have not yet acquired or have failed to learn more conventional means of communicating, excess behaviors may emerge and persist because it is the only means available for affecting the actions of others or altering the environment.

One alternative involves replacing socially motivated excess with more conventional means of achieving the same effect.

For individuals with severe disabilities, teaching functionally equivalent but more acceptable forms of communicative behavior may include teaching gestural and/or graphic mode alternatives.

4. To summarize this section, have participants state the logic for implementing communication interventions as part of intervention packages for socially motivated excess behavior.

ASSESSING THE FUNCTION OF EXCESS BEHAVIOR

Although the examples presented thus far have been fairly straight forward, it is often unclear why a person engages in excess behavior. However, it will be necessary to determine these reasons if an appropriate communicative behavior is to be taught to replace the excess behavior. It would be useless, for example, to teach a person to request attention for the purpose of replacing an existing excess behavior unless that excess behavior represents the learner's way of gaining attention. Similarly it would be useless to teach an appropriate rejecting response as a replacement for aggression unless aggression was used to escape or avoid (Durand, 1987).

METHODS FOR ASSESSING THE CAUSES OF EXCESS BEHAVIOR

1. STAFF INTERVIEWS

5. Show Overhead # 9 (Staff Interviews).

One method for determining the reasons why a learner may engage in excess behavior is to simply ask staff who work with the learner. Often staff who are familiar with the person can give very reliable and accurate information concerning the person's likes, dislikes, adaptive skills, and the reasons behind his or her displays of excess behavior.

This is a relatively low cost method of assessment. The success of the method will, however, depend

upon the degree to which staff are familiar with the person's excess behaviors and the conditions under which it occurs. Often staff will need assistance to rephrase their opinions in objective terms. Success also depends upon asking the right types of questions. Several questionnaires are now available which are designed to provide structure to staff interviews for the purpose of determining the causes of excess behaviors (Donnellan, Mirenda, Mesaros, & Fassbender, 1984; Durand, 1986). For example, the Motivation Assessment Scale (Durand 1990) asks staff to respond to questions regarding the situations in which an excess behavior occurs using a scale from 0 (never occurs) to 8 (always occurs). For example, one question on the MAS reads "Would the behavior occur continuously, over and over, if the person was left alone for long periods of time?"

2. ABC ANALYSIS

6. Show Overhead #10 (ABC Analysis).

Another widely used method is known as an Antecedent, Behavior, and Consequence or ABC analysis. This method basically involves reconstructing and listing in narrative form the events which occurred prior to and after the emission of each episode of excess behavior. An example of an ABC analysis is listed below.

A (Antecedent): John was looking out the window. As soon as the residential van pulled up in front. . .

B (Behavior): John screamed and began to hit his head with a closed fist.

C (Consequence): One staff person walked over to John after he had hit his head 10 times, manually restrained his arms to prevent continued SIB and took John back to the kitchen.

Regardless of what you may think of the intervention procedures being employed by the staff person in this example, the ABC analysis helps clarify the conditions under which John engages in head hitting.

Over successive episodes should this pattern (see van, hit head, restrained/removed) be repeated, it may suggest that John hits his head as a way of telling staff he would like to go for a ride in the van. Of course this hypothesis may be more probable if it was clear that John had a history of going on van rides some of which occurred shortly after he had hit his head and if he seemed to enjoy van rides. If so, perhaps teaching John to request van rides more appropriately would produce a reduction in the frequency of the excess behavior. Or perhaps if van rides were not possible, staff could make an effort to park the van out of John's sight. At any rate, the ABC analysis may help identify the reasons or causes for an excess behavior. This information can then be used to plan an appropriate intervention.

The ABC analysis is a relatively low cost - in terms of time and effort - method of assessment. It also has the advantage of requiring no special equipment or procedures. The disadvantage, however, is that it depends upon the ability of staff to correctly identify the relevant antecedent and consequent events. Some of these events may not occur immediately prior to or after the excess behavior and hence their causal relation to the behavior may be missed.

3. STRUCTURED OBSERVATIONS

A third method of assessing excess behavior is to structure observation periods in which the rate of the excess behavior is observed under conditions

7. Show Overhead #11 (Structured Observations).

in the environment. If it is hypothesized that self-injury occurs in response to task demands, then the rate of self-injury would be compared under at least two conditions: one in which task demands are made and another in which task demands are absent.

Structured observations have the potential to yield important information concerning the conditions under which excess behavior are emitted and, therefore, offer critical assessment information for planning treatment interventions. However, because such procedures may require rearranging aspects of the learner's environment and may actually provoke the emission of some excess behavior, this type of assessment should, at the minimum, be undertaken only under the direct supervision of a qualified professional.

A complete assessment of excess behaviors will probably contain elements of all three methods in which information obtained via staff interviews and ABC analysis are followed up by a competent behavior analyst using structured observations. Assessment information is then used to select an appropriate intervention strategy

8. To summarize this section, have participants list methods discussed for assessing the function of excess behavior.

DESCRIPTION OF SUCCESSFUL PROCEDURES

Below is a brief summary of successful interventions which had addressed replacing excess behaviors.

1. TEACHING REQUESTING

Teaching more appropriate requesting behavior is one method of replacing attention-motivated or object-motivated excess behaviors.

For example, with learners whose aggression, self injury or stereotypic behavior was mainly a means of recruiting attention. Teaching a more conventional way of gaining attention (e.g., vocalizing "How am I doing?") produced not only a decrease in the excess but also an increase in the use of this more appropriate form of gaining attention (Carr & Durand, 1985). In addition, for learners who inappropriately grabbed objects, teaching use of a sign to request such objects instead proved successful in reducing inappropriate grabbing and increasing appropriate requesting (Horner & Budd, 1985).

2. TEACHING REJECTING/LEAVE-TAKING

For excess behavior that is used in order to escape from nonpreferred tasks, logic would suggest teaching a more appropriate communicative behavior to reject or leave-take from the task.

The learner who has a history of throwing disliked objects, for example, could be taught a more appropriate way to reject objects such as shaking one's head "no" or pointing to a generalized reject symbol.

The learner who tantrums to get out of a task could, alternatively, be taught to produce a sign or graphic symbol for exiting or leave-taking.

Once the learner has been successfully taught to use the newly acquired communicative behavior under the conditions which previously resulted in the excess behavior, a corresponding decline in the excess should occur.

3. TEACHING REQUESTS FOR ASSISTANCE

Oftentimes people may emit an excess behavior to escape from a task because it is too difficult.

In this case instead of teaching an appropriate rejecting response, it may make more sense to teach the learner an appropriate way to request assistance with difficult tasks (Carr & Durand, 1985; Reichle, Anderson, & Schermer, 1988).

In one study learners who exhibited excess when presented with a difficult task were taught to ask for help. As the request for assistance was acquired the rate of excess behaviors decreased (Carr & Durand, 1985).

Teaching learners to request assistance for difficult tasks and then providing the necessary assistance, may be one way to replace escape-motivated excess behavior with a more acceptable communicative skill.

4. TEACHING THE RECOGNITION OF A SAFETY SIGNAL

9. Show Overhead #12 (Timeline for Introducing a Safety Signal).

Oftentimes people may try to escape from a task but only after working at the task for some period of time.

For example, many of us consider taking a break from mowing the lawn but continue upon noticing how little is actually left to mow. Instead of taking a break one may keep going when only a little more effort is required to finish the job.

Similarly, being informed that you have only 2 more minutes or six more pieces to complete until breaktime may be sufficient to keep you working until the end.

Learners with severe disabilities who sometimes engage in excess behavior in order to terminate participation in an activity can be trained to recognize a safety signal.

A safety signal is simply an event which signals the end of the activity at hand. For example, in elementary school, a five minute warning bell may sound prior to the end of the day. This bell serves to instruct the learner that if s/he perseveres for five more minutes, s/he will be released for the day.

For a learner who emits excess behavior after working on a task for a specifiable range of time in an attempt to escape work, establishing the use of a "safety signal" may help reduce the excess.

To establish a safety signal, just prior to the point in the task when excess behavior is likely to occur, the instructor signals "we're almost done."

Immediately after the delivery of safety signal, the task is terminated; assuming that no challenging behavior has been emitted between the delivery of the safety signal and the point of release from the task. The learner is working away and then the interventionist introduces the safety signal "O.K., almost break time," and then the session ends. Across successful instances, the interval between introduction of the safety signal and termination of the task can be gradually lengthened.

To maximize the usefulness of safety signal, it is important to refrain from releasing the learner to a break immediately after the emission of an excess behavior.

10. To summarize this section, have participants describe at least two different procedures that have been used successfully or may be useful for replacing an excess behavior with an appropriate communication behavior.

INITIAL STEPS IN PLANNING AN AUGMENTATIVE COMMUNICATION INTERVENTION

Format

Lecture, discussion, 50 minutes

Materials

Overhead 13

Objectives

Upon completing this section, students should be able to:

3.0 List the steps in planning an augmentative communication intervention.

- 3.1 List four methods for identifying a learner's likes and dislikes.
- 3.2 Describe factors that determine which of three communicative intents (request, reject, describe) to implement initially.
- 3.3 List two considerations in selecting initial vocabulary to teach.

Section D: Content

STEP 1: IDENTIFYING LIKES AND DISLIKES

Before beginning an augmentative communication intervention, it will be necessary to identify objects, activities, or events that a learner seems to like or dislike. There are several ways to identify a learner's preferences for objects, activities, or events.

1. ASKING

Asking simply involves questioning either the learner or a person familiar with the learner what types of things that person likes or dislikes.

Asking is the easiest and quickest method for determining reinforcers but it is perhaps the method most prone to error.

2. OBSERVING

A second method of identifying reinforcers is to observe the individual and note the objects, activities, and events that he or she contacts on a frequent basis.

If every day you see a person drink 3 cups of coffee upon arising in the morning, it's a safe bet that coffee could be used as an effective reinforcer, at least in the morning.

Similarly, if a person frequently listens to the radio, access to a radio may serve as an effective reinforcer.

3. OFFERING

A third method for finding effective reinforcers is to offer the learner a variety of objects and see which items are frequently accepted or selected.

The offering method (sometimes called reinforcer preference testing) is particularly efficient for identifying object reinforcers that could later serve as initial vocabulary in a requesting program. (See Section A.)

If when offered a number of edible items, for example, a learner most frequently selected grapes and peanuts, then it would make sense to, at some point, teach the learner to request grapes and peanuts.

When using this method, the interventionist can make available a fair number (e.g., 5-6) of items and offer these items a sufficient number of times. Another strategy is to offer the learner only two or three items at a time from a larger pool of items. Generally, opportunities for learners to select objects should continue until clear trends in preferences emerge.

4. TESTING

The fourth method for identifying reinforcers represents a somewhat more scientific approach. Reinforcers are defined by their effect in increasing the frequency of behaviors. Reinforcers are those objects which will increase the frequency of behavior when made contingent upon behavior.

To use the fourth method, one simply selects a behavior and delivers a potential reinforcer each time the action occurs. If the behavior increases in frequency, then it is likely the delivered object is an effective reinforcer.

In summary, one necessary component to beginning an augmentative communication program is to identify at least one reinforcer. The

selected reinforcer(s) may consist of objects, activities, events, or social interaction (i.e., attention).

Similar assessment procedures can be used to identify things a learner does not like. These disliked items would then be included when teaching a learner to reject items.

STEP 2: DETERMINING MODE APPLICATION (EXPRESSIVE OR RECEPTIVE) AND WHICH COMMUNICATIVE INTENTS (REQUEST, REJECT, DESCRIBE) TO IMPLEMENT INITIALLY

Three skills are frequently considered as initial communicative objectives. Learners can be taught to use these skills to produce communication (i.e., an expressive mode) or comprehend it (i.e., receptive mode).

EXPRESSIVE MODE APPLICATIONS

Requesting using an augmentative or alternative communication system involves using graphic symbols or gestures to ask for preferred or needed objects, attention, activities, and other events. A person can be taught to ask for or request preferred objects (food, beverages, leisure materials). A person can be taught to ask for or request assistance, such as help with a task. A person can also be taught to ask for or request actions of others (e.g., "Come here," "Close the door," or "Pass the salt").

Rejecting involves using graphics or gestures to ask for or request the removal or cessation of objects, activities, or events.

A person can be taught to reject offered objects (such as nonpreferred foods, beverages, and materials). A person can be taught to reject an offer to participate in some activity, such as playing a board game or

Notes

1. To summarize this section, have participants list the four methods that can be used to identify a learner's likes and dislikes.

attending a movie. A person can also be taught to stop participating in an activity or to indicate s/he has enough of some object (e.g., "No thanks") by using a reject symbol or gesture.

Describing involves using graphic symbols or gestures to comment on objects, activities, or events.

A person can be taught to describe objects and events by pointing to matching symbols that represent the objects or by making gestures. A person can be taught to relate events of the day to a parent or others by using symbols or gestures. A person can also provide information to others (e.g., "It's raining," or "You dropped something") through symbols or gestures. A number of other describing skills could also be taught, such as recalling past events, answering questions, and general conversational skills.

RECEPTIVE MODE APPLICATIONS

Requesting, rejecting and describing are all examples of expressive communication skills. Initial communicative intents can also be implemented in programs to teach the understanding of language or receptive mode communication skills.

A person may be taught to understand speech, gestures, or symbols by performing the actions corresponding to spoken, signed, or graphic instructions. For example, a learner may be taught to pass the salt after another requests salt or to do his or her laundry after being reminded through sign that it is laundry day .

One application of a receptive task in the graphic mode involves using a picture or product logo shopping list. That is, just as you might prepare a hand written grocery list, learners can be taught to create a pictorial shopping list. A similar application involves using graphic symbols as a reminder list to perform household chores. We will discuss these applications in a later section of this module.

FACTORS TO CONSIDER IN SELECTING INITIAL COMMUNICATIVE INTENTS

1. REQUESTING

Requesting might be selected as the initial communicative intent because it allows the learner to access reinforcers and gain some measure of control over the environment.

As mentioned earlier, some learners may produce excess behavior to request items. For example, a learner might grab a preferred item out of the hands of a peer or tantrum when access to an item is denied. Teaching a more appropriate way to request items, such as selecting a symbol or producing a gesture, may thus help reduce the frequency of the excess. Teaching requesting is indicated when it becomes clear that certain items or events are important to the learner. Consequently, identifying preferences represents a critical factor in deciding to teach a learner a requesting repertoire.

2. REJECTING

Like requesting, rejecting allows the learner to exert some control over the environment, although in a slightly different way. In producing a rejecting response the learner is reinforced by escaping or avoiding contract with a nonpreferred item or event.

For learners who have few or no preferred items, but at least some nonpreferred items, rejecting represents a logical entry point in communication intervention.

Rejecting might also be taught to replace an existing excess behavior. Learners who engage in self-injury when confronted with nonpreferred objects or activities, for example, might be taught a more appropriate way to reject, such as pointing to a "no" symbol or forming a "no" gesture. An important caution must be made if the interventionist chooses rejecting as an initial focus of communication instruction. Usually undesired items or activities are offered to the learner. Unless care is taken, the learner may come to associate the "offerer" with the undesired items. If this happens the interventionist runs the risk of becoming slightly aversive and the learner may begin avoiding social contact with that individual.

It is critically important to continue the process of identifying positive reinforcers during the implementation of a rejecting program. It is also important that persons conducting the rejecting program establish a history of delivering positive events as well as offering those to be rejected.

3. DESCRIBING

Describing might be taught as the initial communicative intent, particularly for learners who tend to enjoy social interaction and attention from others. Describing, commenting, and providing information enables a learner to participate appropriately in social exchanges. Describing intervention may also be implemented as part of the communication intervention package designed to replace excess behaviors which serve primarily

as attention-getting devices. Teaching learners to initiate a conversation, for example, may help to reduce inappropriate social interaction (Hunt, Alwell, & Goetz, 1988).

4. CONCURRENT INSTRUCTION ON SEVERAL INTENTS

Usually, interventionists target a single communicative intent to establish during the early phases of intervention. An alternative is to target several different communicative intents that can be introduced concurrently.

When concurrently implementing requesting, rejecting and describing, separate interventions for each are implemented during the same period of time. For example, procedures to teach requesting can be implemented while opportunities to reject and describe are interspersed. Here, all three types of opportunities are distributed within a single intervention session.

One advantage to concurrently implementing requesting, rejecting, and describing is that discriminations among those three classes are built into the acquisition phase, perhaps resulting in a savings in terms of having to teach the discrimination after all three skills have been acquired.

2. To summarize this section, have participants describe factors that determine which of three communicative intents (request, reject, describe) to implement initially.

STEP 3: SELECTING INITIAL VOCABULARY TO TEACH - GENERALIZED VS. EXPLICIT VOCABULARY

Related to the issue of selecting the same or different vocabulary for each communicative intent is determining whether to make initial vocabulary more or less explicit.

1. GENERALIZED REQUESTING

When teaching requesting as an initial skill one could begin with a very generalized request form.

A very generalized request form, such as "want" could be taught. Producing "want" allows the learner access to a wide range of preferred items.

The advantage to teaching a generalized request is that more opportunities can be provided because the response is not dependent on any one single type of reinforcer.

Since the learner can request a variety of items, it also helps ensure that numerous instructional opportunities will occur throughout the day, and alleviates the possibility that the learner will become satiated on one item.

A generalized request might be taught as an initial skill with learners having a wide variety of reinforcers. A generalized "want" provides them with an initial means of accessing a variety of items.

3. Show Overhead #13 (Differences Between Generalized and Explicit Requests) and discuss.

2. EXPLICIT REQUESTING

Explicit request, on the other hand, could also be taught as the initial skill.

4. To summarize this section, have participants list two considerations in selecting initial vocabulary to teach.

For example, learners could be taught the symbols or gestures for "apple", "radio", or "baseball" to access specific items. Explicit requests place fewer interpretive demands on listeners, since the listener has more information to know exactly what the learner is requesting. Explicit and generalized requesting will be addressed in greater detail in Session 2.

A DESCRIPTION OF INSTRUCTIONAL TECHNIQUES USED IN THE IMPLEMENTATION OF AUGMENTATIVE COMMUNICATION SYSTEMS

Format

Lecture

Time

1 hour, 30 minutes

Materials

Overheads 14 through 17

Objectives

Upon completing this section, students should be able to:

4.0 Describe instructional techniques used to implement augmentative communication systems.

- 4.1 Describe the importance of analyzing the environment to identify needed communication skills.
- 4.2 Describe how stimulus prompting can be used to teach generalized requesting.
- 4.3 Demonstrate a verbal, a gestural, a modeling, and a physical prompt.
- 4.4 Describe several ways to fade response prompts.
- 4.5 Define incidental teaching, mand-model, and time-delay procedures.
- 4.6 Describe two alternatives for implementing intervention opportunities.
- 4.7 List several strategies for promoting both stimulus and response generalization.

Section E: Content

ANALYZING THE LEARNER'S ENVIRONMENT TO IDENTIFY NEEDED COMMUNICATION SKILLS (ECOLOGICAL INVENTORY)

Before developing a communication program for a learner, it is important to determine the activities, locations, and situations for which communication is needed. One technique for identifying needed communication skills involves conducting an ecological inventory, sometimes called an environmental analysis, of the environments in which the learner participates. An ecological inventory provides a detailed picture of a particular environment and the skills that are needed to participate in the various activities that go on in the environment. It also provides a way to assess a learner's skills in an environment by comparing the learner's performance to how a nonhandicapped person performs the same activity. (For a more detailed description of how to conduct an ecological inventory or environmental analysis, please see Brown, et al., 1979; Reichle, York, & Sigafoos 1991, and Schleien & Ray, 1988.)

Ecological inventories help to identify areas in which learners have communication as well as other skill deficiencies. For example, a learner may be fairly accomplished at exiting a car, walking up the sidewalk, opening the door of the bowling alley, and bowling a game with a peer. However, her communication deficits mean she cannot ask for a pair of bowling shoes in her size, request assistance in tying them, or tell her partner she'd rather not play another game.

Conducting an ecological inventory will allow the interventionist to delineate communicative obligations such as those described above.

Notes

1. To summarize this section, have participants discuss the importance of analyzing the environments to identify needed communication skills.

Obligatory utterances are those that must be emitted by the learner in order to gain access to, maintain, or terminate an activity. Additionally, an ecological inventory will yield a description of communication opportunities available in certain activities. For example, greetings are not obligatory in ordering a fast food meal. That is, the learner's order will be filled successfully regardless of whether he says hello. However, producing a greeting may qualitatively improve the interaction with the clerk. Primary intervention targets consist of obligatory communicative events while secondary intervention targets consist of communicative opportunities.

SELECTING INTERVENTION PROCEDURES TO INSURE THAT THE TARGET BEHAVIOR IS EMITTED

1. USING STIMULUS PROMPTING

An important preliminary step in the development of a communication program is to identify ways to ensure that learners will engage in the behavior targeted for instruction. One way to do this is to use stimulus prompting whenever possible.

2. Show Overhead #14 (Enlarged and Enhanced Generalized Requesting Symbol "Want").

Stimulus prompting involves drawing the learner's attention to certain distinctive aspects of an object or activity to cue the learner to engage in a behavior. For instance, if a learner is being taught to touch a card with the word "want" (a generalized request symbol) an example of stimulus prompting would be to begin with a 4-inch by 6-inch card with the word "want" printed in very large letters. Because the card is large, the learner is more apt to see it on the table in front of her and reach out to touch it. Over consecutive teaching opportunities, the interventionist would gradually reduce the size of the card and the size of the print, an example of stimulus

fading, until it reaches the ideal size for placement on a communication board or in a wallet.

An interventionist could use stimulus prompting in a different way as well. For example, a learner who is being taught a generalized request which might consist of selecting a "want" symbol and reaching for an object may initially try to reach around or over the "want" symbol. To overcome this problem, the interventionist could pick up the "want" symbol as soon as he sees the learner beginning to bypass it, and place the symbol directly in front of the learner's hand so that she has no choice but to touch it if she wants to obtain the object.

2. RESPONSE PROMPTING

Response prompting could also be used to teach the learner to touch a symbol. The interventionist could choose to verbally prompt, provide a model, or use physical guidance to assist the learner in performing the behavior. Often, interventionists use a prompting hierarchy during instructional trials beginning with the least intrusive prompt and proceeding to the most intrusive prompt. ("Intrusive" is a term used to describe how much assistance is provided by the prompt, as well as how noticeable or distracting it is to others.) A frequently used prompting hierarchy consists of first giving a verbal prompt, then a model, and finally using physical guidance until the behavior occurs (Snell, 1986; Billingsley & Romer, 1983). This is sometimes called an increasing prompt hierarchy. Another way to arrange prompts is in order from most intrusive to least intrusive (Schoen, 1986).

3. Show Overhead #15 (Size Reductions of a Generalized Requesting Symbol "Want").

4. To summarize this section, have participants describe how stimulus prompting can be used to teach generalized requesting.

Response prompts must be systematically faded if the goal is to have the learner respond to the naturally occurring cue. Fading response prompts basically involves giving less and less assistance as learners come to perform more and more of the response on their own. For example, to teach the learner to emit the sign for spoon it may at first be necessary to physically move the learner through each step of the sign. Over training opportunities, however, it may only be necessary to pick up the learner's hands and begin placing them in the correct position. At this point the learner may complete the sign independently and the interventionist can simply let go. Still later in training, the interventionist may need only touch the learner's elbow to prompt the response sequence. By gradually delivering less and less physical assistance, the intensity of the prompt is faded until it is no longer necessary to provide for any form of physical assistance.

5. To summarize this section, have participants provide examples of the various types of prompts (verbal, gestural, modeling, physical).

6. Have participants describe several ways to fade response prompts.

A similar strategy can be used to fade verbal and gestural or modeling prompts. For example, to fade the verbal prompt "wash your hands" the interventionist could shorten the prompt over trials to "wash hands," then "wash," then "wa" until the verbal prompt was no longer needed. Another way to fade verbal prompts would be to provide the verbal prompts on an intermittent basis. On some teaching opportunities the verbal prompt would be delivered; on others it would not be delivered. As the learner's skills increased, fewer and fewer verbal prompts would be offered. Gestural prompts can be faded by moving from a very deliberate point to a carelessly executed movement in the general direction of the task at hand.

NATURAL ENVIRONMENTS INTERVENTIONS

1. INCIDENTAL TEACHING

7. Show Overhead #16 (Natural Environment Interventions).

Incidental teaching (Hart & Risley, 1975; Reichle & Keogh, 1985; Halle, 1988) involves arranging the environment to encourage the learner to initiate a request for materials or assistance, or describe or label an object. Once the learner has initiated a request, the interventionist approaches and requests the learner to ask for the item using a more complete communicative response. For example, if the learner points at a desired item, the interventionist might model the word associated with the desired item. The first step, therefore, is to wait for the learner to initiate a teaching opportunity by showing some interest in an object or event. For example, the learner may reach for a ball out of reach on the top shelf. Next the interventionist approaches and prompts, if needed, the request. Once a request is made the item of interest is delivered. One potential limitation of the incidental paradigm is that it requires learners to initiate instructional opportunities. Yet many learners with handicaps may not initiate or will do so only on a limited basis. For these learners, the mand-model procedure , described in the next section, may be useful. Mand-model uses teacher initiated opportunities as an alternative to learner initiated opportunities.

2. MAND-MODEL PROMPTING

Mand-model prompting is a language training technique that involves centering the interaction around materials or events in the learner's environment. Interaction is initiated by the interventionist, who directs the learner's attention to an object or event and mands (instructs) the

learner to request or describe the object or event. Once the learner has responded, the interventionist provides positive reinforcement and allows the learner access to the activity. If the learner does not respond or responds inappropriately, the interventionist mands (asks for) or models the correct response.

3. TIME DELAY

Oftentimes learners need to be prompted with verbal cues, models, or physical assistance to perform necessary behaviors. Eventually, though, it is desirable to eliminate the use of these prompts to obtain independent, spontaneous, or self-initiated responses. One way to fade prompts is to simply insert a delay between the natural cue and the delivery of the prompt. This delay may start out being very short (e.g., 1 second) and gradually increase in duration or it may begin and remain at a constant length (e.g., 15 seconds). A third option is to adjust the length of the delay depending on the learner's behavior. Less time is allowed if the learner is about to make an error; more time is allowed if the learner is attempting to emit the response.

8. To summarize this section, have participants define incidental teaching, mand-model, and time delay procedures.

ALTERNATIVES FOR IMPLEMENTING INSTRUCTIONAL OPPORTUNITIES

1. MASSED OPPORTUNITIES

During initial opportunities of a skill, it is often desirable to provide a high density of opportunities for the learner to practice the developing behavior. Massed trial instruction is one format for accomplishing this. A learner being taught a generalized request may be provided with a number

of consecutive opportunities to request objects. As soon as one trial is completed and the learner is allowed to consume or use the item, the next trial is initiated. Between instructional opportunities there is no intervening instruction.

Although massed teaching opportunities may represent an overused strategy, in some applications it is very useful. For example, requesting second and third helpings of food at dinner represents functional massed opportunities. Similarly, saying "your turn" upon completing one's turn in a card game borders on a massed trial application.

2. DISTRIBUTED OPPORTUNITIES (INCLUDING SKILL CLUSTERS)

Unlike massed trial instruction, intervention opportunities in a distributed trial format are separated by a period of time during which other intervening events are programmed. For example, in a distributed trial format, a learner may receive instruction on using a communication wallet to make requests once during the morning snack time, later at lunch, and finally during the evening meal. The defining characteristic of distributed opportunities is that other activities intervene between the requesting opportunities.

A skill cluster approach is a special case of distributed training opportunities. In this approach, a learner is taught a variety of skills from different domains in the context of one activity. A skill cluster for going to a fast food restaurant might include dressing in appropriate outerwear (domestic/self help), crossing streets (community), ordering food items (communication), asking for assistance to open a milk carton (communication),

9. To summarize this section, have participants describe the two alternatives for inplementing intervention opportunities.

using a napkin at appropriate times (domestic/self help), taking trash to the trash bin (domestic/self help), and returning home (community). A strategy like this allows the interventionist to monitor the learner's progress in each of the two formats. If, for example, the learner progresses faster in the massed format than in the distributed, the interventionist may decide to add additional massed opportunities during each day, or incorporate opportunities for massed practice within the distributed trial skill cluster.

PROMOTING GENERALIZATION

It is also important to address the issue of generalization when designing an instructional program to teach communication skills. Stimulus generalization refers to the occurrence of a class of behaviors under conditions which are different from those present during acquisition (Stokes & Baer, 1977).

For example, if a learner has been taught to request assistance with opening a jar of peanut butter (Reichle, Anderson, & Schermer, 1988) and later, without prompting, requests assistance with undoing the twist tie on a bag of bread, the response (request for assistance) has "generalized" to a novel stimulus condition.

TYPES OF STIMULUS GENERALIZATION

There are a number of dimensions to stimulus generalization relevant to communication intervention. Some of the more frequently addressed include:

1. ACROSS PERSONS

It is important that a learner be able to use acquired communication skills in the presence of people other than those conducting the interventions establishing the behavior. For example, if the greeting response ("Hi") only occurred in the presence of the person directly connected with teaching this response, it would not be a very useful skill (Garcia, 1974).

2. ACROSS SETTINGS

Another type of generalization is producing behavior acquired in one setting in another appropriate setting. For example, if a learner has been taught to order a hamburger, fries, and Coke® at McDonald's® and is then also able to order the same meal at Burger King®, meal ordering has generalized across settings.

3. ACROSS MATERIALS

A third type of generalization involves emitting a behavior taught with a particular set of materials in the presence of similar materials. For example, if the learner has been taught to request assistance with opening jars of peanut butter and then also, without direct training, requests assistance in opening other type of jars, doors that won't open, or in closing a stuck zipper, the request for assistance has "generalized" across materials.

4. SPONTANEITY

Spontaneous use of a communicative behavior is another type of generalization. Spontaneity is evidenced when a behavior occurs in the absence of

an overt prompt, in response to natural cues; for example, if a learner approaches an unfamiliar clerk in an unfamiliar grocery store and asks for help locating tomato soup, he or she is spontaneously requesting assistance.

5. ACROSS COMMUNICATIVE FUNCTIONS

Generalization across communicative functions occurs when a learner who has been taught to use one type of communicative behavior (e.g., request an item) uses a variation of the behavior for a different purpose (e.g., to comment on the existence of the same item). For example, if a learner who has been taught to request a mixing bowl during meal preparation instruction spontaneously points to a display of mixing bowls and says "bowl" during a shopping trip to the housewares section of a department store, he or she has generalized from requesting to labeling.

STRATEGIES FOR ENSURING STIMULUS GENERALIZATION

10. Show Overhead #17 (Strategies for Promoting Generalization).

Obtaining generalization of newly acquired communicative behavior is often a problem. It has frequently been noted that communication skills do not always generalize across people, settings, or materials (Halle, 1982).

There are several effective strategies to promote generalization that are relevant to communication intervention (Stokes & Barr, 1977).

1. USING MULTIPLE EXEMPLARS

The goal of intervention is to establish communicative behaviors which occur in a variety of settings, in the presence of a person other than the interventionist and/or across a range of materials. The multiple

exemplar approach involves incorporating a variety of persons, settings, and materials into the intervention opportunities designed to teach initial communicative behaviors. For example, one way to promote generalization across persons is to have several people actually implement the intervention. To promote generalization across settings, a variety of settings are used during intervention. To teach a person to request assistance, for example, across a range of materials, this skill could be taught in the context of a variety of tasks, such as opening jars, packages, doors, putting on shoes, socks, or a coat.

To increase the effectiveness of the multiple exemplar approach for promoting generalization, it is necessary that the exemplars selected for training adequately sample the range of variation that the learner will encounter in the natural environment. For example, if the goal is to teach a learner to order meals in a variety of restaurants, generalization across a variety of restaurant types would be more likely if several types of restaurants are included as training exemplars. Teaching meal ordering at McDonald's® and Burger King®, may not adequately sample the diversity of food in restaurants and hence the person would not be expected to successfully order meals at Perkins® or T.G.I. Friday's®. In selecting exemplars to be used in training it is important to select examples which represent the "general case" (Horner & McDonald, 1982; Sprague & Horner, 1984) or adequately sample the range of diversity in settings, materials, people, etc.

The goal of teaching general case is to ensure that the learner will be able to respond to all types of stimuli which occasion a behavior after instruction on only some of those stimuli. In addition to

emphasizing instruction to ensure that generalized responses will occur across the full range of appropriate conditions, the approach also emphasizes ensuring that the response will not occur in inappropriate conditions.

Briefly, general case programming involves defining the instructional universe, identifying positive and negative teaching exemplars, teaching the learner to respond in the presence of the selected positive exemplars, and to refrain from responding in the presence of negative exemplars, and conducting probes on untrained items.

Defining the instructional universe, the first task, consists of identifying all the stimuli that are relevant to a particular activity. For example, if one wants to teach a learner to request beverages, the instructional universe would be defined as all beverages that are available in the various settings the learner accesses. Positive and negative teaching exemplars of beverages are then selected.

Positive and negative teaching exemplars would consist of a sample of the items that a learner would and would not request. The exemplars selected should sample the range of diversity among the particular class of stimuli. Instructional opportunities are then designed to teach the learner to respond in the presence of the selected positive exemplars and refrain from responding in the presence of the selected negative exemplars. The learner's performance is probed on untrained exemplars similar to those used in instruction.

2. USING NATURAL MAINTAINING CONTINGENCIES (Stokes & Baer, 1977)

One of the best ways to ensure generalization is to teach behaviors which have relevance in the natural environment and will, therefore, be maintained by natural contingencies. A contingency is simply an if-then statement (Lee, 1988). For example, if the learner produces the "want" sign, then the interventionist will provide access to reinforcers. To make sure such a request contacts natural maintaining contingencies, one should teach skills which are likely to be "understood" by others. For example, the American Sign Language representation "want" is more likely to generalize if persons in the learner's natural environment are familiar with or taught to interpret that sign. For persons not familiar with signs the printed word "want" may have a better chance of being effective.

One aspect of generalization is therefore simply to ensure that the persons with whom the learner will be interacting are familiar with the system of communication that has been taught to the learner. Another aspect is to ensure that functional and ecologically valid skills are targeted for instruction. Attention to both of these factors may increase the chances that newly acquired communicative behaviors will contact natural maintaining contingencies.

3. LOOSE TRAINING

Another strategy to promote generalization is to "train loosely" (Stokes & Baer, 1977). This strategy basically involves introducing variation in the stimuli, cues, materials, and other arrangements used during intervention. Sometimes intervention procedures instruct the interventionist to say the

same thing, in the same manner, for example, on each opportunity. Using a loose training strategy, however, one would make an effort to vary these features across instructional opportunities. For example, in teaching the label "apple," the interventionist may on some occasions, hold up a green apple, on others a red apple. Some opportunities may be initiated with the question, "What is this?", others with the question, "What do you want?", or simply "What?" Sometimes the apple may be held up other times only pointed to, etc. Using this strategy, generalization may occur because precise control over procedures is "loosened" through variation in subtle aspects of the teaching methods (Campbell & Stremel-Campbell, 1982).

4. PROGRAMMING COMMON STIMULI

A fourth strategy is to make sure both the training situation and the natural environment share common features. Suppose in teaching a learner to request juice, a particular container which holds the juice was always present during training. The sight of this container may, therefore, come to control requests for juice. By using that same juice container in the natural environment, that is, by programming common stimuli, generalization of requests for juice to the natural environment may be more likely to occur. Basically, the training situation and the natural environment should be made as similar as possible.

11. To summarize generalization, have participants list several strategies for promoting both response and stimulus generalization.

SUMMARY AND CLOSING

Format

Lecture

Time

5 minutes

Materials

None

Notes

Review the main points presented in Session 1.

Communication

Session 2. : Notes and Content

INTRODUCTION TO SESSION 2

Format

Lecture

Time

10 minutes

Materials

None

Notes

1. Briefly review the main points from Session 1. (5 minutes)
2. Briefly explain what Session 2 will address. (5 minutes)

TEACHING REQUESTING USING A DIRECT SELECT COMMUNICATION SYSTEM

Format

Lecture

Time

60 minutes

Materials

Overheads 18 through 21

Objectives

Upon completing this section students should be able to:

5.0 Demonstrate the procedures for teaching requesting using a direct select communication system.

5.1 Explain the advantages and disadvantages of explicit and generalized requests.

5.2 Describe procedures for teaching generalized requesting.

5.3 Describe how response prompting and stimulus control procedures can be used to teach a learner to make explicit requests.

5.4 Describe procedures for teaching a learner to appropriately request the attention of others.

5.5 Describe methods for ensuring that learners are making valid requests.

5.6 Describe why teaching the conditional use of a request may be important.

Section B: Content

DIFFERENTIATING AMONG TYPES OF REQUESTS

1. REQUESTS FOR OBJECTS/EVENTS

    A. Advantages and Disadvantages of Teaching a Learner to Make Explicit Requests

Initially, beginning communication programs may focus on teaching a learner to make requests for preferred objects or events. Typically learners are taught to point directly to the desired object or a symbol that represents the object or event. They are reinforced by being given the object or being allowed to engage in the activity. This is known as making an explicit request. This strategy, while useful, can result in confusion later on. For example, during break time at the day program site, the learner might point to the symbol for television. A listener could interpret this behavior as a request to watch television, and respond by saying "No, you'll have to wait until you get home. We don't watch TV here." On the other hand, the learner may have been commenting on the fact that she watched television the night before. Because the learner was taught to use the same response to request and comment, listeners may have difficulty differentiating between these two communicative functions.

An alternative is to teach generalized requesting. Making a generalized request consists of using a graphic symbol, for instance a card with the word "WANT" written on it to request a desired object or event. Use of the generalized request symbol makes it apparent to the learner's listener that the learner's utterance was a request. Later on, the

learner might be taught to chain generalized request "want" to an explicit symbol "cola" in order to more explicitly request.

There can be advantages to teaching learners to make explicit requests in the absence of first establishing a more generalized request. Explicit requests may be optimal for learners who have only one or a few strong preferences. Thus explicit requests can be taught to cover each of the preferred items. There is even more reason to teach explicit request when these few preferred items are stable and unlikely to change. In this case responses taught as explicit requests will be useful for a long period of time. Finally, explicit requests are highly efficient when the majority of requesting is to occur in the community. In the community it helps to be explicit (e.g., small root beer) rather than general (e.g., drink).

B. Advantages and Disadvantages of Teaching a Learner to Make Generalized Requests

Keogh and Reichle (1985) recommended teaching the learner to use a generalized requesting symbol whenever he or she wants to make a request. The generalized requesting symbol is an arbitrary symbol that the learner is taught to point to in order to make a request. Often, the generalized request symbol consists of the printed word "want" affixed to a card. The learner is first taught to make requests by pointing to the generalized requesting symbol in order to receive the reinforcing object or activity. Then, the learner is taught to touch "want" and also touch a symbol that represents a desired item or activity.

Teaching the learner to use a generalized requesting symbol, either in isolation or in combination with

other symbols, offers several advantages. First, it differentiates between the communicative functions of requesting and describing. The learner points to "want" or "want" plus a more explicit symbol in order to make a request. Commenting or describing, on the other hand, is accomplished by pointing directly to the more explicit symbol. This helps eliminate confusion on the part of listeners, who may have no way of differentiating a request from a comment. Teaching the learner to use a generalized request also enables her to request a wide variety of items throughout the day simply by pointing to one symbol and then selecting from among the choices. In contrast, a student who is being taught to explicitly request a cookie by pointing to the symbol for a cookie is limited in her opportunities to request a cookie to those times when cookies are present, at least in the initial phases of such a program. She is also limited to requesting only cookies until she learns to discriminate between and use other symbols.

2. REQUESTS FOR ATTENTION

In addition to being taught to request objects or events, learners may be taught to make other kinds of requests, for instance, requests for attention. Often, because many learners who are nonambulatory cannot independently approach a listener and tug on his or her arm, they experience difficulty in gaining the attention of potential listeners. Thus, spontaneous communication attempts are limited to those times when a listener is in the immediate vicinity, attending to the learner. One way to solve this problem is to teach the learner to engage in a behavior that will recruit the attention of potential listeners.

Notes

1. To summarize, have participants explain the advantages and disadvantages of explicit and generalized requests.

2. Show Overhead #18 (Requesting Assistance).

3. REQUESTS FOR ASSISTANCE

Learners may also be taught to request assistance. For example, during an assembly task in a vocational activity, a learner is consistently unable to perform a particular step. He always stops working when he reaches that step, and waits until a staff-person comes over to complete the step for him. Since he has previously been judged physically unable to perform the step, and adapting the task or providing a prosthetic device are not feasible, staff have decided that doing the step for him is the best solution. However, because his production rate is extremely variable, staff find it difficult to predict when he will need assistance. This slows down his production rate even more.

A workable solution to this problem would be to teach the learner to request assistance when he reaches the step in the task that he cannot complete independently. For instance, the learner might be taught to point to an arbitrary symbol that represents a request for help, or the printed words "help, please" affixed to a card.

4. REQUESTS FOR PERMISSION

A fourth type of request is for permission to cease participating in an activity. This may be a critical skill to target, especially with people who engage in excess behavior in order to get out of an activity that has lost its reinforcing qualities. For example, a learner may signal that she is tired of working by shoving her work materials off the table and leaving the room. Staff decide to teach her to signal the need to take a break, a more appropriate way of communicating her desire to leave.

BEGINNING TEACHING GENERALIZED REQUESTING

1. TEACHING THE LEARNER TO SELECT A SYMBOL, THEN TAKE AN ITEM

The first step in teaching the learner to use a generalized request is to select an arbitrary symbol to represent a request. Often, the printed word "want" on a card is used in the initial phases of a program. The card is placed in front of the learner and an array of two or three items the learner seems to like is placed on a tray just beyond the learner's reach. When the learner starts to reach for one of the items, the interventionist prompts the learner to touch the card.

2. TEACHING DISCRIMINATION BETWEEN "WANT" AND A DISTRACTER

After the individual has learned to touch the generalized request symbol, then reach for a preferred item, the next step is to teach the learner to discriminate between the "want" symbol and a distracter.

The reason for teaching a discrimination between "want" and another symbol is to allow expansion of vocabulary. When new vocabulary items are taught it will be necessary to ensure that the learner discriminates between symbols. Otherwise the learner will simply point to a symbol regardless of the circumstances. We want the learner to be able not only to point to symbols but also to point to the "correct" symbol. Teaching this basically involves discrimination training. One means of doing this is to pair the "want" symbol with a slightly smaller blank card. A blank card is used initially to make it very easy for the learner to discriminate it from the

3. Show Overhead #19 (Teaching Discrimination Between a Generalized Requesting Symbol "Want" and a Distracter).

"want" symbol. The learner is presented with several reinforcing objects. He or she is required to touch the "want" symbol before selecting an item. If he or she begins to reach for the blank card, interrupt the response by stopping the learner's hand and making the learner start over, or by picking up the "want" symbol and placing it directly in front of the learner's hand.

If the learner goes for the blank card, the interventionist can also enlarge the "want" symbol and decrease the size of the blank card even more so that it is even easier for the learner to discriminate between the two. Then, over time, the interventionist will have to gradually reduce the size of the "want" card while gradually increasing the size of the blank card.

The interventionist should vary the position of the "want" card and blank card over trials so that the learner doesn't inadvertently learn to "always touch the one on the right," for example.

3. INTRODUCING A GRAPHIC LINE DRAWING TO THE PREVIOUSLY BLANK DISTRACTER

4. Show Overheads #20 and #21 (Introducing Graphic Elements to a Blank Distracter Symbol "WRITE").

Once the learner has demonstrated the ability to discriminate between "want" and a same sized blank card, the interventionist should begin fading a graphic symbol onto the blank card. This is done to approximate the situation that the learner will be faced with in the future discriminating between several different line drawings or symbols. The symbol chosen should be one that the learner will in all likelihood never need to use. This is because the interventionist wants to build a history of the learner always choosing the "want" symbol and never choosing the other symbol.

4. MOVING FROM GENERALIZED TO EXPLICIT REQUEST (CHAINING "WANT" TO OBJECT NAME)

5. Have participants describe procedures for teaching generalized requesting.

After the learner has demonstrated the ability to discriminate between "want" and a distracter, the next step is to teach the learner to touch the generalized request symbol, then touch a symbol which represents a preferred item, before selecting the item. This will involve placing a symbol that represents the item next to the generalized request symbol. The learner is offered an item shown previously to be one that he or she prefers and will select consistently. In order to obtain the item the learner must first touch "want," then touch the more explicit symbol. After the learner has acquired the behavior of chaining touching "want" to touching the object label, the interventionist re-introduces the distracter symbol in order to probe the learner's ability to discriminate between symbols. Should the learner fail to discriminate and touch "want," and then attempt to touch the distracter symbol, the interventionist should interrupt the learner, and allow him/her to try again. If the learner persists in making errors, the interventionist has several available options. He or she can go back to using the blank card instead of the distracter and gradually fade on the distracter as done previously. Or, the interventionist can increase the size of the object label, increase the distance between the object label and the distracter, or move the object label directly in front of the learner's hand as s/he begins to reach forward. When the learner has demonstrated the ability to discriminate between the object label and the distracter, the interventionist may begin to introduce additional object labels in the same manner. Eventually, the learner should be able to touch "want" and any of a number of symbols to select a desired item. In order to ensure that a

learner is requesting what s/he actually wants, the interventionist should allow the learner to take the selection from the array on some occasions, instead of having the interventionist always giving the requested item to the learner. If the learner frequently takes an item other than the one s/he requested, the interventionist may have to conclude that the learner is not discriminating between object labels. In that case, the interventionist would need to return to a previous step and re-train the learner to discriminate between object labels.

The interventionist should also provide opportunities for the learner to request items for which s/he does not yet have representative symbols. For example, if the learner is offered a banana, a glass of milk, and a chocolate covered cherry, a highly preferred but seldom offered reinforcer, and her symbol choices are "banana" and "milk" she could touch "want" then touch banana or milk which are known to be somewhat neutral items. Or, she can touch the generalized request "want" and refrain from touching any symbol in order to request the chocolate covered cherry.

BEGINNING INSTRUCTION WITH EXPLICIT REQUESTING

1. USING A RESPONSE PROMPT FADING APPROACH

If a decision has been made to teach a learner to make explicit requests (going directly to the object label to make a request) rather than generalized requests (chaining "want" to an object label), procedures for teaching requesting will be slightly different than those outlined previously. Traditional requesting programs usually involve teaching the learner to touch a symbol that represents a desired object in order to obtain that object.

In order to teach the learner to touch the symbol, interventionists usually use a system of response prompting. For example, the interventionist could make a cookie available to the learner, and place a symbol representing cookie near the learner. He or she could use a system of least-to-most intrusive prompting by first presenting the natural cue (i.e., "What do you want?") and waiting for the learner to point to the cookie symbol independently. If the learner did not point to the symbol, the interventionist could repeat the cue and gesture to the cookie symbol. If the learner did not respond, the interventionist could repeat the cue, gesture again, and then model a discrete point to the "cookie" symbol. If the learner had not responded up to this point, the interventionist would repeat the cue, gesture, model, and then move the learner's hand forward to touch the symbol.

Another type of response prompting is called most-to-least prompting. To implement this procedure, the interventionist would identify the most intrusive prompt to which a student will respond and pair the natural cue with that prompt. For example, if a learner needs a modeling prompt to touch a symbol, the interventionist would present the natural cue "What do you want?" and simultaneously move the learner's hand forward to touch the symbol. Over teaching opportunities, physical assistance would be faded until the learner touched the symbol after only a slight touch to his/her hand. As soon as the learner reached criterion on this step the interventionist would use the next less intrusive prompt level. Following this same example, the interventionist would present a more natural cue "What do you want?" or the availability of an item that can be requested and a modeling prompt during subsequent teaching opportunities.

The modeling prompt would be used until the learner reached criterion on this step. At that point, the interventionist would move down to the next level of prompting, for example, a gesture toward the cookie, and follow the same procedures. At any point in the process, if the learner makes an error by not responding or responding incorrectly after being given the specified prompt, the interventionist will need to use an error correction procedure.

An error correction procedure would consist of interrupting the learner's incorrect response and correcting the learner's behavior. This could be done with physical guidance, a gesture, a verbal direction, or a combination of these prompts to direct the learner to perform the correct response. Often, interventionists arbitrarily identify verbal prompts as the least intrusive prompts in least-to-most or most-to-least prompting heirarchies. Unfortunately, utilizing a verbal prompt as the least intrusive prompt may result in a learner becoming dependent on verbal prompts. Depending on verbal prompts can be avoided by identifying prompts that are easier to fade than verbal prompts (i.e., gestures or models) and using these as the least intrusive prompts in the heirarchy. Another way to avoid dependency on verbal prompts is to only use verbal prompts occasionally. On some trials, an interventionist would use the prompt, on others, it would be bypassed.

2. USING A STIMULUS PROMPT FADING APPROACH

An alternative method for teaching the learner to make explicit requests involves the use of a stimulus control procedure. Stimulus control basically refers to the prior antecedents in the environment, that when present, set the occasion for a response. Learners

with whom this procedure will be used should be able to recognize product logos and also have fairly stable reinforcer preferences. For instance, if during a trip to the grocery store a learner always tries to take a snack size bag of cheese curls as she goes through the check out, and never turns down a snack of cheese curls, one can probably assume that she has made the connection that this particular bag with its distinctive logo contains her favorite snack.

An interventionist who wants to use stimulus control procedures to teach such a learner to make explicit requests would first identify a reinforcer, which in this example is a cheese curl. He or she would obtain an empty snack sized bag of the learner's favorite cheese curls. By inflating the bag with air, and taping the open end closed, the interventionist will have a very realistic looking, but empty bag of cheese curls. The interventionist will place the empty bag directly in front of the learner, between the learner and a small plate on which several of these favorite edibles are placed. The learner will be asked, "What do you want?" and as she reaches for the cheese curls, the interventionist will move the bag forward so that the learner touches it, then will allow her to take some cheese curls. Over successive opportunities, the interventionist will fade these stimulus prompts until the learner touches the bag independently before reaching for the cheese curls.

Over successive training opportunities, the interventionist will gradually deflate the bag until it is two dimensional. Then, he or she can either begin gradually cutting away parts of the bag over opportunities until only the most distinctive parts of the logo remain. Or, the interventionist can take the bag to a copying center that offers color

reproduction services and have successively smaller color reproductions made of the logo.

Using gradual size reductions of this type help to maintain the learner's performance of pointing to the logo in order to make a request. The objective is to achieve a size reduction that will fit in a wallet or on a communication board. If at any time during intervention the learner's performance begins to suffer, the interventionist should reintroduce a slightly larger symbol. When the learner's performance improves, the interventionist can return to the smaller logo. When the desired size has been reached, or when the learner demonstrates that he or she cannot discriminate anything smaller, the interventionist can mount the symbol on an appropriate sized piece of tagboard and either cover it with clear plastic, laminate it, or place it into the plastic credit card holder of a wallet.

At this point, it will be important to determine the learner's ability to discriminate between the explicit requesting symbol and a distractor symbol.

The same procedures that were used in teaching symbol discrimination in a generalized requesting program apply to this strategy as well. After the learner has acquired the ability to discriminate between the product logo and a blank distractor, graphics should be added gradually to the blank distractor. Then additional explicit requesting symbols can be identified. Throughout instruction, it will be necessary to randomize the location of the explicit requesting symbol within the pages of the wallet insert to avoid inadvertently teaching the learner that "the request symbol is always on the second page," for example. The objective is to ensure that the learner will be able to locate a symbol, no

matter where it happens to be placed, and to discriminate between it and other symbols.

TEACHING A LEARNER TO APPROPRIATELY REQUEST THE ATTENTION OF OTHERS

Not all learners will spontaneously approach potential listeners and initiate communication interchanges. Many learners will need to be taught to gain the attention of others. One aspect of requesting attention involves seeking out a listener to make a communicative overture.

This is especially important for graphic mode users, for unlike speech or sign modes which can be effective from a distance, in order to communicate with a graphic the speaker and listener must be in fairly close proximity to one another.

Part of the communicative episode may, therefore, require the speaker to seek out a listener.

One way to teach this skill is to establish some reliable communicative exchange (e.g., generalized requesting) when the listener is close by and attentive.

Once established the listener can gradually "fade" her presence by moving further and further from the speaker.

At first, it may be necessary for the listener to prompt the learner to walk over to the listener using a "come here" gesture perhaps. Over successive opportunities this prompt can be faded using a time-delay. Then, a second interventionist could be recruited to prompt the learner to seek out

6. To summarize, have participants describe how response prompting and stimulus control procedures can be used to teach a learner to make explicit requests.

a more distant listener. To use this strategy, an interventionist could set up a situation in which the learner could gain access to a desired item only by gaining the attention of a listener who was not attending to him or her. for example, a preferred reinforcer could be stored in a closed cabinet. The only person with the key is busy reading. A second interventionist could prompt the learner to approach the other person and request help in opening the cabinet. Eventually it may be possible to establish a chain where the learner first seeks out an audience and then engages in communicative behavior (Doss, 1988; Eynon & Reichle, 1987).

7. To summarize, have participants describe the procedures for teaching a learner to appropriately request the attention of others.

Seeking out an audience is one important aspect of communication intervention. It represents a skill which has been taught successfully using fading of listener presence and time-delay tactics.

TEACHING RESPONDING IN THE ABSENCE OF INSTRUCTIONAL CUES

Responding in the absence of instructional cues is often referred to as "spontaneity".

One way to think of spontaneity is in terms of the prompts or cues which are required to recruit the communicative behavior. These prompts or cues can be ordered along a continuum of intrusiveness.

For example, verbally prompting a learner to "Tell me what you want" is more intrusive than simply saying "I have an extra Snickers® bar" in the presence of a learner known to enjoy candy bars. An even more spontaneous opportunity would involve the presence of a Snickers® bar with the interventionist saying nothing.

How does one teach more spontaneous forms of communicative behavior? First, it is necessary to determine what is the current level of prompting needed to reliably produce the desired response. Let's assume it requires physical guidance.

Next, one attempts to fade the physical guidance and shift to a different level of prompt, such as a model or verbal cue.

Time delay and magnitude fading procedures can be used. For example, the interventionist presents a cue (e.g., "What do you want?") and then waits for 15 seconds before delivering a physical prompt (Halle, 1987).

On each successive opportunity less and less physical assistance is provided after the delay. Eventually the learner may respond before the physical prompt is provided. Maintaining correct responses in the presence of the question, "What do you want?" is then continued and one can work on fading out this cue, bringing the response under the control of the availability of objects or contextual and interoceptive stimuli.

An example of contextual cues for communicative behavior may be teaching a learner to request assistance when needed or requesting utensils necessary for accessing reinforcers (e.g., requesting a spoon to eat pudding), as opposed to only when prompted with instructional cues (Hall & Sundberg, 1987; Reichle, Anderson, & Schermer, 1988; Sigafoos, Doss, & Reichle, 1989).

ESTABLISHING VALID AND GENERALIZED USE OF ESTABLISHED COMMUNICATIVE SKILLS (REQUESTING VALIDITY)

Very often when learners make requests, they are given the objects requested.

If a learner has only been taught to request, or if all of his/her symbols represent preferred items, problems may arise since touching any symbol will result in a "payoff."

Many times the learner may not even have to attend to the symbols being selected, because any symbol touched resulted in the learner being given a reinforcer by the interventionist.

When given a chance to select the requested item from an array containing other items as well, it often become apparent that learners do not select the item requested. For example, the learner may have communicated that s/he wanted a cookie but took a cracker instead.

Because of this potential lack of correspondence it may be necessary to ensure valid use of communicative repertoires.

One method would be to initially provide the learner with an easy choice. For example, after requesting a cookie the learner is required to select it from an array containing a nonpreferred item (e.g., an empty cup) and the cookie. Similar choices are offered initially between other requested items (cracker) and other neutral items (clipboard). Once the learner performs well on these types of choices, the more difficult selections are introduced. Here the learner makes a request (either "cookie" or "cracker") and then is

given the opportunity to select the matching object from an array containing both a cookie and a cracker.

During these more difficult selection requirements, it may be necessary to make sure the learner selects the object actually requested rather than being allowed to make a mistake.

If the learner does attempt to select the nonmatching item, then it is safe to assume that the learner really "wanted" that item and at this point, the incorrect selection should be interrupted and a new opportunity should be provided for the learner to request.

By continuing to reinforce a request only when it corresponds to a subsequent selection, valid requests should be established (Reichle, Sigafoos, & Piche-Cragoe, 1989).

The logic for initially giving the learner a relatively easy choice between a preferred and nonpreferred or neutral item, such as between a cookie and an eraser, is that it ensures a high probability of success on the selection component of a requesting opportunity.

However, when learners are later required to make selections among two preferred items (e.g., cookie and cracker) there may not be any carry-over from the previous easier selections.

Because of this potential for a lack of generalization from easy to more difficult selections, it may be important to incorporate the more difficult selections into intervention opportunities from the

8. To summarize, have participants describe methods for ensuring that learners are making valid requests.

beginning rather than waiting until after the learner has mastered the easier selections.

One solution is to include both the easy and difficult selections from the beginning. Ensuring correct selections on both types of arrangements can then be concurrently taught.

CONDITIONAL USE OF REQUESTING BEHAVIOR

Not only may it be necessary to teach a correspondence between requests and selections, but also steps may need to be taken to promote conditional use of requesting. Being able to conditionally use a request is defined as the ability to differentiate between those situations when a request is required and when it is not necessary. There are two options available for teaching learners to make and refrain from making requests. In the first option, the behavior of requesting is established. After its frequency of use has been increased, conditions are placed on the behavior to teach the learner to discriminate between situations when a request is and is not necessary or appropriate. Using the first option would mean initially teaching the learner to request, and reinforcing the use of the request in all situations. Later, the interventionist would set up instructional opportunities to teach the learner to discriminate between situations when a request is required and when it is not. For example, when objects are within reach a request is typically not required. When an item is placed nearby, the item can be accessed without a request. When items are out of reach or not visible, a learner needs to make a request.

Depending on a learner's history of access, conditional use may or may not be a problem. If a learner has a history of never being allowed to

independently access items, requesting may overgeneralize to situations where it is not needed. If this occurs, then intervention to teach a request for items out of reach and independent access without requesting for items within reach should be taught.

The second option involves teaching a discrimination between the conditions when requesting is and is not required from the beginning of instruction. This would involve setting up intervention opportunities in which requests are and are not necessary or are not appropriate. These opportunities would be randomly offered. For example, an interventionist teaching a learner to request "help" during domestic activities might arrange to position an item out of reach on some opportunities and within easy reach on other opportunities. If the learner began to emit a request when the item was within his or her reach and a request was unnecessary, the interventionist would interrupt the learner, and use a response prompt to occasion reaching for the needed item. Similar strategies could be used to teach a discrimination between items one may request appropriately and items that one should not request. For instance, requesting a sip of a friend's coffee or a bit of his or her spaghetti, is not, under most circumstances, an appropriate request for one adult to make of another. However, asking for a few tortilla chips from a snack size bag, or one of the several cookies someone is having with lunch may be acceptable. Instruction in the conditional use of requesting should also include some situations in which the learner's requests are acted on favorably, and other situations in which requests are denied, to teach the learner that "you don't always get what you ask for."

9. To summarize, have participants describe why teaching the conditional use of a request may be important.

TEACHING GENERALIZED REJECTING AND LEAVE-TAKING

Format

Lecture

Time

60 minutes

Materials

Overhead 22

Objectives

Upon completing this section, students should be able to:

6.0 Demonstrate procedures for teaching rejecting and leave-taking.

6.1 Describe the purpose of teaching a rejecting response.

6.2 Describe the purpose of teaching a learner to use a leave-take symbol.

6.3 Describe safety signal intervention.

Section C: Content

TEACHING REJECTING

People without disabilities use a variety of behaviors to indicate rejection of items or activities. A common means of indicating that you don't want something that you are offered is to simply say "No thanks." Many people without disabilities also use gestures for indicating rejection of items. For example, a person might cover her coffee cup with her hand or raise it to her lips and simultaneously shake her head "no" to inform the approaching waiter that she does not want her coffee cup refilled. Many people with severe disabilities lack the skills to reject items in an appropriate manner. For instance, a person with severe disabilities might reject a nonpreferred food item by shoving his plate off the table especially if he lacked the verbal ability to reject the item, and had not learned a more appropriate rejecting response. Many people with severe disabilities need to be taught to use a rejecting response to avoid or escape nonpreferred objects, activities or events in an appropriate manner.

The initial step in teaching a learner to reject involves identifying items or events the learner does not particularly like. The interventionist begins each rejecting opportunity by offering the undesirable object or activity.

Next, the interventionist delivers the least intrusive prompt required for demonstration of the response and then removes the undesired item.

Over successive opportunities, prompts are faded until the learner independently emits the rejecting response when the undesirable object is displayed.

Notes

In order to avoid having the learner begin to associate an interventionist with the delivery of an undesired item or activity and thus begin avoiding the interventionist, it would be advisable to intersperse rejecting opportunities with other types of skill instruction. For example, an opportunity to reject a walk outside could be followed by an opportunity to request a choice between watching television or looking at a book, or by instruction in preparing a snack. The goal is to ensure that the experience of learning to reject is a positive experience overall.

TEACHING LEAVE-TAKING

Similar to rejecting offered items or events, leave-taking involves making some indication that one would like to get out of, exit, or stop participating in an ongoing activity. Some learners do not know how to leave an activity in a socially appropriate manner. They may suddenly run away from the activity, throw the materials on the floor, or hit someone nearby, for example.

1. To summarize, have participants describe the purpose of teaching a rejecting response.

The purpose of a generalized leave-taking intervention is to teach a learner a socially acceptable method of indicating a desire to leave an activity. In teaching leave-taking initially, the interventionist engages the learner in a fairly easy task for a short period of time. Then, a signal of some sort is used to alert the learner that she is almost done. After a few more moments of participation, the learner is prompted to use the leave-take symbol, and then is allowed to leave the task.

2. To summarize, have participants describe the purpose of teaching a learner to use a leave-take symbol.

STEP 1: IDENTIFY AN ACTIVITY

The first step in teaching leave-taking is to identify an activity in which the learner will participate for at least a short period of time without engaging in excess. The activity should be one that is fairly easy for the learner to engage in. The task should also be one that the learner eventually seems to tire of and, if pressed, will engage in excess to escape from the task. Data should be collected over a period of several sessions to determine how long the learner will participate in the activity before engaging in an excess behavior.

STEP 2: DETERMINE PARTICIPATION DURATION

Next, the amount of time the learner participates appropriately is determined by analyzing the data. Once these preliminary steps have been accomplished, the interventionist may move on to the next step in teaching generalized leave-taking, which is safety signal conditioning.

STEP 3: SAFETY SIGNAL CONDITIONING

A safety signal is a behavior emitted by the interventionist in order to communicate to the learner that in a short period of time, he or she will be able to leave an activity contingent on continuing to engage in the task in the absence of socially unacceptable behavior. A safety signal is analogous to the lights which flash off and on toward the end of a theatre intermission which serve to warn theatre goers that the second act is about to start and that they should return to their seats. The difference is that the flashing lights serve to warn an individual that it is time to leave one activity and return to another, while a safety signal

alerts an individual that required participation is almost at an end.

Initially, the safety signal will be delivered after the learner has participated for a short period of time.

3. Show Overhead #22 (Timelines for Introducing a Safety Signal).

Delivery of the safety signal is determined through an examination of the data collected on how long the learner will participate in an activity before engaging in inappropriate behavior. For instance, suppose that, typically a learner engages in an activity for as long as 10 minutes before emitting excess behavior. However, on several occasions, excess occurred approximately 3 minutes into the activity. Using this data as a guide, initially, the interventionist will give the safety signal after two and a half minutes. (The safety signal itself can be a clear discrete event that can be constantly delivered.) For example, the interventionist might say, "Almost done" as the safety signal. Immediately after the safety signal is given, the learner is allowed to leave the activity for a few minutes to access desired items during a "break." Over consecutive opportunities, the amount of time the learner is required to work at the task after being presented with the safety signal is increased. That is, the safety signal is delivered at the same time but the learner is not allowed to leave the activity right away. The interval between the safety signal and task intervention is increased gradually. It is important to reinforce the learner for displaying appropriate behavior prior to and after delivery of the safety signal.

STEP 4: INTRODUCING A LEAVE-TAKE SYMBOL

The next step is to introduce a graphic symbol that the learner will use to request a leave-take. This can be any graphic symbol or gesture that will be easily

understood by the learner and those who come into contact with her. The interventionist will place the graphic symbol in front of the learner, deliver the safety signal and wait a brief interval of time as in the previous condition. The interventionist will ask "Do you want to leave now?" and immediately prompt the learner (using the least intrusive prompt) to touch the generalized leave-taking symbol. After touching the symbol, the learner will be allowed to leave the activity for a few minutes.

Over consecutive opportunities the amount of time the learner is required to work before the safety signal is given is increased. The amount of assistance should also be faded systematically until the learner responds to the cue "Do you want to leave now?" by touching the leave-take symbol or by electing to continue working at the task. The amount of time he or she must continue to work after using the leave-take symbol, should also be increased gradually. This will require that the interventionist use a "stalling" tactic to increase the learner's on task performance. For example, if the learner requests a leave-take early on in the task, the interventionist could say "In a minute" to delay the learner's leaving for just a moment. The stall techniques could be used to gradually extend the time between the safety signal and the learner's request for a leave-take.

If the learner elects to continue working the interventionist should provide a highly preferred reinforcer at the end of the task (in order to encourage extended participation in the task). If the reinforcement for continuing to work is more salient than the reinforcement for requesting a leave-take (i.e., being able to take a break), the learner may choose to participate in the task for longer and longer periods of time.

4. To summarize, have participants describe the safety signal intervention.

USING GRAPHIC MODE SYMBOLS TO TEACH LEARNERS TO FOLLOW INSTRUCTIONS OR EVENTS OF HOME OR COMMUNITY

Format

Lecture

Time

30 minutes

Materials

None

Objectives

Upon completing this section, students should be able to:

7.0 Describe how graphic mode symbols can be used to teach learners to follow instructions or events of a daily routine, or to shop more independently.

7.1 Describe a message board program.

7.2 List the steps involved in teaching learners to use a message board.

7.3 Describe procedures for teaching learners to use graphic symbols as an aid to more independent shopping.

Section D: Content

TEACHING THE USE OF A MESSAGE BOARD

In addition to using graphic symbols to request, reject, or comment, symbols can also serve as memoranda for learners.

Just as people often write notes to themselves as reminders to purchase certain groceries or complete certain tasks, a graphic symbol displayed on a bulletin board may effectively relay similar messages to a learner who uses a communication wallet.

The line drawing of a broom adhered to a message board may remind the learner to sweep the floor, for example. Display of other symbols (e.g., trash, laundry, bath) may remind the learner to perform other necessary actions.

A message board, therefore, is nothing more than a convenient location for the display of symbol memoranda. To be useful, of course, learners will have to be taught to periodically check the board for "messages" and then complete the activity represented by the displayed symbol.

TEACHING INDIVIDUALS TO TRAVEL FROM SYMBOL TO EVENT

The first step in establishing a message board is to teach learners to travel from symbol to the event that symbol represents.

Notes

1. To summarize, have participants describe a message board program.

For example, if the learner needs to wash the dishes, a program to teach the learner to go to the sink and begin washing dishes when the "wash dishes" symbol is displayed on the message board must be instituted. After finding the "wash dishes" symbol on the message board, the learner is prompted to place the symbol in his/her wallet using whatever level of assistance (e.g., verbal cue, gesture, physical guidance) is necessary to ensure correct performance.

Next the learner is prompted to go to and begin the activity represented by the symbol, again using a level of prompt which produces the necessary behaviors.

Over time the prompts are faded using both time delay (i.e., waiting up to 30 seconds before delivering a prompt) and/or magnitude fading procedures (i.e., gradually giving less and less physical assistance) until the learner travels to and begins to perform the appropriate activity when given a graphic symbol depicting that task.

TEACHING SPONTANEOUS MONITORING OF A MESSAGE BOARD

Spontaneous monitoring of the message board should be encouraged from the start of an intervention program for message board use.

The first step in teaching independent monitoring of a message board is to identify an environmental cue that will serve as a reminder to the learner. An inexpensive digital alarm watch is ideal for this purpose, since it can be set to go off at the same time each day. For example, a learner's alarm watch might be set for 4:30 p.m. every day. The sound of the alarm can be paired initially with a response

prompt, such as a verbal direction or physical guidance, to direct the learner to check the message board. These more intrusive prompts can be faded as the learner begins to move through the sequence independently, until he or she responds to the sound of the alarm alone by checking the message board.

Establishing a message board is an efficient method for developing independent task initiation skills and represents a normalized memo relying technique for learners using a graphic communication system.

2. Have participants list the the steps involved in teaching learners to use a message board.

TEACHING A LEARNER TO USE GRAPHIC AIDS FOR COMMUNITY PURCHASING

Many people have in their homes an erasable board on which they record items which need to be purchased at the grocery store. This strategy can be modified to teach learners with severe disabilities to shop at grocery stores, convenience stores, or discount department stores more independently. For instance, Velcro® strips could be added to the erasable board. Instead of writing on the board, the learner could place Velcro®-backed graphic symbols representing needed items on the board. To use this strategy, the interventionist would begin by identifying a convenient location to display the shopping list, for instance, the refrigerator. Then, items that need to be purchased regularly would be identified and symbols would be selected to represent them. A storage location, such as a 3 inch by 5 inch file box could be designated to store the graphic symbols. Prior to the shopping trip, the learner would construct a list of items that needed to be purchased by placing their corresponding symbols on the board. Initially, it may be important to include a number

preferred items to motivate the learner to participate in the task. The learner could be reinforced with the preferred items purchased after he or she leaves the store. Just before leaving, the interventionist could approach the learner, say, "Time to go shopping," and point to the shopping list. The learner would be prompted (using the least intrusive prompt necessary to remove the symbols from the list and affix them to Velcro® strips inside a wallet or to another portable display surface such as a pocket sized photo album or a small clipboard with Velcro® strips.

When teaching a learner to shop using a graphic aid, it is important to vary the items purchased across shopping trips. Otherwise, the learner may simply learn to engage in a chain of behaviors which do not require her to discriminate between items on the list. Rather, she just learns the location of a particular item or items and the steps involved in shopping. It is also important to intersperse the list with items that are not preferred, and may even be disliked, to teach the learner that shopping is not always associated with obtaining preferred reinforcers. Just as with other types of graphic communication intervention, the interventionist should randomize the position of items on the list to ensure that the learner will discriminate between symbols.

3. To summarize, have participants describe procedures for teaching learners to use graphic symbols as an aid to more independent shopping.

DESIGNING GRAPHIC MODE COMMUNICATION SYSTEMS

Format

Lecture

Time

30 minutes

Materials

Overheads 23 through 27
Sample communication books, boards, wallets, laminated symbols, and key ring or chain for fastening wallet to pocket or belt loop.

Objectives

Upon completing this section, students should be able to:

8.0 Describe possible ways graphic symbols can be displayed and list materials needed for constructing various display surfaces for graphic mode communication systems.

8.1 Describe several options for displaying symbols on a graphic system.

8.2 List the materials sometimes used in constructing graphic symbol display surfaces.

8.3 Describe procedures for selecting the type of graphic symbol to use on a display surface.

8.4 Describe procedures for deciding on size and spacing of symbols.

8.5 Describe procedures for teaching a learner to locate symbols in a multipage symbol display.

Section E: Content

Durability and portability are two desired features of any augmentative communication system. Unlike gestural systems that do not require any special equipment and are by nature durable and portable, systems employing graphic symbols must be constructed. The choice of materials and the construction of a graphics-based system is thus important in determining the durability and portability of the resulting system.

DISPLAY SURFACES

1. FABRIC WALLETS

One relatively low-cost method of housing graphics that is both durable and portable is to place individual pictures, line drawings, or symbols inside the plastic picture sleeves of cloth wallets. These wallets can either be the trifold or bifold variety.

2. COMMUNICATION BOARDS

Symbols can also be displayed on communication boards. Communication boards can be constructed by placing individual symbols on a background material, such heavy posterboard, and covering the display with clear contact paper or laminating it for added durability and protection against moisture. Boards can be constructed so that they fold in half, or in thirds. They can also be mounted on the laptrays.

3. SYMBOL BOOK

Another possible method for displaying symbols is within a "book." Large or small photo albums with

Notes

1. Show Overhead #23 (Examples of Bifold and Trifold Communication Wallets).

2. Display a communication wallet.

3. Display a communication board.

4. Display example of a communication book constructed from a three ring notebook.

magnetic pages work well for book displays. Albums with picture pocket pages are also very useful. Three ring note books are sometimes used for constructing multi-page communication books.

4. FAN ARRAYS

5. Show Overhead #24 (Fan Array).

A fan array consists of communication cards bound together by a ring or a chain. Each card has a hole punched in its top left corner. A larger metal ring or flexible chain holds the cards together. This type of display surface may be useful for learners who have difficulty turning pages, as it allows a learner to display a symbol by sliding his or her palm across the array in order to separate the cards from one another, exposing the desired symbol.

6. To summarize, have participants describe several options for displaying symbols on a graphic system.

MATERIALS USED IN CONSTRUCTING DISPLAYS

1. VELCRO®

Velcro® is useful when a learner has a communication wallet, as it allows symbols to be added or removed easily. For example, one could place a couple of Velcro® strips on one page of the wallet. Symbols that will be used in the community are then backed with Velcro® and can be adhered to these strips. This makes it easy to formulate messages prior to a communicative episode.

For example, if the learner is going to Burger King®, the Whopper®, french fries, and chocolate shake symbols which constitute the learner's favorite Burger King® meal can be arranged on the two strips. Different symbols would have been selected

if the learner was going to McDonald's®. Using velcro in this manner to create displays of infrequently used symbols needed for specific environments makes a wallet display more flexible, and saves space for other symbols needed on a regular basis.

7. Display a Velcro® wallet.

2. CLEAR CONTACT PAPER OR ACCESSING LAMINATING EQUIPMENT

Individual symbols can be made more durable by covering them with clear contact paper or by laminating them. Mounting symbols on a thin piece of tagboard before covering with contact paper will result in added durability. Communication boards constructed of tagboard can also be laminated to protect them from moisture and the wear of every day usage. Many photocopying businesses will laminate materials for under a dollar a foot.

8. Show a laminated symbol.

3. KEY RING/CHAIN

Typically communication wallets will be kept in the learner's pocket or purse. Sometimes though, an alternative will be needed. Alternatives may be needed because the learner:

A. has no pockets/purse or other convenient place to hold a wallet;

B. has motoric difficulties which make it problematic and extremely laborious to remove a wallet from pockets or purse;

C. needs a more fail safe attachment system, perhaps because of past difficulties in keeping a wallet in pockets or purse.

9. Display a key ring/ chain.

One alternative is to attach the wallet to a key ring/ chain which clips to the belt loop. Key chains or rings can also be used to attach fan arrays of symbols to a learner's belt loop.

4. MULTIPLE DISPLAYS

During the initial stages of teaching use of a graphic mode communication system, while the learner is still acquiring the use of new symbols, it is important to avoid permanently positioning the symbols on the display surface. If symbols are affixed permanently, there is a risk that the learner will lapse into using familiar locations to locate symbols (i.e. position bias) rather than using visual discrimination skills. For this reason, symbols should be moved around on the board or in the wallet until one is certain the learner is indeed discriminating between symbols based on their visual features. Artist's gum eraser, the kind that is kneaded before use, or the gum-like substance used to mount posters on walls is useful for temporarily placing symbols on display surfaces. A small amount of the gum can be placed on the back of individual symbols. Symbols can then be easily moved from place to place on the display without damage.

10. To summarize, have participants list the materials sometimes used in constructing graphic display surfaces.

Another method of ensuring that the learner does not develop a position bias is to develop several permanent versions of a symbol display which vary the location of the symbols. With this method, the version of the symbol display to present to the learner can be randomized. This method also prevents the loss of many loose symbols.

SELECTING THE TYPE OF GRAPHIC SYMBOL FOR USE ON A DISPLAY SURFACE

Probably one of the more debatable features of graphic communication systems is the selection of the graphics to employ.

There are several alternatives. One could, for example, use photographs, product logos, line drawings, or any one of several commercially available symbol sets (e.g., Bliss®, Mayer-Johnson®, Rebus®).

When selecting the type of symbols to include in a graphic communication system, several features of the symbols need to be considered.

First and foremost should be the learner's ability to discriminate between symbols and/or acquire functional communication skills using a given set.

The only sure-fire way to make a valid comparison of potential symbol sets of these two dimensions of learner performance is to compare the learner's performance on matching, requesting, or labelling tasks using selected symbols from different sets.

Several studies have compared learning rates under different types of symbols. In a group study comparing a symbol recognition in match-to-sample tasks with learners with moderate-to-severe disabilities, real objects, photographs, and line drawing symbols fared better than Bliss® symbols or printed words (Mirenda & Locke, 1989).

In another study which compared acquisition, generalization, and maintenance of labelling responses with iconic line drawings versus Bliss® symbols, the line drawings resulted in faster acquisition, better generalization, and better maintenance (Hurlbut, Iwata, & Green, 1982).

11. Show Overhead #25 (Representations of "COOKIE" in PCS, Picsyms, and Blissymbolics).

12. Display respective symbols.

One reason often cited for the superiority of some symbol sets is that the symbols look more like the object they are supposed to represent. The PCS symbol of a cookie looks more like a real cookie than the comparison Bliss® symbol, for example. In this sense, the Rebus® "cookie" symbol is more iconic than the Bliss® "cookie" symbol.

Iconicity is therefore one factor to consider when selecting symbols. Although more iconic symbols tend to promote faster acquisition and better generalization and maintenance, individual learning histories may interact with the type of symbols used, leading to better performance on less iconic symbols for some people.

13. To summarize, have participants describe procedures for selecting the type of graphic symbol to use on a display surface.

Learners with a history of intervention involving Bliss® symbols, for example, might be expected to perform better than usual on these symbols.

ACCESS TO PHOTOCOPY SERVICES

One easy way to create product logo symbols is to photocopy and reduce the wrappers from such products. The authenticity of the symbols can be further enhanced by the use of color photocopying.

Ideally, symbols should be made as small as possible in order to allow a maximum number of symbols to be displayed on whatever surface has been selected.

When determining the optimal size of symbols, it is best to start with larger symbols and establish reliable performance. The symbols are gradually reduced until the point where they are as small as feasible or are too small to be seen by the learner. At this point, the symbols are made one size larger.

By reducing symbols in discrete steps, visual acuity is also being tested.

Access to photocopy equipment with reduction features is thus another valuable resource for developing graphic communication systems in learners with severe handicaps.

DECIDING ON SIZE OF SYMBOLS

Symbols should be reduced to the smallest feasible size. Small symbols mean more portability and more vocabulary. Even though small symbols are ideal, the learner's ability to point to the symbol as well as the learner's and listener's ability to see the difference or discriminate among symbols, will determine the actual size of symbols.

The best way to determine optimal symbol size is to record performance under different sizes of symbols. One way to assess a person's visual acuity and thus determine optimal symbol size is to administer the Parson's Test of Visual Acuity (Cress, et al., 1981). Another suggestion is to establish a reliable discrimination between, for example, the symbols "WANT" and "WRITE". Later, after discrimination has been established with 4 X 4 inch symbols, gradually reduce these symbols in a series of steps. This provides a systematic method for selecting optimal symbol size and also provides a crude measure of visual acuity.

14. Show Overhead #26 (Size Reductions of a Generalized Request Symbol "Want" and a Distracter Symbol "Write").

CONSIDERATIONS IN THE SPACING OF SYMBOLS

After determining optimal size of symbols, the next consideration is how far apart to space the symbols. In spacing symbols on the individual pages of a communication wallet, one tries to strike a balance between too great a space, which thus restricts the absolute number of symbols that can be fitted, and

15. Show Overhead #27 (Testing Discreteness of Point by Varying Spacing Between Symbols).

too narrow a space which may make it difficult for a learner to point to only one symbol at a time. In addition, when symbols are spaced too closely, listeners may experience difficulty in seeing which symbol was actually pointed to by the learner.

16. Have participants describe procedures for deciding on size and spacing of symbols.

Determination of the optimal spacing of symbols will depend on learner's discreteness of point. Often the ability to point discretely to symbols of various sizes and spaces will need to be investigated directly with individual learners. To do this, one first establishes a reliable pointing response to one or a few symbols and then records performance as the spacing of symbols is manipulated in concrete steps (2" spacing, 1" spacing, 1/2" spacing, 1/4" spacing).

TEACHING THE LEARNER TO LOCATE SYMBOLS IN MULTIPAGE SYMBOL DISPLAYS

Obviously, no matter how small or closely spaced, very few symbols can be accommodated on a single page of a communication wallet or book.

Fortunately, most wallets come equipped or can be modified to accept multiple pages. If communication books are constructed from photo albums, multiple pages are already available. In order for a learner to make full use of a multi-page wallet, it must be ensured that the learner is able to turn pages and locate symbols in a multi-page system

One way to quickly assess whether a learner can turn pages is to observe him/her manipulate a magazine or photo album.

Another way to assess page-turning and ability to locate a symbol is to place a symbol which previously appeared on the top page on a later page and see if the learner is able to locate it when required.

Learning to turn a page can be thought of as similar to playing a game of concentration with cards. Basically, the learner's task is to remember where symbols are to be found. If a needed symbol does not appear on the first page, then the learner is taught to begin scanning subsequent pages until the symbol is found. This is basically a "look" and "search" strategy. Often learners with severe handicaps will need to be taught directly to locate symbols in a multi-page wallet (Reichle & Brown, 1986).

Once symbols have been mastered, for example, locating symbols in a multi-page symbol display can be taught by placing the symbols on various pages.

Items representing the symbols can then be displayed and the learner asked "What is this?" or, alternatively, items can be offered for requesting and the learner asked "What do you want?"

If the learner does not locate and point to the appropriate symbol within some allocated time frame (e.g., 10 seconds), then it is necessary to prompt the learner to open the wallet or book, check the first page, and if the symbol is not there, check the second and third pages and so on.

Over successive opportunities, the magnitude of the prompts are faded until the learner is independently locating symbols in a multi-page display.

Social praise for turning pages may be added initially to establish this behavior.

Symbol size, spacing, and establishing page-turning for multiple paged symbol displays are all ways to construct a more portable and flexible communication system.

MODIFICATIONS TO MULTIPAGE SYSTEMS THAT FACILITATE OR ELIMINATE THE NEED TO TURN PAGES

1. INDEX TABS

Some learners who have a hard time turning pages may benefit from placement of index tabs on the pages of their displays. Tabs should be positioned on the edge of each page in a location easily reached by the learner. The learner can slide a finger or thumb under the tab, raise his or her hand, and flip the the page over with a minimal amount of wrist rotation. Tabs also eliminate the need to be able to pinch the page between thumb and forefinger, the method most people use to turn pages.

Learners who don't have difficulty with page turning may also benefit from the use of index tabs. Tabs can be coded to direct the learner to various sections of a multipage display surface. For example, a learner could be taught that all his or her nouns are located behind the orange tab, while all verbs are located behind the green tab. Symbols may be arranged according to environments where they are used. For example, all school related symbols could be housed in one section of the multi-page book, while symbols used at home could be located in another section. Index tabs could be used to separate the various sections. A learner who needed to locate a school related symbol could immediately turn to that section by locating its identifying tab.

17. To summarize, have participants describe procedures for teaching a learner to locate symbols in a multipage symbol display.

COURSE SUMMARY

Format

Lecture

Time

15 minutes

Materials

None

Notes

1. Review the main points presented in Session 2.

SESSION 1

A. OVERHEAD 1

B. OVERHEADS 2-7

C. OVERHEADS 8-12

D. OVERHEAD 13

E. OVERHEADS 14-17

SESSION 2

B. OVERHEADS 18-21

C. OVERHEAD 22

E. OVERHEADS 23-27

OVERHEADS

Overhead 1:	Course Goals
Overhead 2:	Augmentative Communication
Overhead 3:	Alternative Communication
Overhead 4:	Examples of Symbol Sets
Overhead 5:	Continuum of Iconicity
Overhead 6:	Advantages and Disadvantages of Augmentative Modes
Overhead 7:	Reinforcer Preference Testing
Overhead 8:	Motivation of Excess Behavior
Overhead 9:	Assessing the Function of Excess Behaviors: 1. Staff Interviews
Overhead 10:	Assessing the Function of Excess Behaviors: 2. ABC Analysis
Overhead 11:	Assessing the Function of Excess Behaviors: 3. Structured Observations
Overhead 12:	Timeline for Introducing a Safety Signal
Overhead 13:	Differences Between Generalized and Explicit Requests
Overhead 14:	Enlarged and Enhanced Generalized Requesting Symbol ("WANT")
Overhead 15:	Size Reductions of a Generalized Requesting Symbol ("WANT")
Overhead 16:	Natural Environment Interventions
Overhead 17:	Strategies for Promoting Generalization
Overhead 18:	Requesting Assistance
Overhead 19:	Teaching Discrimination Between a Generalized Requesting Symbol ("WANT") and a Distracter (Phase 1)

Overhead 20:	Introducing Graphic Elements to a Blank Distracter Symbol ("WRITE")
Overhead 21:	Introducing Graphic Elements to a Blank Distracter Symbol ("WRITE") - (continued)
Overhead 22:	Timelines for Introducing a Safety Signal
Overhead 23:	Examples of Bifold and Trifold Communication Wallets
Overhead 24:	Fan Array
Overhead 25:	Representations of "COOKIE" in PCS, Picsyms, and Blissymbolics
Overhead 26:	Size Reductions of a Generalized Request Symbol ("WANT") and a Distracter Symbol ("WRITE")
Overhead 27:	Testing Discreteness of Point by Varying Spacing Between Symbols

COURSE GOALS

1. Define augmentative and alternative communication.

2. Recognize that there is a relationship between unacceptable social behavior and the ability to communicate.

3. List the steps in planning an augmentative communication intervention.

4. Describe instructional techniques used to implement augmentative communication systems.

5. Demonstrate procedures for teaching requesting using a direct select communication system.

6. Demonstrate procedures for teaching rejecting and leave-taking.

7. Describe how graphic mode symbols can be used to teach learners to follow instructions or events of home or community routines.

8. Describe possible ways graphic symbols can be displayed and list materials needed for constructing various display surfaces for graphic mode communication systems.

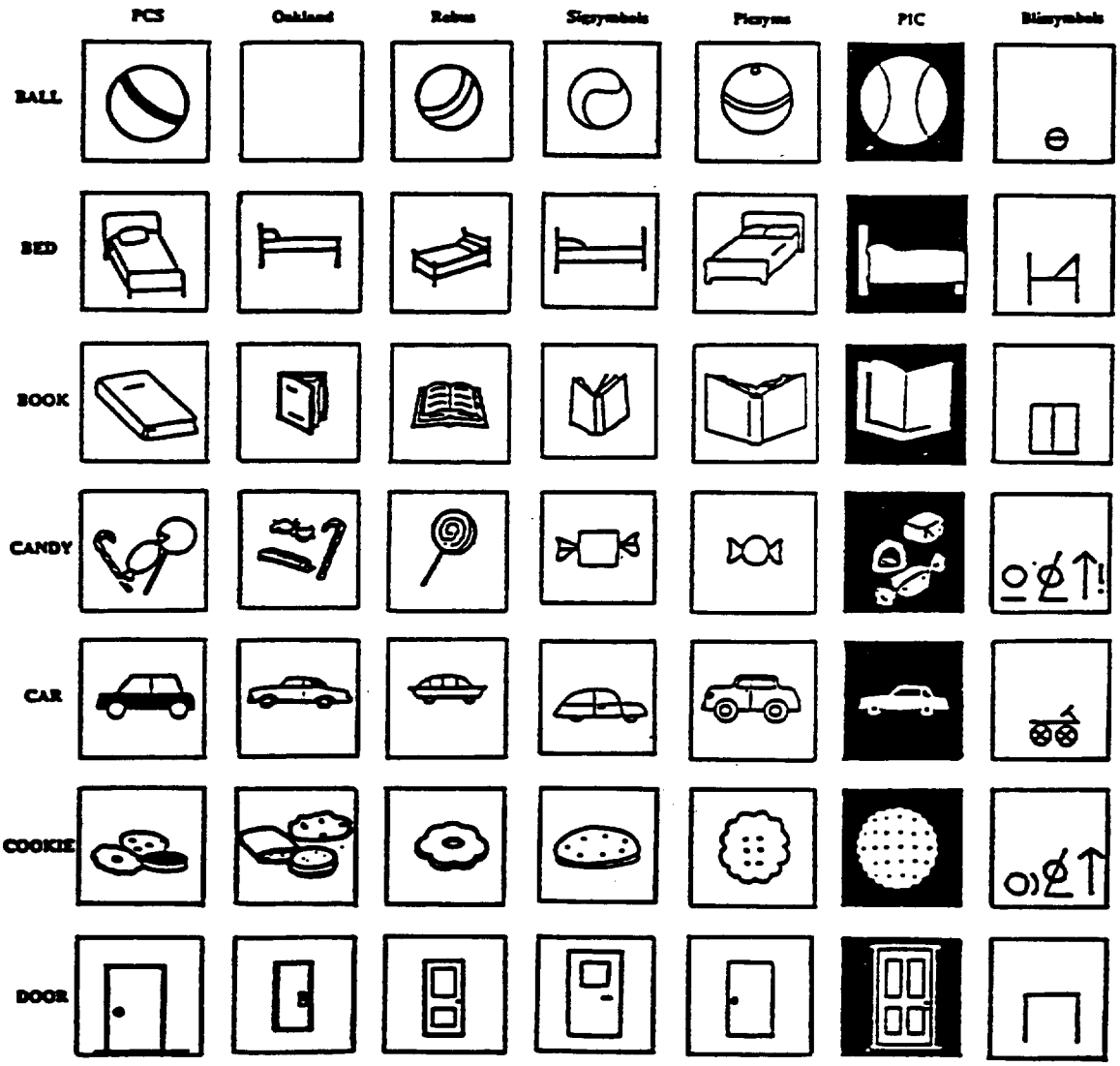
AUGMENTATIVE COMMUNICATION

Augmentative communication supplements a learner's existing vocal or verbal communication skills with graphic symbols or gestures.

ALTERNATIVE COMMUNICATION

A person who has an alternative mode of communication relies exclusively on signs, gestures, or graphic symbols to communicate. Learners who use alternative communication have no existing vocal or verbal ability.

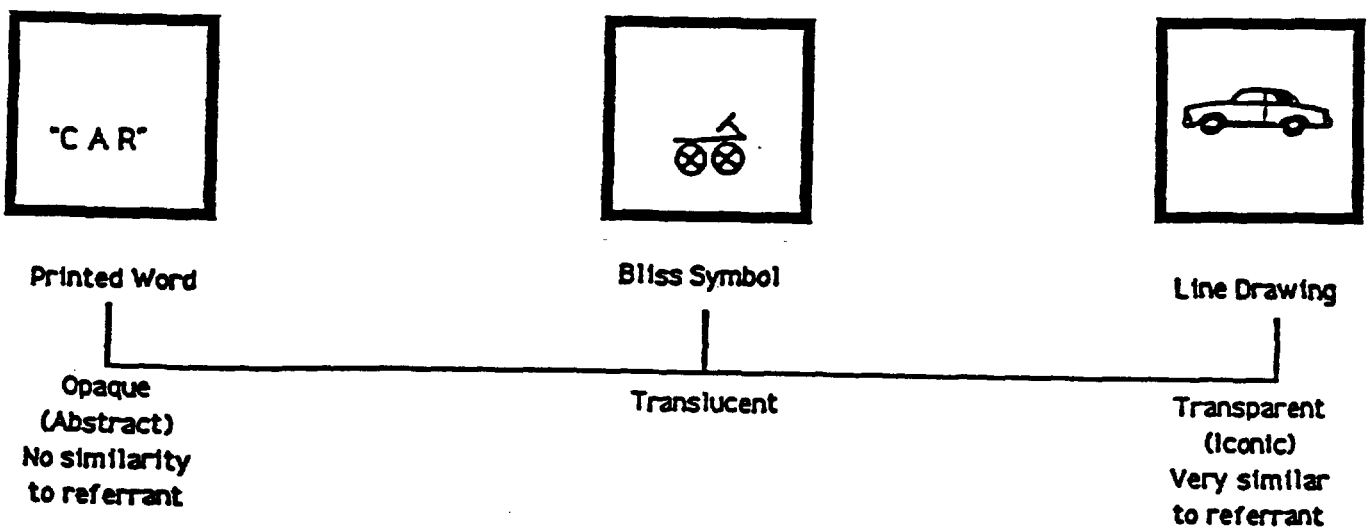
EXAMPLES OF SYMBOL SETS



Note. From Augmented Communication: An Introduction (p. 93) by S. W. Blackstone (Ed.), 2986, Rockville, MD: American Speech-Language-Hearing Association. Copyright 1986 by American Speech-Language-Hearing Association. Reprinted by permission.

Communication Overhead **5**

CONTINUUM OF ICONICITY



ADVANTAGES AND DISADVANTAGES OF AUGMENTATIVE MODES

Mode	Advantages	Disadvantages
•Graphic	•Some symbols are readily identifiable •Symbols can be adapted for visually impaired •Symbols provide a constant visual display	•Large vocabularies may be cumbersome •Transporting symbols may be difficult

Mode	Advantages	Disadvantages
•Gestural	•Portable •The meaning of some gestures can be easily guessed •Does not require external materials •Unique topography for each response	•Few persons understand signs •Requires fluent motor skills •Gestures must be recalled

REINFORCER PREFERENCE TESTING

Name: _____

Date	Items Offered	Item Selected	Position of Items in Relation to Where Person is Seated

Directions: Offer the person a choice between two items (preferably small pieces of items to avoid satiation). Randomize the position of the items across trials (for example, for trials 1 and 2, place banana on the left and apple on the right. On trial 3, reverse the items. On trial 4 go back to banana on the left and apple on the right, then on trial 5 go back to apple on the left and banana on the right. Be careful to not always simply reverse the order of the items, since the person could learn that by always taking the items on the left he or she gets something that tastes good at least most of the time. For example, if the learner picked banana 3 out of 5 trials, we might think he/she liked banana. However, he/she might be picking the one on the left if the order were simply reversed after each trial. He/she might actually prefer apples, but just prefers using the left hand or picking the items on his/her left.)

Draw a double line after each block of trials conducted during a single session. Conduct between 3 and 5 trials per session.

MOTIVATION OF EXCESS BEHAVIOR

Type	Stimulus	Response	Consequences
1. Attention	Low Attention	Excess	Attention
2. Object	Item Present	Excess	Receives Items
3. Escape	Task Demands	Excess	Demands Removed
4. Sensory	Alone	Excess	Sensory Feedback

ASSESSING THE FUNCTION OF EXCESS BEHAVIORS

1. Staff Interviews

Types of Questions

Attention	Escape	Tangible	Sensory
Does excess stop when others attend to it?	Does excess occur when learner is prompted to perform a task?	Does excess occur when access to an item is denied?	Does excess occur when learner is alone?

Answers

Never	Almost Never	Seldom	1/2 time	Usually	Almost Always	Always
0	1	2	3	4	5	6

Note. Sample from "The Motivation Assessment Scale" found in V. M. Durand (1990), Severe behavior problems: A functional communication training approach, New York: Guilford. Adapted by permission.

ASSESSING THE FUNCTION OF EXCESS BEHAVIORS

2. ABC Analysis

A (antecedent)	B (behavior)	C (consequence)
John was asked to return to work.	John screamed, hit his head, and sat on the floor.	Staff left area, returned 5 minutes later and asked again. This time John complied.

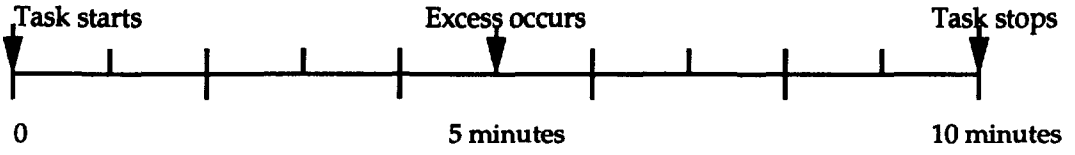
ASSESSING THE FUNCTION OF EXCESS BEHAVIORS

3. Structured Observations

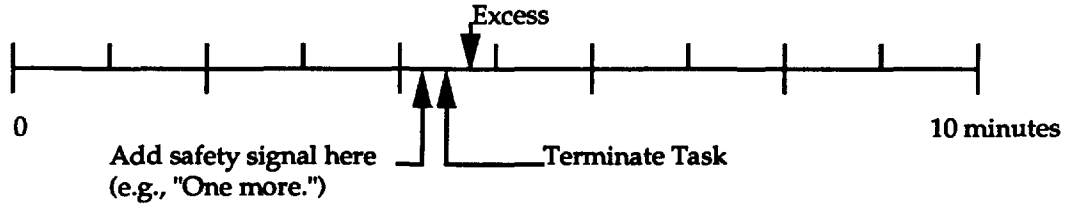
Conditions			
Attention	Escape	Tangible	Sensory
Contingent attention for each excess	Contingent removal of task for each excess	Items visible, learner asked to wait	Learner alone in barren room
Rates/Minute			

TIMELINE FOR INTRODUCING A SAFETY SIGNAL

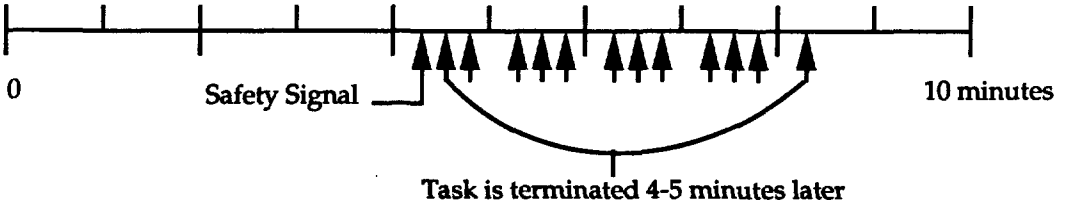
1. Determine when excess occurs.



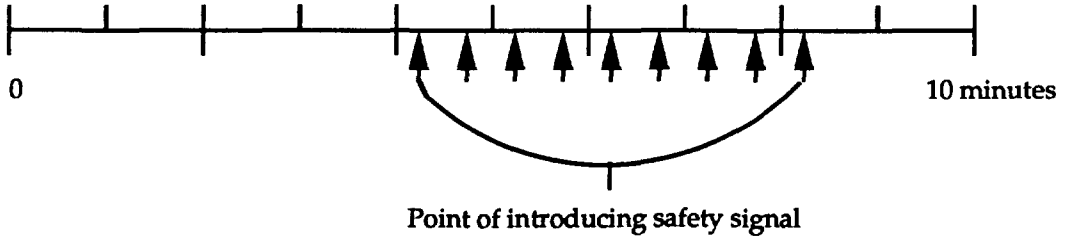
2. Introduce safety signal immediately before excess.



3. Increase time between signal and termination.

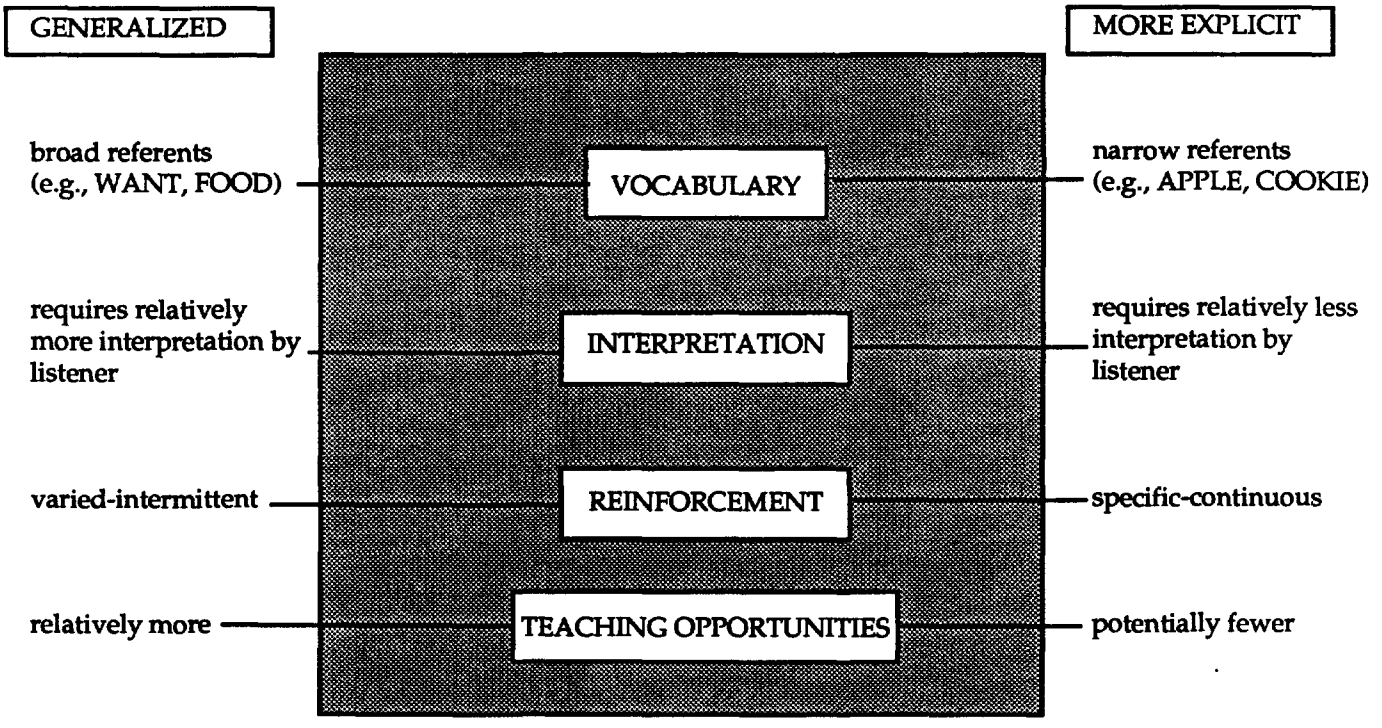


4. Introduce safety signal at later point.

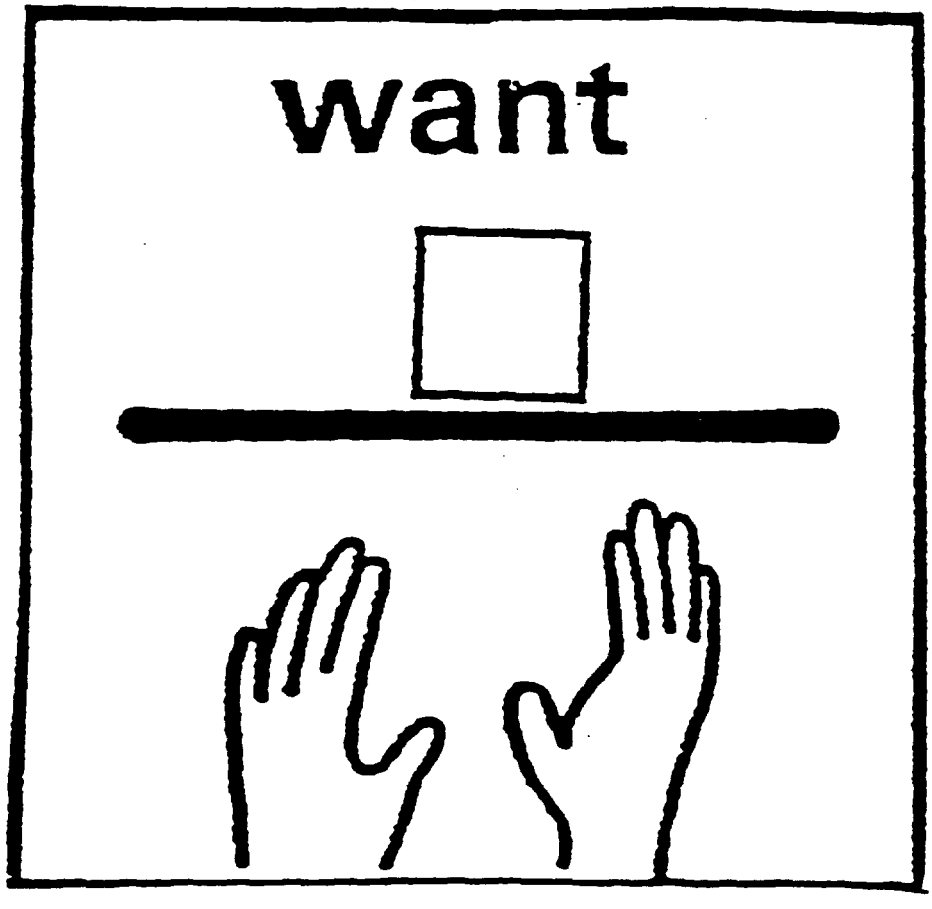


Note. From Implementing Augmentative and Alternative Communication: Strategies for Learners with Severe Disabilities (p. 128) by J. Reichle, J. York, & J. Sigafoos, 1991, Baltimore, MD: Paul H. Brookes Publishing Co. Copyright 1991 by Paul H. Brookes Publishing Co. Reprinted by permission.

DIFFERENCES BETWEEN GENERALIZED AND EXPLICIT REQUESTS



ENLARGED AND ENHANCED GENERALIZED REQUESTING SYMBOL ("WANT")



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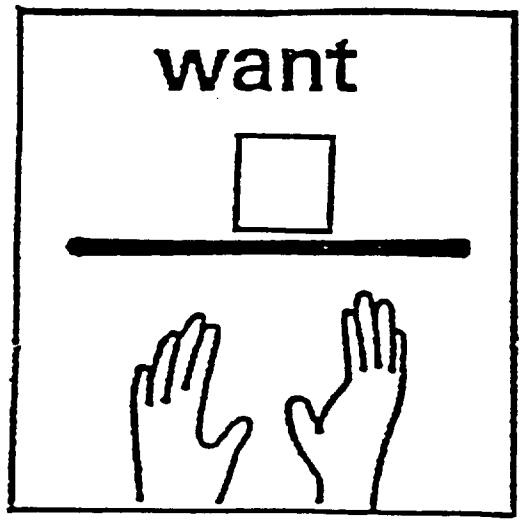
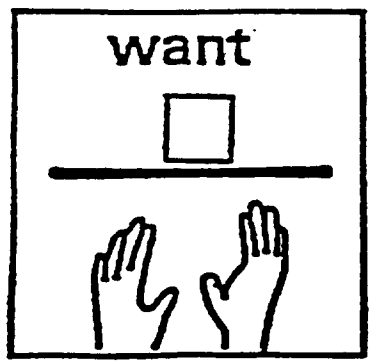
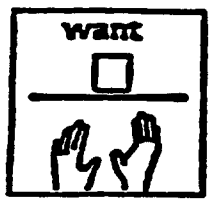
SIZE REDUCTIONS OF A GENERALIZED REQUESTING SYMBOL ("WANT")







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NATURAL ENVIRONMENTS INTERVENTIONS

Option	Characteristics	Considerations for use
Incidental teaching	•Uses learner-initiated teaching opportunities	•Learners must currently initiate approximations of target behavior •Effective reinforcers must be available in the natural environment
Mand-model	•Uses interventionist initiated teaching opportunities	•Learners need not initiate •Most effective when learners have shown propensity to act on verbal prompts •Mands for communicative behavior may reduce spontaneity
Time delay	•Interventionist delays the delivery of the controlling mand/model prompt •Interventionist makes use of naturally arising opportunities	•Learner must be consistently responding to an instructional prompt (e.g., to a mand or model) •Learner has shown little or no propensity to initiate approximations of target behavior

Note. From Implementing Augmentative and Alternative Communication: Strategies for Learners with Severe Disabilities (p. 166) by J. Reichle, J. York, & J. Sigafoos, 1991, Baltimore, MD: Paul H. Brookes Publishing Co. Copyright 1991 by Paul H. Brookes Publishing Co. Reprinted by permission.

STRATEGIES FOR PROMOTING GENERALIZATION

Strategy	Description
Train sufficient exemplars	Teach the same behaviors under a variety of conditions (e.g., vary the materials, settings, people)
Use contingencies that are naturally maintained	Teach in conditions that include naturally available consequences so that the behavior comes under control of natural reinforcers (e.g., teach during naturally occuring daily routines)
Train loosely	Systematically vary the conditions of instruction -- specifically the stimuli (e.g., questions, cues, prompts) to prevent the development of narrow stimulus control
Choose common stimuli	Use stimuli (e.g., materials, people) that are naturally available or present in the array of conditions in which performance is desired so that the behavior is produced under the control of natural cues.

Note. From Implementing Augmentative and Alternative Communication: Strategies for Learners with Severe Disabilities (p. 164) by J. Reichle, J. York, & J. Sigafoos, 1991, Baltimore, MD: Paul H. Brookes Publishing Co.

REQUESTING ASSISTANCE

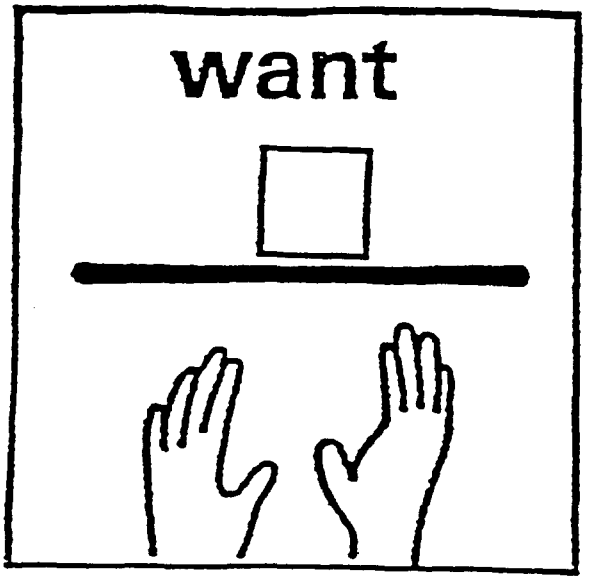
Type 1 - To access Reinforcer

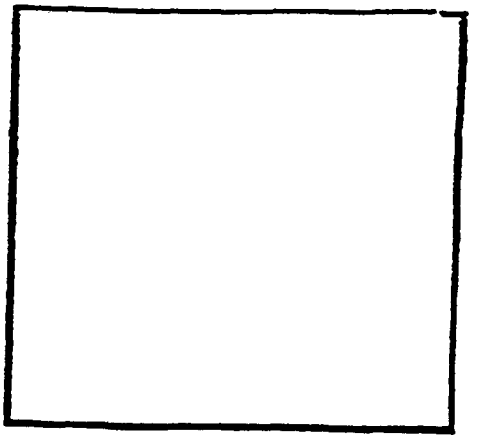
S^D	Response	Consequence
Wrapped gum	"Help"	Gum unwrapped by teacher, learner eats gum

Type 2 - To postpone Task

S^D	Response	Consequence
Learner asked to make bed	"Help"	Staff make bed, learner avoids task
Learner asked to make bed	"Help"	Staff assist learner in task, learner does not avoid task (Does learner have required skill?)

TEACHING DISCRIMINATION BETWEEN A GENERALIZED REQUESTING SYMBOL ("WANT") AND A DISTRACTER (PHASE 1)





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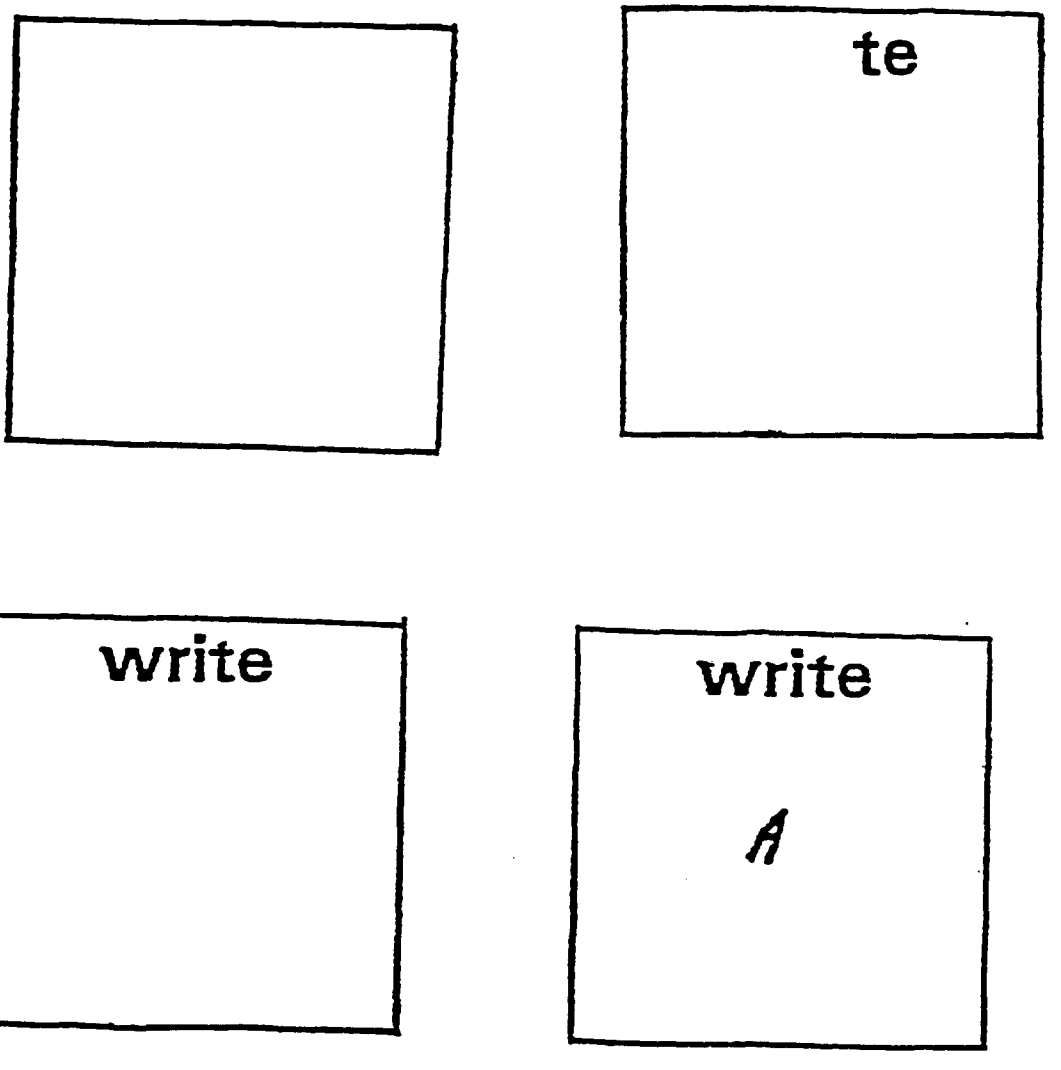
INTRODUCING GRAPHIC ELEMENTS TO A BLANK DISTRACTER SYMBOL ("WRITE")



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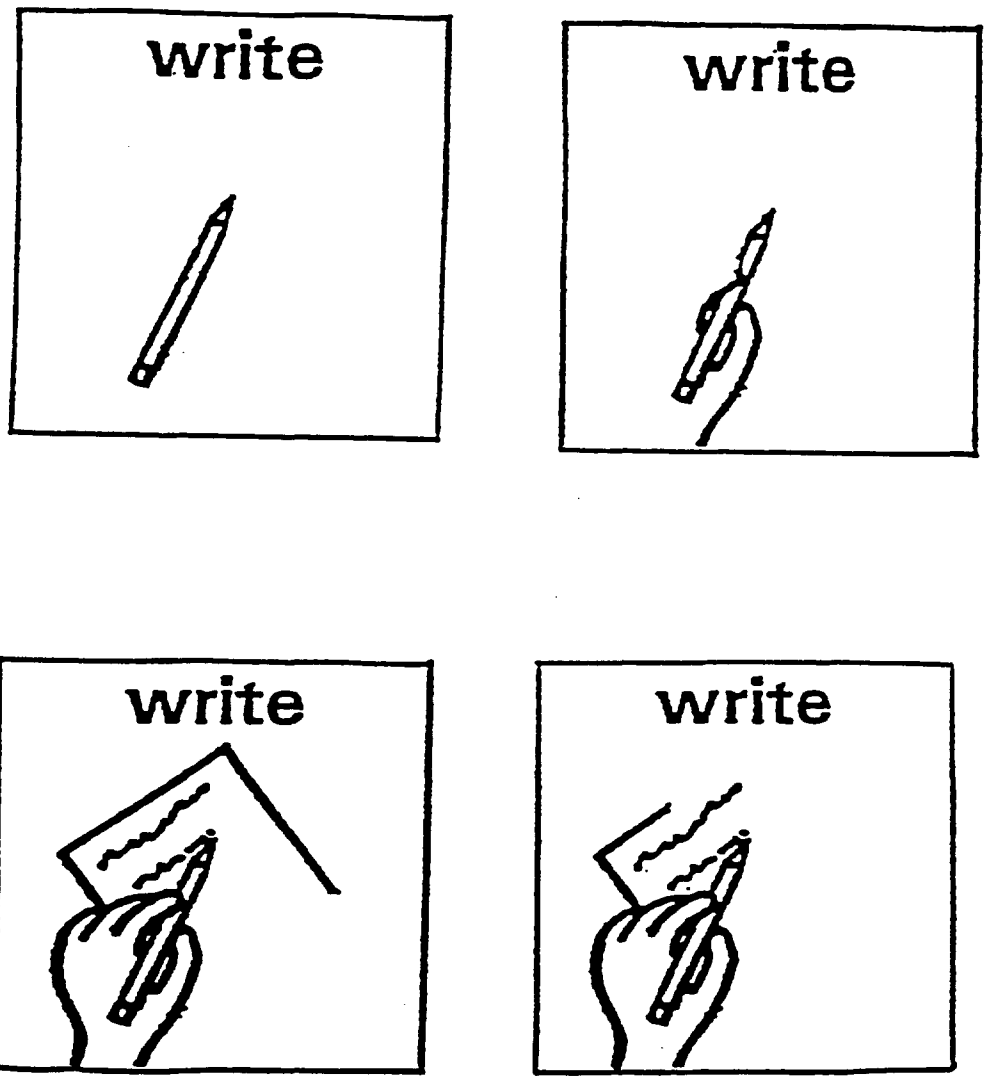
INTRODUCING GRAPHIC ELEMENTS TO A BLANK DISTRACTER SYMBOL ("WRITE") (continued)



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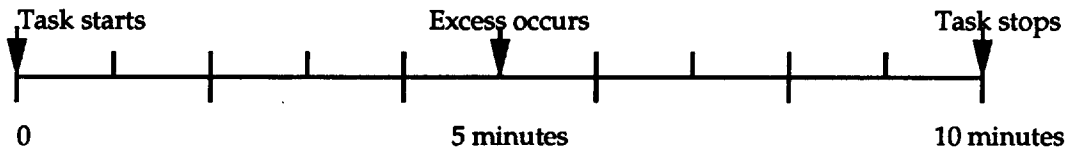
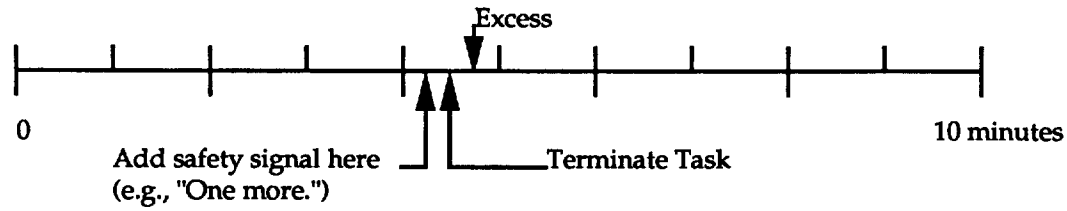
TIMELINE FOR INTRODUCING A SAFETY SIGNAL

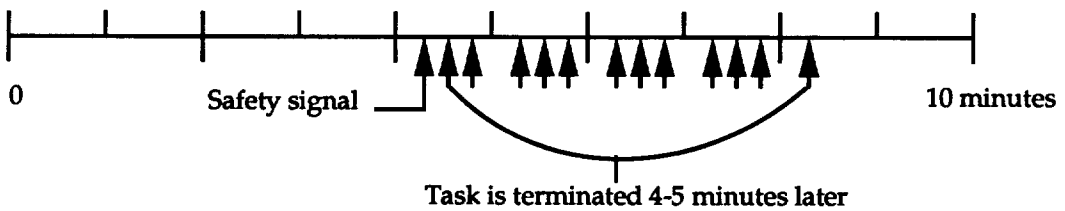
1. Determine when excess occurs.



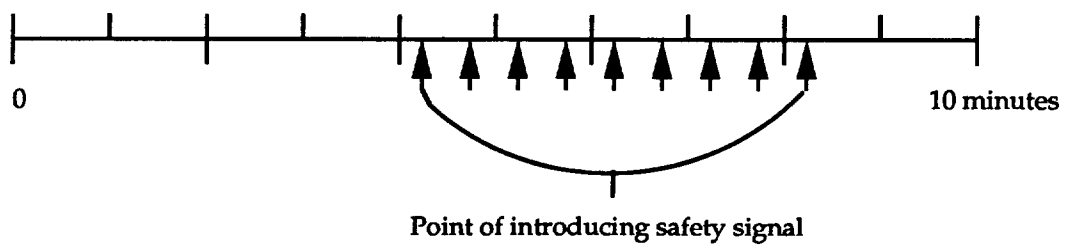
2. Introduce safety signal immediately before excess.



3. Increase time between signal and termination.



4. Introduce safety signal at later point.



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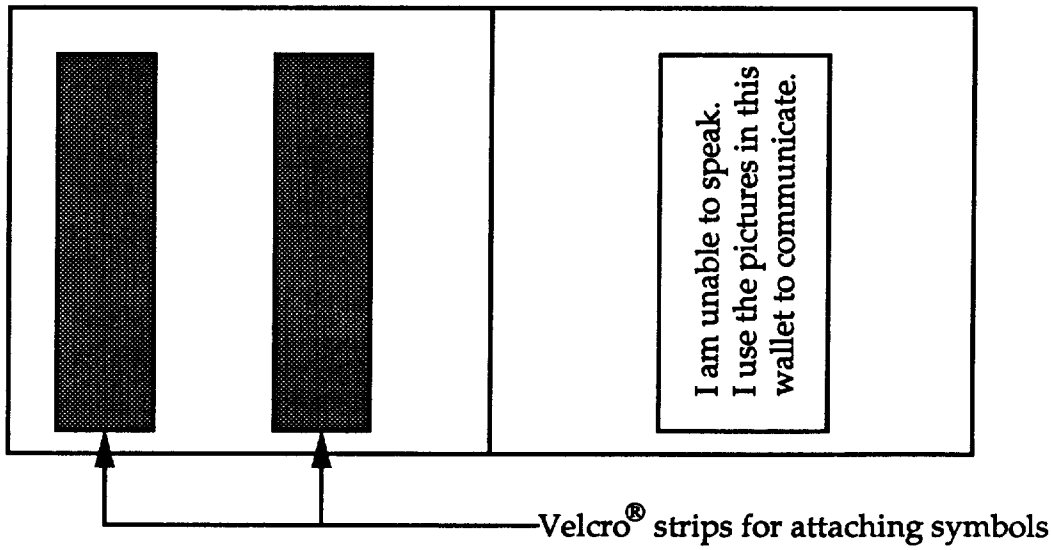
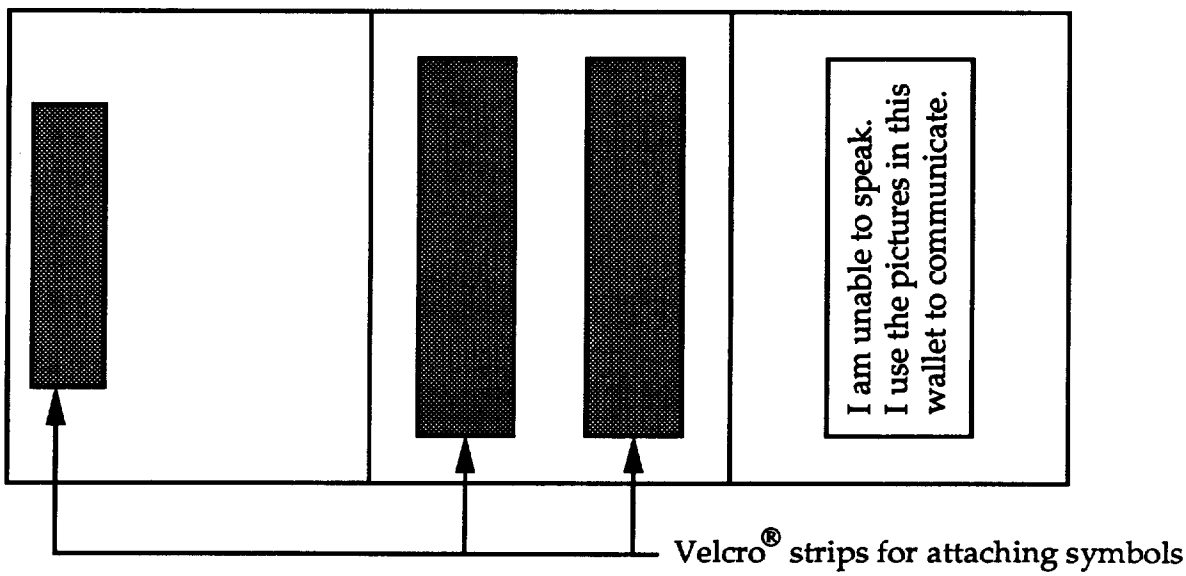
EXAMPLES OF BIFOLD AND TRIFOLD COMMUNICATION WALLETS

Bifold Communication Wallet



Trifold Communication Wallet



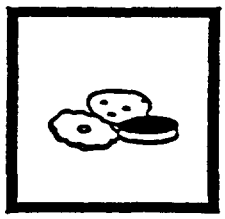
FAN ARRAY

Note. From Implementing Augmentative and Alternative Communication: Strategies for Learners with Severe Disabilities (p. 52) by J. Reichle, J. York, & J. Sigafoos, 1991, Baltimore, MD: Paul H. Brookes Publishing Co. Copyright 1991 by Paul H. Brookes Publishing Co. Reprinted by permission.

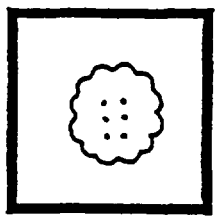
Communication Overhead **25**

REPRESENTATIONS OF "COOKIE" IN PCS, PICSYMS, AND BLISSYMBOLICS

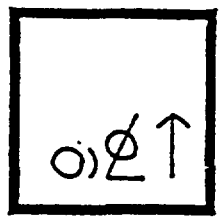
Cookie



Transparent
(PCS)

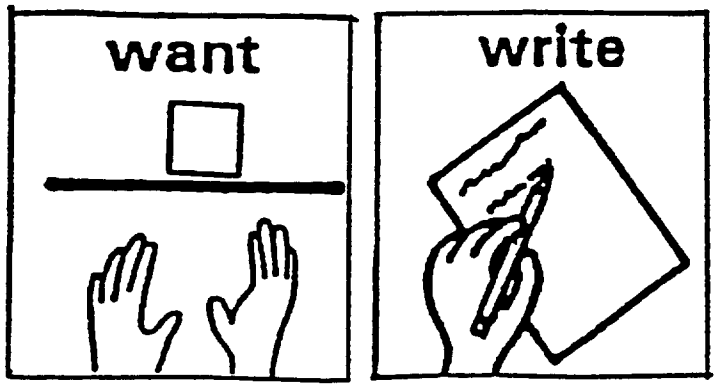


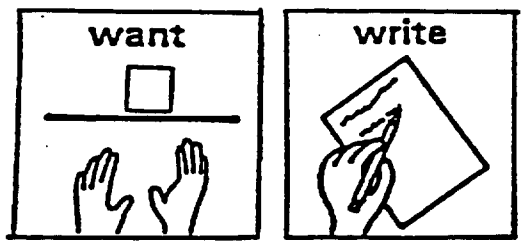
Translucent
(Picsyms)

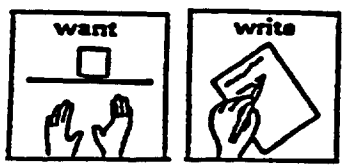


Opaque
(Blissymbolics)

SIZE REDUCTIONS OF A GENERALIZED REQUEST SYMBOL ("WANT") AND A DISTRACTOR SYMBOL ("WRITE")







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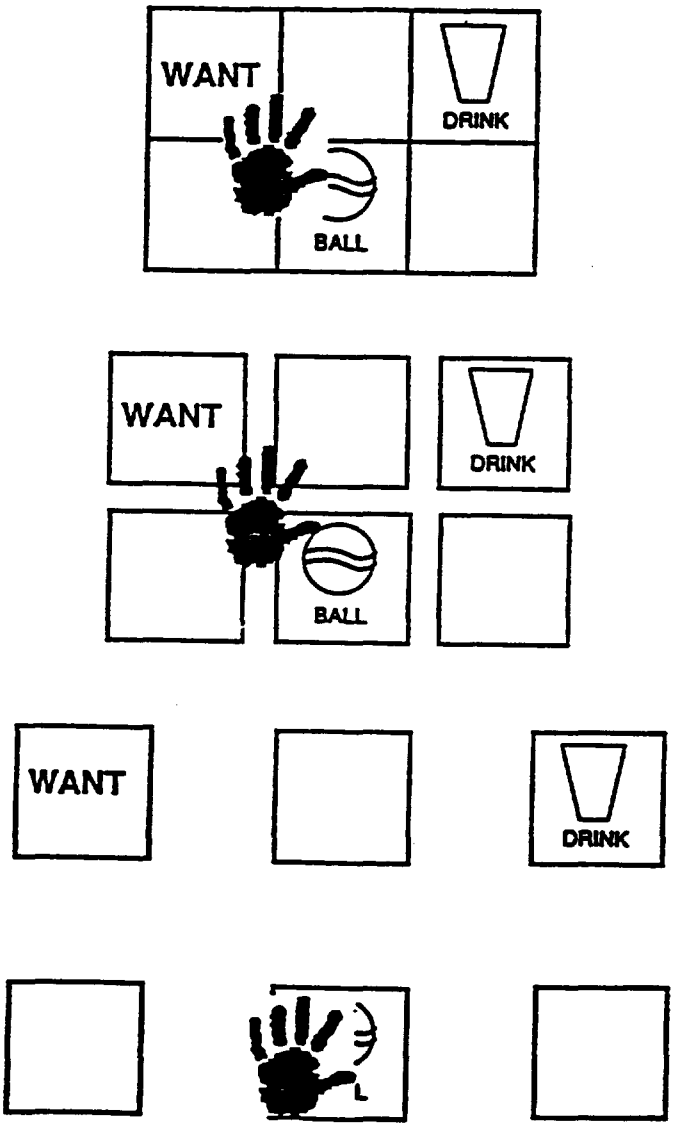
TESTING DISCRETENESS OF POINT BY VARYING SPACING BETWEEN SYMBOLS



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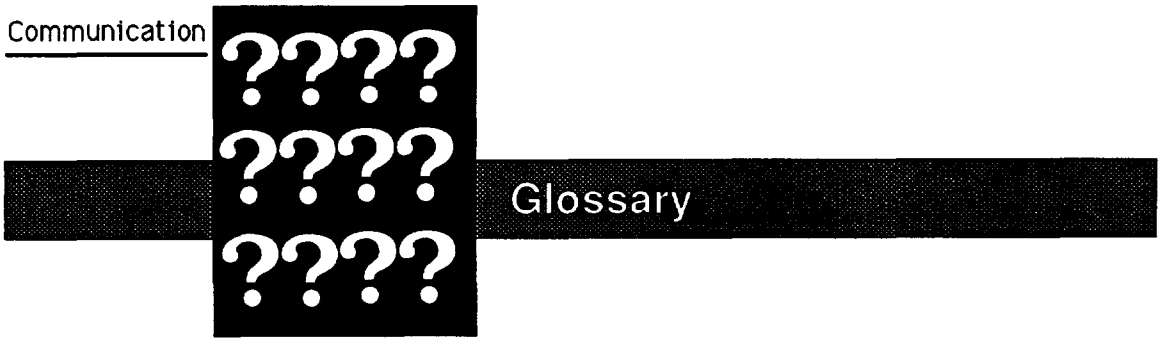


GLOSSARY TERMS RELATED TO AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

ABC Analysis (Antecedent, Behavior, and Consequence Analysis): a method of determining the variables controlling excess behavior by listing events occurring before and after each instance of an excess behavior.

Alternative Communication: Total replacement of speech and vocalizations with other means of communication such as gestures and graphics.

Augmentative Communication: Supplementing existing verbal speech and vocalizations with other means of communication.

Communication Board: An electronic or nonelectronic device used for storing and retrieving graphic symbols such as pictures or printed words.

Communication Wallet: A low-cost, portable method of storing graphic symbols. Photographs, line drawings or symbols are kept inside plastic sheets of a wallet.

Concurrent Instruction: Implementing procedures to teach more than one skill or behavior during the same time frame.

Digitized Speech: Speech output from electronic systems consisting of prerecorded human speech. This method is very intelligible but does not allow the user to create new messages.

Direct Select: Selecting a symbol by pointing with a hand, finger, toe, etc. or by eye gaze. This method can be used with electronic and nonelectronic devices.

Discrete Motor Movements: Precisely defined body movements that have a clear start and a clear end. Usually the movements are of a short duration and are easily repeatable (i.e., look up for 4 seconds, move hand to the right, etc.).

Discreteness of Point: A clear selection of one symbol so that observers can correctly identify the desired symbol.

Distributed Instructional Opportunities: Teaching opportunities occur individually and are separated from each other by a period of time, during which training on another activity takes place (see also Skill Cluster).

Ecological Inventory: The analysis of a learner's environment to identify skills that are necessary for the learner to participate in that environment and the activities in the environment.

Error Correction Procedure: Prompting correct responses using gestures, verbal prompts, physical guidance or modeling after an error has occurred.

Excess Behavior: A behavior which occurs with sufficient frequency, intensity or severity as to be (1) intolerable to teachers, parents or others, (2) a threat to the safety or well-being of the individual or others.

Explicit Vocabulary: Words that specify a particular object, activity, or event (e.g., "Pepsi®" rather than "drink," and "baseball" rather than "sport").

Expressive Communication: Indicating thoughts, desires, etc. by speaking, gesturing, or writing.

Function: The reasons why a behavior occurs (i.e., to get something, to get out of something, etc.). These reasons may be inferred by observing, through functional analysis, the context in which the behavior occurs (e.g., person grabs glass just after eating a box of popcorn, infer that she is thirsty).

General Case Instruction: Responding that occurs across all members of a stimulus class after instruction on only some of those members and the absence of responding in the presence inappropriate stimulus conditions.

Generalization: (see Response Generalization and Stimulus Generalization.)

Generalized Requesting: A single word, gesture or symbol used to request a variety of objects or activities (e.g., want).

Gestural Mode: The use of facial experessions, natural gestures, and sign systems or sign language representations as symbols.

Graphic Mode: The use of two-dimensional or three-dimensional representation as symbols.

Incidental Teaching: A systemization of naturally occurring interaction which is initiated by the learner. After the learner initiates, the interventionist takes the opportunity to expand the learner's communication skills by 1) giving full attention to the learner, 2) attempting to identify the topic of conversation, 3) asking for elaboration and clarification, 4) modeling the appropriate response using the least intrusive prompt; and 5) providing feedback to (e.g., "That's right!") the learner.

Instructional Cue Hierarchy: Sequencing prompts in terms of intrusiveness.

1. Least-to-most: Verbal prompt, gestural prompt, manual prompt and physical guidance.
2. Most-to-least: Opposite order (physical guidance, manual prompt, etc.). This hierarchy may vary across individuals and con texts (e.g., verbal prompts may not always be the least intrusive).

Leave-take-exit: The use of communicative response to escape a situation or location, or to stop participating in an activity.

Mand-Model: Mand-model is a language training procedure in which a learner is given an instruction ("mand") by an interventionist to request or describe something. Contingent on no learner response or an unacceptable response the interventionist models the appropriate response, and provides reinforcement when the response is performed.

Massed Instructional Opportunities: When a learner is being taught a skill through massed instructional opportunities, teaching trials follow immediately one after another, interrupted only by response prompts (if required) and/or reinforcement.

Message Board: Message boards serve users of graphic symbols in much the same way that bulletin boards and notes to oneself serve those with standard literacy skills. Graphic symbols are affixed to the message board as memoranda to the individual of tasks to be performed.

Multiple Exemplars: The term "multiple exemplars" refers to the use of a variety of persons, settings, and materials in a teaching program in order to promote generalization of a behavior. The exemplars selected should represent the naturally occurring variation that the learner will encounter.

Natural Maintaining Contingencies: Natural maintaining contingencies are consequences of a particular behavior or action that normally occur outside of instructional settings and that will continue to reinforce and maintain behaviors once instruction is withdrawn.

Non-socially Motivated Excess Behavior: Some excess (i.e., unacceptable or harmful) behavior is performed simply because of the effect it has either on the person who emits the behavior or on objects in the environment, not for the effect it might have on other people. For example, scratching a sore until it bleeds might be motivated by the relief that scratching provides (see Socially Motivated Excess Behavior).

Receptive Communication: Receptive communication is defined from the point of view of the person being spoken to, that is, the receiver of the communicative act. It involves acting upon what another has said, for example by pointing to an apple when told, "Find the apple."

Reinforcer Preference Testing: A number of objects the learner is thought to like are displayed and over a series of trials under varied conditions the interventionist notes which objects are selected most frequently.

Response Generalization: When the behavior from one response class is manipulated in such a way that behaviors in another response class are affected.

Response Prompting: Facilitating a learner's targeted response by means of verbal/gestural instruction, modelling, or physical guidance. For example, a learner might be prompted to produce the sign "want" by physically guiding his or her hands and arms.

Safety Signal: Indicating to the learner that in a brief period of time s/he will be able to leave-take, (i.e., depart from a situation, activity or event contingent on socially acceptable behavior). A safety signal reliably predicts and precedes terminations of an activity.

Scanning: Scanning is a selection technique in which choices of possible symbols or messages are presented to the communicator in a sequential manner until s/he signals that the desired item has been menued (i.e., presented). When a moving cursor light lands on the desired symbol the learner may activate a switch to stop the light, thus indicating a symbol selection.

Self-initiation: (See Spontaneity).

Self-injurious Behavior: Self-injurious behavior is behavior which causes harm to oneself.

Sign Language: Sign languages (e.g., American sign language) formal gesture that have their unique semantics, syntax, and are independent of the native spoken language of the country they originate.

Skill Cluster: An organized sequence of various behaviors involved in the completion of a task. For example teaching a person to eat at a fast food restaurant involves teaching the communication, domestic, money management, and self-help skills, all of which are components of the task.

Socially Motivated Excess Behavior: Socially motivated excess behavior is performed primarily in order to have an effect on others. Determining whether behavior is socially motivated is especially helpful when determining strategies to deal with such unacceptable behaviors. Having a temper tantrum, screaming and kicking to avoid a chore would be an example of socially motivated excess behavior. (See Non-Socially Motivated Excess Behavior).

Spontaneity: Spontaneous behavior or responding is action on the part of a learner that occurs in the absence of prompting or other contrived instructional cues. For example, a spontaneous request for "drink" might occur in response to being thirsty.

Stereotypic Behavior: Repetitive movements or actions with no apparent purpose other than self-stimulation.

Stimulus Control: When a learner's behavior has been reinforced in the presence of a particular stimulus or stimuli, the stimulus comes to control the behavior (i.e., the behavior is frequent in the presence of the stimulus and less frequent in its absence).

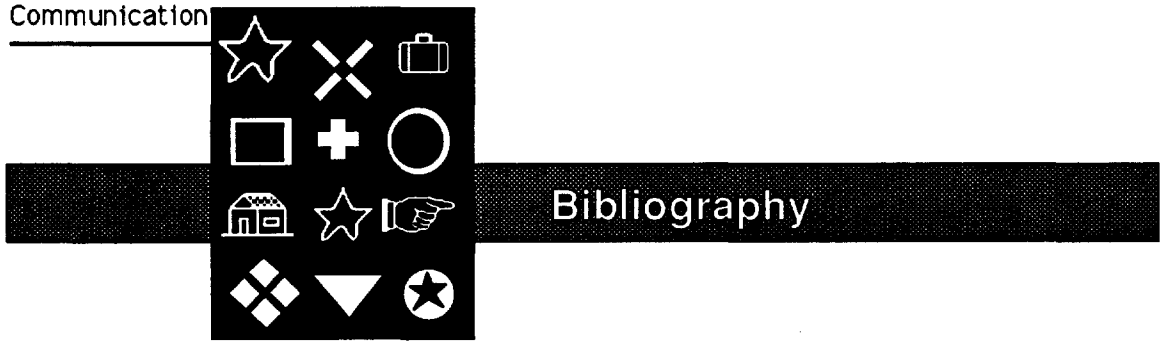
Stimulus Fading: In stimulus fading, a discriminative stimulus (a cue the learner is being taught to respond to) is initially exaggerated along a physical dimension, such as size, to get the learner to respond more readily. The stimulus is then slowly "faded" (that is, returned to its original state in a number of steps).

Stimulus Generalization: When a specific behavior occurs under conditions which are different than those that were present when the behavior was taught. Generalization may occur to different people, in different settings, during different activities, and when using different materials.

Stimulus Prompting: Stimulus prompting is a strategy used to teach a response wherein a discriminative stimulus is altered to make it more salient, and easier for a learner to discriminate (See Stimulus Fading and Stimulus Shaping).

Synthesized Speech: Synthesized speech is speech generated by non-human, mechanical means.

Time Delay: Inserting a pause, either constant or progressive, between the appearance of a naturally occurring cue and a response prompt. Time delay is used to fade prompts.



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