Prompting Systems

PowerPoint Slides
to be used in conjunction
with the Facilitator’s Guide
Recommended citation:

This resource includes contributions from the module developer and MAST Module Project colleagues Kelly Henderson (Facilitator Guide Editor), Tanner Jones (Web Designer), Diane Kester (Editor), Sue Byrd Steinweg (Project Director), Bradley Baggett (Graduate Assistant), and Sandra Hopfengardner Warren (Principal Investigator).
Session Agenda

- Introduction
- Session Goals and Objectives
- Applied Behavior Analysis
- Research
- Overview of Prompting Strategies
- Stimulus Prompting
- Response Prompting- Part One, Constant Time Delay
Session Agenda, continued

• Response Prompting – Part Two, More Constant Time Delay Video Examples
• Response Prompting - Part Three, Other Strategies
• Response Prompting- Part Four, Other Strategies Continued
• Summary
• Evaluation
Mr. Baker is about to conduct Samuel’s annual IEP meeting. Samuel is a new sixth grader in Mr. Baker’s class. Samuel is a student with Autism and is currently in Mr. Baker’s classroom for students with significant disabilities. The week before the meeting he calls up Samuel’s parents to find out any specific goals on which they would like to see their son working toward.
Introduction, continued

Samuel’s parents asked to have a goal addressing Samuel’s ability to independently wash his hands. Mr. Baker looks back at Samuel’s IEP goals from the past 5 years and realizes that in 3rd grade, 4th grade, and 5th grade this goal has been on Samuel’s IEP. Mr. Baker also knows that Samuel often needs hand over hand assistance or partial physical prompts to complete hand washing.
Introduction, continued

• Unfortunately Mr. Baker is running into a problem that many educators of students like Samuel may have. Samuel seems to be prompt dependent, meaning he can only complete the task with prompts delivered by another person.

• Mr. Baker needs to identify a prompting strategy that systematically fades out prompts, such as the physical prompts that Samuel usually requires to complete hand washing.
Session Goal and Objectives

The goal of this module is to look at how systematic prompting systems provide a solid instructional strategy for teachers working with students with special needs. The module will explain how prompting systems transfer stimulus control (learning) by systematically fading out a prompt by implementing a stimulus or response prompting procedure.
Session Objectives, continued

Objectives: Participants will be able to:

1. Identify response and stimulus prompting strategies;

2. Distinguish the difference between teaching and testing;

3. Identify the types of controlling prompts (e.g., verbal, model, gesture, physical);

4. Identify ways controlling prompts could be used with response prompting strategies.
Applied Behavior Analysis

• Prompting strategies are a part of systematic instruction.
• These strategies have been around for quite some time; most educators use some prompting regularly in their classes.
• Systematic Instruction defined:
  – a repeatable, predictable, organized process which reflects currently accepted best practices using performance data to make educated modifications to instruction (Snell, 1983).
Applied Behavior Analysis, continued

• Systematic instruction is also teaching focused on specific, measurable responses that may either be discrete or a chained task, and that are established through the use of defined methods of prompting and feedback based on the principles and research of applied behavior analysis (ABA).

• Every response is preceded by a stimulus and followed by a consequence.
Applied Behavior Analysis, continued

• In ABA, the **applied component** means:
  – the procedures are meant to be put to meaningful use in real life settings like school and the community.

• The **behavior component** means
  – the target behavior is operationally defined and that it can be observed and measured.

• The **analytic component** means
  – data is collected and analyzed to make informed decisions regarding teaching (Baer, Wolf, & Risley, 1968, 1987).
Prompt is from Principles of Applied Behavior Analysis (ABA)

• Basic principle is that every response is preceded by a stimulus and followed by a consequence.

S-R-C

• A reinforcer is a consequence that increases the recurrence of the response in the presence of this target stimulus.

• The stimulus becomes a discriminative stimulus for making the response.
Prompt is from Principles of Applied Behavior Analysis (ABA)

• Basic principle is that every **response** is preceded by a **stimulus** and followed by a **consequence**.

  S-R-C

• A **reinforcer** is a consequence that increases the recurrence of the response in the presence of this target stimulus.

• The stimulus becomes a discriminative stimulus for making the response.
Applied Behavior Analysis, continued

• The basic principle of ABA is that every behavior is preceded by an antecedent and followed by a consequence.
  – An antecedent is put into place which leads to occurrence of a behavior and is followed by a consequence. Also known as a stimulus.
  – A behavior is also known as a response.
  – The consequence either acts as a reinforcer, which will increase the likelihood the behavior will occur again, or as a punisher, which will decrease chance of the behavior re-occurring.
Applied Behavior Analysis, continued

- The stimulus becomes a discriminative stimulus for making the response. This is also known as an SD (or “S-Dee”). A discriminative stimulus is the cue to respond.
- Some examples follow:
Discriminative Stimulus is the Cue to Respond

• Examples
  – Stimulus: sight word “house”
    • Response: reads “house”
  – Stimulus: math problem 4+3=
    • A) 5
    • B) 9
    • C) 7
    – Response: selects c
  – Stimulus: Comprehension question “What planet do we live on?”
    • Response: “Earth”

Note:
  – In each of these examples, the student has an equal chance of being right or wrong... the stimulus or cue to respond in no way provides help with the answer.
Applied Behavior Analysis, continued

• In the first example, the sight word “house”, the word on a card is the S-Dee or discriminative stimulus for the student to say the word “house”.

• In the second example, we see the written math problem of 4+3= and multiple choice responses. The S-Dee is the written equation of 4+3= and the response the student should select is the answer C or 7.
Applied Behavior Analysis, continued

- In the final example, the S-Dee is a comprehension question asked “What planet do we live on?” and the response is that the student says “earth”.
- In each of these examples, the student has an equal chance of being right or wrong. The stimulus or cue to respond in no way provides help with the answer.
Activity-ABA

• Consider an academic or other learning task appropriate for a learner you work with or know well.
• Write out three or four the discriminative stimuli (SDs) for components of the task.
• Then identify the desired response for each SD.
• Share with each other- notice the breadth of possible SDs and responses across content areas and type of learner.
Research

• Systematic instruction has been successfully used to teach discrete skills, chained skills, functional and academic skills to students with disabilities.

• But without systematic and consistent delivery of instruction acquisition will be slow (Spooner, Browder, & Mims, in press).

• Let’s examine differences between a discrete skill and a chained skill.
Research, continued

• A discrete skill is a skill that cannot be broken down any further. It usually involves one step.

• Examples of discrete skills:
  – activating a voice output device,
  – saying hello,
  – giving a high five,
  – reading a sight word.
Research, continued

• A chained skill is made up of several discrete skills. It can be broken down into a set of skills.

• Examples of chained skills:
  – hand washing,
  – doing laundry,
  – making a sandwich,
  – completing an algebraic problem.
Research, continued

• 31 studies compared different systematic instructional strategies commonly used to teach individuals with significant cognitive disabilities (Ault, Wolery, Doyle & Gast, 1989).

• The review determined the efficiency and effectiveness of several instructional strategies: trial and error, error correction, most-to-least prompts, system of least prompts, constant and progressive time delay, stimulus shaping, and stimulus fading.
Research, continued

- Results indicate that all systematic instructional strategies were effective in teaching students the acquisition of new skills, though some strategies were more efficient than others (i.e., stimulus prompting procedures over response prompting procedures) and some were more parsimonious than others (i.e., response prompting procedures over stimulus prompting procedures).
Overview of Prompting Strategies

• Remember that every behavior is preceded by a stimulus and followed by a consequence.

• When a student sees a stimulus (e.g., sight word “stop”) he or she should respond to that stimulus (e.g., says the word “stop”).
Overview of Prompting, continued

- Sometimes students do not respond to the stimulus or respond incorrectly to the stimulus.
- When this happens a prompt should be added to help the student learn; this is also known as transfer stimulus control.
When has learning occurred?

• When the individual consistently makes a response in the presence of a specific, discriminative stimulus.... This is called “stimulus control”.

• Stimulus control is what you want as a teacher. We want our student to respond independently to a discriminative stimulus vs. us having to prompt them to respond.
Overview of Prompting, continued

• Q: When do you know if learning has occurred?

• A: When the individual consistently makes a response in the presence of a specific discriminative stimulus.

• This is called stimulus control, and is goal for you as a teacher. We want our students to respond independently to an S-Dee or discriminative stimulus versus us having to prompt them to respond.
Terms to Know

• **Target Stimulus** – the discriminative stimulus that is expected to ultimately control the occurrence of the behavior (natural cue)

• **Controlling Prompt** – stimulus added to the target stimulus or after the target stimulus to help the student make the target response
Overview ofPrompting, continued

• Terms to know:
  – Target stimulus- the S-Dee that is expected to ultimately control the occurrence of the behavior. It is the natural cue to respond.
  – Controlling prompt- stimuli that are added to the target stimulus or after the target stimulus to help the student make the target response. It might be a physical prompt, a verbal prompt, or a positional cue.
Add a Stimulus

• If the target stimulus does not control the behavior, pair it with a stimulus that does to develop stimulus control.
  – This is called a prompt.

• When shown cards with sight words and told, “find the word ‘house’”, the student does not select ‘house’.

• So something is added to the flash card and task direction.
Overview of Prompting, continued

• If the target stimulus does not control the behavior, it needs to be paired with a stimulus that does in order to develop stimulus control. This is called a prompt.
  – For example, when shown cards with sight words and told “find the word house” the student does not select the word house. Then something is added to the flash card or task direction.
Overview of Prompting, continued

• Prompting strategies are specific strategies of delivering a prompt so that the student will learn how to respond in the presence of that target stimulus (or SD).

• There are all different types of prompts. The next table summarizes a variety of instructional prompts and examples.
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Two Types of Prompting Systems

• Stimulus Prompts
  – Embedded in the materials
    • Color coding correct answer
    • Position cue
    • Making correct answer more salient

• Response Prompts
  – Provided by the teacher
    • Tell student how to respond
      – Verbal prompt
    • Show the student how to respond
      – Model prompt
    • Guide the student to make the motor response
      – Physical prompt
Stimulus Prompting

- **Stimulus prompts** are prompts that are added to the materials. Three types:
  - Color coding the correct answer is a stimulus prompt because the prompt (the color) is embedded into the actual materials.
  - Position cue is the placement the correct answer closer to the student.
  - Making the correct answer more salient. Examples: placing a red dot in the corner of a target sight word, placing pictures behind the target sight word, or bolding the correct answer.
Response Prompting - Constant Time Delay

- **Response prompting systems** - the prompt is delivered by the teacher after, or concurrently with, the presentation of the target discriminative stimulus.

- Verbal prompts, model prompts, and physical prompts are among the prompts that can be added by the instructor.

- There are six common response prompting strategies.
Response Prompting Strategies

- Constant Time Delay
- Progressive Time Delay
- Simultaneous Prompts
- System of Least Prompts
- Most to Least Prompts
- Graduated Guidance
Constant Time Delay, continued

• Time delay is known as an errorless teaching strategy. It is a response prompting system where the prompt is faded using increments of time.

• Typically one type of prompt is chosen (e.g., model) and used throughout instruction.
Constant Time Delay, continued

- Starts with a zero delay round - the prompt is delivered at the same time as the stimulus is presented so that the student can correctly respond without making an error.
  - For example, the teacher says “Point to the word ‘precipitation’” while pointing to the correct answer “precipitation” in an array of science terms.
Constant Time Delay, continued

• After several rounds of zero-delay instruction, add a time delay.

• Two types of time delays, **constant** and **progressive**.
  
  – In **constant time delay** the increments of time added after presenting the target stimulus stays constant (typically 2 to 4 seconds). If the student does not respond within the set amount of time, a prompt is delivered. Again, typically the prompt stays the same.
Constant Time Delay

• It is usually used with simple discrete behaviors.
• It leads to errorless learning.
• The teacher offers a cue and immediately gives the response to teach the child the correct response. The teacher reinforces the child’s correct response.
• After several trials the teacher offers the initial cue and waits a set delay (e.g., 5 seconds) for the child to give the correct response. Praise is then given for the correct response.
Constant Time Delay, continued

- An example: After completing several rounds at a zero-second delay the teacher will present the target stimulus of the sight word ‘precipitation’ ask “What word?” and wait for a set time of 4 seconds for the student to respond.

- If no response, the teacher uses a model prompt to point to the word ‘precipitation’ and asks the student to respond.
Activity- Constant Time Delay

• Watch the following video which demonstrates how to teach sight words using constant time delay. [http://mast.ecu.edu/modules/ps/lib/media/video01.html](http://mast.ecu.edu/modules/ps/lib/media/video01.html).

• This is an example of one-on-one instruction in a receptive format.
Activity, continued

• In this video, the teacher, Jennifer, starts off teaching the vocabulary words at a zero-delay round. After a few trials of the student doing well with the zero delay round Jennifer moves to the delay round where she uses a 4 second delay.

• Note that on the teaching trial where she presents the word ‘confused’, she repeats the stimulus and talks through the wait time.

• When using constant time delay avoid a ‘begging system’, meaning avoid repeating the task direction.
Activity, continued

• Present the task direction once and allow the wait time to occur. If the student does not respond, prompt and move on, even if it is felt that the student knows the target word.

• This teaching procedure is very precise and systematic. The delivery is usually pretty fast paced.

• On several trials, the student goes for the wrong answer; Jennifer quickly redirects the student instead of allowing the student to focus on the wrong answer.
Activity, continued

• Note the teacher does not highlight the wrong answer in any way. She does not say, “No! That is not the word ‘package’; this is the word ‘funeral’”. This could highlight the incorrect answer rather than focus only on the correct one.

• Another great strategy Jennifer uses when the student gets the answer correct on his own is increasing the reinforcer with a high five.

• Jennifer mixes up the words between each teaching trial. This prevents the student from memorizing the word because of its position.
Activity, continued

• If time allows, watch the video a second time.
• Look for the zero-delay and delay rounds.
• Note when and how redirection and reinforcement is used.
Constant Time Delay, continued

• Watch video at http://mast.ecu.edu/modules/ps/lib/media/video02.html

• This is an example of how one can teach sight words using constant time delay in an expressive format.

• Jennifer presents the zero delay round by showing the student one word at a time and asking the student to repeat the word.
Constant Time Delay, continued

• During the delay round, she continues to present one word at a time and asks the student to read the word on his own.
• She gives him 4 seconds to respond and if he does not, she prompts him by reading the word and asking him to repeat her.
• If he starts to read the wrong word she interrupts and says the correct word asking him to repeat.
Constant Time Delay, continued

• Note how Jennifer shuffled the cards between trials. This ensures the student knows the word rather than just memorizing the order of the words.

• Jennifer does a nice job providing a stronger reinforcer (high five) when the student gets the word correct on his own.
Constant Time Delay, continued

• Watch the video at http://mast.ecu.edu/modules/ps/lib/media/video03.html, an example of teaching vocabulary definitions using constant time delay.

• The teacher says, “I’m going to say a definition and I want you to point to the correct word for the definition.” The teacher uses the definition as the stimulus to cue the student to find the corresponding word.
Constant Time Delay, continued

• Note that the matching activity could be adapted to better meet the needs of the learner and the learning objective.
• For example, the teacher could present pictures that match the word. Students can demonstrate comprehension of the word by matching the word to the picture.
Constant Time Delay, continued

• Watch the video at http://mast.ecu.edu/modules/ps/lib/media/video04.html, an example of using constant time delay to teach sight words in a group setting.

• This is a video provided by Attainment Company and shows constant time delay to teach sight words during the *Early Literacy Skills Builder* (Browder, Gibbs, Ahlgrim-Delzell, Courtade, & Lee, 2007)
Constant Time Delay, continued

- In this video the teacher, Suzanne, starts off with a zero time delay and then moves into the delay round. She uses attentional cues and observational learning to maximize student learning.

- If time allows, replay the video. List all the cues used during Suzanne’s fast paced instruction.
Other response prompting strategies

- In addition to constant time delay response prompting strategies, there are number of other available strategies.
- In **progressive time delay** the increments of time added after presenting the target stimulus progressively increase.
  - Increments can be increased by 1 second or by 2 seconds at a time. If the student does not respond within the set amount of time for that specific trial, a prompt is delivered.
Progressive Time Delay, continued

– Typically the increases in time have a ceiling that the teacher has set (e.g., 8 seconds).

– For example, after completing several rounds at a zero-second delay the teacher will present the target stimulus of the sight word ‘precipitation’ and ask “What word?” and wait 2 seconds for the student to respond. On the next trial the wait time will increase to 4 seconds and the next trial to 6 seconds and so on.
• Similar to constant time delay
• Progressive time delay gradually increases the delay period between the initial task direction (target stimulus) and the prompt (controlling prompt) after each trial.
• Can be 1 second, 2 seconds, 3 seconds
  Or
• 2 seconds, 4 seconds, 6 seconds, etc.
Simultaneous prompting

• Also a response prompting system
• Has been used successfully with both discrete as well as chained tasks.
• After the stimulus is presented, the controlling prompt (e.g., model prompt) is immediately delivered.
  – This is also what happens during the zero delay rounds of time delay, but with simultaneous prompting, the prompt is always delivered immediately after the stimulus at zero delay.
Simultaneous prompting, continued

• How can you tell if the student has learned anything?
• Check for learning by conducting a test (probe) session. During this session you will just test and not prompt.
  – If the student gets something wrong, do not say anything and move on with testing.
Simultaneous prompting, continued

– If the student gets it correct, do not praise the response, rather just praise for their overall participation in the activity.
– Review data after a testing session as the data will show if learning has occurred or not.
– If learning has not occurred, continue with instruction using simultaneous prompts.
Simultaneous Prompting

- It is very similar to constant or progressive time delay, but never leaves the zero delay round.
- To identify if transfer of stimulus control (learning) has occurred, probe students often-typically before instruction occurs each day on targeted skill.
- After probing, if the student is able to complete the skill independently instruction stops and this goal is placed into maintenance.
- If student is not able to independently complete the skill, continue trials at a zero delay.
System of Least Prompts

• Also known as least-to-most prompt system or least intrusive prompt system.

• This prompt strategy uses a prompt hierarchy in which prompts are provided, as needed, from the least intrusive prompt to the most intrusive prompt.
System of Least Prompts, continued

• In the system of least prompts the teacher selects about three types of response prompts and sequences in order of intrusiveness (e.g., verbal, then model, then physical guidance).

• Although “intrusiveness” is subjective, generally physical assistance is considered more intrusive than other forms of prompting.
Prompting Hierarchy

Natural Cue
Gesture
Verbal
Visual/Picture
Model
Physical (partial, full)
Full Physical
System of Least Prompts, continued

• Once the hierarchy of prompts is chosen, plan a constant wait time (usually 3 to 5 seconds) to be provided after the discriminative stimulus and between prompts.

• This provides the student a chance to respond with the least intrusive prompt possible.
System of Least Prompts, continued

- After the presentation of the stimulus, wait a predetermined amount of time (e.g., 4 seconds) for the student to respond independently.

- If the student does not respond after the predetermined amount of time, then provide the first prompt in the predetermined prompt hierarchy (e.g., verbal prompt), and again, wait the predetermined time for the student to respond.
System of Least Prompts, continued

• This process continues (e.g., model prompt) until the student responds or the most intrusive prompt in the hierarchy has been given (e.g., full physical guidance).

• If the student makes an error during the instructional trial, block the error and redirect to the correct stimulus and the instructional trial would be over.
SLP is also known as Least to Most Prompts.

SLP can be used with a task analysis or a chain of behaviors (e.g. locating a web page) or a discrete task.

A hierarchy of prompts with a delay of time is used on each step of the task analysis (e.g., g, v, m, p) until the learner makes the targeted response.

Always give the learner an opportunity to make the correct response before any prompting on each step of the task analysis.
System of Least Prompts

• Use the least intrusive prompt first and progress to more intrusive prompts until the learner responds.
• Identify about 3 – 4 prompts in the hierarchy
• Encourage the learner after correct and independent responses
• Decrease praise as the learner responds to the natural cues.
• Add a 3 to 5 second delay between prompts.
System of Least Prompts, continued

• The system of least intrusive prompts is considered to be “self fading,” because the teacher uses less assistance as the student begins to respond.

• This self fading can be promoted through the use of praise and other reinforcers.
  – For example, once the student can respond with a verbal prompt, the instructor no longer praises responses when the student waits for a model or physical guidance in order to shape progress towards independence.
Activity, System of Least Prompts

- Watch the video at http://mast.ecu.edu/modules/ps/lib/media/video05.html, which shows how the system of least prompts was used to teach a student to use the phone to call her mother. The prompt hierarchy chosen was a verbal, model, and physical prompt with a 4-second wait time before each prompt.
Activity, continued

• In this video the instructor used a verbal, model, physical prompt hierarchy on each step of the task analysis to use a phone.
  – In the first step, to pick up the phone, a verbal, model, and physical prompt were needed before the student completed the step.
  – In the second step, to dial the number, the student needed a verbal prompt, then a model prompt before completing the step.
Activity, continued

• If time allows, replay the video. Note the reinforcer for the step where the student only needed a model prompt was a greater reinforcer than the step where she needed a physical prompt.
Activity, continued

• Watch the video at http://mast.ecu.edu/modules/ps/lib/media/video06.html.

– A system of least prompts is used to teach comprehension of text read aloud. The teacher asks the student a literal recall question and the first level prompt is to reread the line of text containing the answer and re-ask the comprehension question. The student is able to correctly answer the question after only the first level prompt.
Other response prompting strategies, continued

- **Most to least prompting** (i.e., system of most prompts, most intrusive prompt system) also uses a hierarchy of prompts like system of least prompts, but in this case, the prompting starts with the most intrusive prompt and systematically moves to less intrusive prompts as the student starts to respond more independently.
Most to least prompting strategies

• Another major difference between most to least and a system of least prompts is that in most to least prompt system the instructor may stay at one prompt level (e.g., model prompt) for several instructional sessions before moving to a less intrusive prompt.
Most to least prompts

• Most to least prompts is known as decreasing assistance and is the opposite of the system of least prompts.

• In most to least prompts, provide the target stimulus with the controlling prompt at the same time on each step of the task analysis.

• Gradually prompts with lesser degrees of control or intrusiveness are used, while being paired with the target stimulus.

• Start with the most intrusive prompt paired with the task direction (stimulus).

• A criterion of functioning is needed at each level of prompting. Once mastered the prompt can be faded to the next level of less intrusive prompting.

• Example- Full physical, partial physical, model, verbal
Most to least prompting strategies, continued

• Because this system is not “self fading,” instructors should use daily data to guide these decisions.
  – For example, once a student responds consistently with a model prompt, the teacher would then fade back to a verbal prompt.

• Most to least prompting is the most widely used instructional procedure to teach response chains to individuals with developmental disabilities.
Graduated Guidance

• This instructional approach can be used with continuous behaviors, discrete behaviors or chained behaviors (e.g., handwriting, navigating computer mouse, adding a solvent to a solute to make a solution, accessing AAC, eating, walking).
• It is often used to teach students a motor skill.
• It uses very intrusive prompting until the learner begins to demonstrate independent physical responses and gradually fades prompting.
Graduated guidance prompting

- **Graduated guidance** is a response prompting system that is often associated with responses that require a motor movement (e.g., feeding, toileting).
- Was initially used to teach independent toileting skills to institutionalized adults with severe intellectual disabilities.
Graduated guidance involves the most intrusive prompt, typically hand over hand assistance, also called a full physical prompt (e.g., hand over hand assistance to help a student scoop food and bring to mouth), until the instructor feels the student starting to participate.
Graduated guidance prompting, continued

• The instructor then backs off the amount of assistance (e.g., the instructor will move their hand back to the students wrist and continue to help the student scoop and bring food to mouth) until the instructor feels the student is starting to participate more or initiate movement.
Graduated guidance prompting, continued

• As training continues and student progresses, the instructor can continue to lessen the level and amount of the prompt (e.g., instructor moves hand to student’s elbow).

• This continues until the teacher has faded assistance back to just shadowing. At any time during this procedure the instructor feels the student not initiating or participating, the amount of assistance can increase again.
Simultaneous Prompting

- It is very similar to constant or progressive time delay, but never leaves the zero delay round.
- To identify if transfer of stimulus control (learning) has occurred, probe students typically before instruction occurs each day on targeted skill.
- After probing, if the student is able to complete the skill independently instruction stops and this goal is placed into maintenance.
- If student is not able to independently complete the skill, continue trials at a zero delay.
Stimulus prompting

- **Stimulus prompting strategies**, like response prompting strategies, can be used to change a target behavior. This procedure involves manipulating or changing the stimulus that is presented. There are two different antecedent prompting procedures commonly used:
  - stimulus shaping and
  - Stimulus fading
Stimulus Shaping

• The instructional materials highlight a relevant feature to facilitate learning.

• The initial shape is then gradually changed to form the natural stimulus.
Stimulus prompting, continued

- **Stimulus shaping** is the process of highlighting an important feature of the materials used for instruction, the relevant dimensions (Etzel & LeBlanc, 1979; Spooner, Browder, & Mims, in press; Wolery & Gast, 1984).

  - For example, to teach Sam to recognize his name, the teacher might begin by pairing the word “Sam” with shapes so that the difference is easy to discriminate. In subsequent trials, letters and words will be introduced until Sam needs to recognize all the letters in his name.
| Level 1:   | *** Sam ***  
|           | Sam *** ***  
|           | *** *** Sam  |
| Level 2:  | Sam T a  
|           | M Sam x  
|           | S b Sam  |
| Level 3:  | put sit Sam  
|           | Ask Sam did  
|           | Bob dog Sam  |
| Level 4:  | Sam Sue Am  
|           | Sat Sam Mam  
|           | Tam Sue Sam |
Stimulus prompting, continued

• More examples of stimulus shaping:
To teach word recognition

(Cooper, Heron, Heward, 2007, p. 405)
To teach number recognition

(Cooper, Heron, Heward, 2007, p.405)
Stimulus prompting, continued

- **Stimulus fading** is where a feature of the materials (stimulus) is made more salient and then gradually faded over time to become a more generalized stimulus.

- Fading involves the manipulation of any dimension of the stimulus (e.g., color, size, shape, position), not just the relevant one.
Stimulus prompting, continued

• Stimulus fading is one of the oldest methods for teaching individuals with developmental disabilities to read sight words. Often the sight word is paired with a picture or a relevant feature. Examples:
  – The word “red” is written in the color red and eventually faded so the word red appears in black;
  – The word “car” is written with a picture of a car behind the word, over time the picture of car is faded and only the word car remains.
Stimulus Fading Example

• Sight words
  – Reading format: expressive or receptive
  – Prompt used: correct word highlighted with color or picture cue which is faded across trials
  – Ex:

  red red red red
Stimulus prompting, continued

- The following shows an example of stimulus fading for teaching the number 5 by manipulating size. The teacher might use several trials at each fade level.

<table>
<thead>
<tr>
<th>5</th>
<th>8</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>
Stimulus prompting, continued

- At times teachers may become confused over prompts. Examples:
  - Giving a task direction is not a prompt. “Read the word” and presenting a sight word is not a verbal prompt; rather it is the cue to respond.
  - If the phrase is repeated and paired with the answer, it then does become a verbal prompt. For example, “Read the word, ‘car’”. This then becomes a verbal prompt.
Stimulus prompting, continued

- Supporting the student to be ready to respond is not a prompt unless they are clued to the correct answer.
- Placing a student’s hand above all answers so they can slide their hand to the correct answer is not a physical prompt. They still have an equal chance of getting the answer right or wrong.
- This is positioning them to be ready to respond, and is used when students have limited physical abilities that may impede in his or her ability to answer a question or respond to a stimulus.
Principle of Parsimony

• The principle of parsimony is to use the most efficient or simplest intervention method that is effective.

• It is much easier for instructors to use response prompts rather than manipulating the stimulus itself.
  – For example, making materials that show a picture of a sight word slowly fading out is much more time consuming than just inserting a prompt after the presentation of the stimulus.
Principle of Parsimony, continued

• For this reason, teachers will typically try response prompts before stimulus prompts.
• Some response prompting strategies are more parsimonious than others.
  – For example, constant time delay may be easier for a paraprofessional or peer tutor to use than progressive time delay because there is only one level of fading.
Principle of Parsimony, continued

• The following slides provide a summary of the decisions teachers need to make in planning systematic prompting (Spooner, Browder, & Mims, in press).
### Decision Guide for Planning Systematic Prompting

<table>
<thead>
<tr>
<th>Decision</th>
<th>Least Intrusive Prompting</th>
<th>Time Delay of a Response Prompt</th>
<th>Most to Least Prompting</th>
<th>Stimulus Prompts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will more than one prompt be used?</td>
<td>Yes</td>
<td>Probably not</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>What types of prompts will be used?</td>
<td>A hierarchy from less to more assistance (e.g., verbal, model, physical)</td>
<td>One prompt that is effective for student and target response (e.g., model)</td>
<td>A hierarchy of prompts from more to less assistance (e.g., physical, partial physical, gesture)</td>
<td>Some modification of the discriminative stimulus (e.g., color coding; use of picture)</td>
</tr>
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<td><strong>How much time will I wait between the discriminative stimulus and the first prompt?</strong></td>
<td>Wait about 3 seconds; then if no response, verbal; wait 3 more seconds, if no response, give model; wait 3 more seconds, if no response, give physical guidance.</td>
<td>On the first trial there is no time (zero delay) because prompt is given with the discriminative stimulus.</td>
<td>Wait about 3 seconds for student to respond, then use physical guidance. After a set number of days, fade to partial physical guidance.</td>
<td>Stimulus prompt is used concurrent with discriminative stimulus. Usually this requires some modification of materials in advance of teaching.</td>
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<td><strong>How will I fade the prompt?</strong></td>
<td>This method is “self fading.” The teacher reinforces responses with least assistance student needs (e.g., if can do it with model, does not praise physical guidance).</td>
<td>The prompt is faded using increments of time. After the zero trials, the teacher uses some delay (e.g., 4 seconds). If progressive delay is chosen, this may increase across trials (e.g., 2’, 4’, 6’, 8’).</td>
<td>The prompt is faded by following a schedule to move to the lesser prompt (e.g., 2 days at each prompt level).</td>
<td>The prompt may be faded by reducing its salience (stimulus fading). In stimulus shaping, the discrimination is made more difficult on subsequent trials. Note: time delay can also be used e.g., The picture can be introduced after 4 seconds delay.</td>
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<td>What do I do to discourage errors?</td>
<td>If an error begins, try to block it and give the next level of prompt. Praise correct responses.</td>
<td>Tell student “not to guess.” Repeat zero delay trials. If an error occurs after the prompt, a different type of prompt may be needed or change in reinforcement for correct responses.</td>
<td>If an error occurs after moving to a less intrusive prompt, block the error and give a more intrusive prompt (e.g., if an error occurs on the physical assistance level, give full physical).</td>
<td>No error should occur at first. If they do, the choice of stimulus prompt may need to be changed or some pretraining may be needed (e.g., to name the pictures). On subsequent trials, go back to the easier trials if errors occur (e.g., to less faded picture or easier discrimination).</td>
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<td>How do I promote independence (transfer of stimulus control)?</td>
<td>Reinforce when student performs step correctly with less assistance.</td>
<td>Only praise correct responses.</td>
<td>Praise correct prompted performance until the last level of fading.</td>
<td>Praise correct responses. As fading progresses, only praise responding at levels equal to or better than, prior day.</td>
</tr>
<tr>
<td></td>
<td>Give strong praise or other reinforce for unprompted responses.</td>
<td></td>
<td>Then only praise correct unprompted responses.</td>
<td></td>
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</table>

Teaching versus Testing

- Response and stimulus prompting are great strategies to help students learn.
- But it is important to also check for student achievement through testing or probe sessions. This provides information on what has been learned and what needs more teaching.
- When checking for student achievement, the student should have an equal chance of getting the item right or wrong.
Student Achievement

vs.

“Something Else”

Student achievement

– Select picture for main idea.
  • eye gaze, point, grab, pull-off
– Label parts of a cell.
  • Eye gaze, point, grab, pull off

Does student have an equal chance to get the item right or wrong?

“Something Else”

– Select picture with model prompt- point where I point.
– Student works with peer who selects the picture.
– Teacher places students hand on switch that says “that’s it”.

Teaching versus Testing, continued

• Some examples of student achievement:
  – The student selects the picture for main idea by either eye gazing, pointing, grabbing the correct answer, or pulling off velcroed responses to hand the answer to the teacher.
  – For the goal of having a student label parts of a cell, the student can indicate the correct answer or show achievement by eye gazing, pointing, grabbing the correct answer, or pulling off velcroed responses to hand the answer to the teacher.
Teaching versus Testing, continued

• So what is “something else?” Some examples of not showing achievement or mastery:
  
  – Having the student select the correct picture for main idea after a model prompt does not show achievement. So when the teacher says, “Point where I point”, this is a great teaching strategy but should be faded out over time versus used constantly. By the time the student is tested on what they know, this prompt should be faded.
Another example of “something else” is when the student works with a peer who selects the answer for the student. This is a great strategy, but this support should be faded out over time to really identify what the student has learned.

In a final example, the teacher places the student’s hand on a voice output device that says, “that’s the answer.” This does not show that the student knows the information on his own. It is a great strategy, but it needs to be faded because the student is completely passive and you cannot determine if the student has really learned or not.
Two Important Points

Reinforcement

• Praise student for making correct response with no more assistance than needed on prior trials.
  – For example, if the student can make response with verbal prompt, don’t praise waiting for a model prompt.

Error Correction

• In time delay, use small increments of time to discourage errors.
  – Correct any errors and remind student to wait for help if needed.
• In prompt hierarchies, may correct error but try to interrupt and give next level prompt.
Teaching versus Testing, continued

- When using a systematic prompting strategy, consider the reinforcement and error correction procedures.

- When reinforcing a student, only praise or deliver the reinforcer for making a correct response with no more assistance than needed on prior tasks.
  - If a student can make the correct response after only a verbal prompt, avoid praising the student if they respond after a model prompt.
Teaching versus Testing, continued

• When correcting an error, if using the time delay strategy, small increments of time are used to discourage errors.
  – If an error occurs, correct and remind the student to wait if they don’t know the answer.
  – When correcting errors during a prompt hierarchy like system of least prompts, or most to least prompts, either correct the error by providing the correct response and ending that particular trial or deliver the next level prompt and continue through the prompt hierarchy.
Teaching versus Testing, continued

• Finally, when using prompting strategies, two important points must be considered: reinforcement and error correction procedures.
Activity- Response Prompting

• In pairs, role play use of the specific prompting strategies to teach the skill.
  – Constant time delay (teach 4 sight words)- Use a 4 second delay time. Practice it for a student that would respond expressively and receptively
  – Progressive time delay (teach vocabulary definitions)- Use a 2 second delay time and increase by 2 second increments.
  – Simultaneous prompting (teach 4 sight words)
Activity- Response Prompting

– System of least prompts (teach a chained skill (e.g., washing hands))
– Most to least prompts (teach a chained skill (e.g., making a sandwich))
– Graduated guidance (teach a motor skill (e.g., self-feeding with spoon))
Summary

• Systematic prompting strategies are the most effective and efficient teaching strategies to achieve learning (transfer stimulus control) for students with disabilities.

• Derived from the principles of ABA, prompting strategies have years of research showing effectiveness for teaching both discrete and chained skills to students with disabilities.
Summary, continued

• The two types of prompting strategies include stimulus and response prompting.
• In stimulus prompting the prompt is embedded in the stimulus itself.
• In response prompting, the prompt is delivered after the presentation of the stimulus by the teacher.
Summary, continued

• The five types of response prompting strategies are time delay (constant and progressive), system of least prompts, most-to-least prompts, and graduated guidance.
• The two types of stimulus prompting strategies are stimulus prompting and stimulus fading.
Summary, continued

• To be effective, the instructor needs to have a clear plan for reinforcement and error correction procedures when teaching a skill using a prompting strategy.

• Finally, it is more parsimonious to use response prompting over stimulus prompting.
Focus and Reflection Questions

Let’s go back to the session objectives for discussion.

• Identify response and stimulus prompting strategies.
• Distinguish the difference between teaching and testing.
Focus and Reflection Questions, continued

• Identify the types of controlling prompts.
• Identify ways controlling prompts could be used with response prompting strategies.
Application and Extension Activities

1. Find research articles comparing the effectiveness of each response prompting strategy.
Application and Extension Activities, continued

2. Implement a prompting strategy to increase a target behavior with a student with disabilities.
   – Identify a target behavior.
   – Identify an appropriate prompting strategy.
   – Collect daily data.
   – Monitor the data and make instructional changes as necessary.
   – Present the results.
3. Have a group discussion on the pros and cons of using response prompting strategies and stimulus prompting strategies (e.g., ease of preparation, ease of use, ease of fading, materials required).
Application and Extension Activities, continued

4. Given a variety of IEP objectives, determine the prompting system to be used and discuss why the prompting system was chosen (see examples below).
   - Given a graphic organizer, Sariah will independently complete all the steps to solve an algebraic equation in 4/5 trials.
   - During an inquiry science lesson, Thomas will independently complete 7 out of 9 steps of the inquiry science task analysis.
   - When presented with target vocabulary words from a grade appropriate book, Jenny will independently identify 9/10 words.
   - Before meal times, Noman will independently complete 6 out of 8 steps of hand washing.
   - Gorge will independently greet his peers using his voice output device in 3 out of 4 opportunities.
Self-Assessment

• A self-assessment with response feedback is available at http://mast.ecu.edu/modules/ps/quiz/. Participants may take this assessment online to evaluate their learning about content presented in this module.
Session Evaluation

• A form for participants to evaluate the session is available in the Facilitator’s Guide.