Using a Prompt Hierarchy to Systematically Teach Young Children with Extensive Support Needs, Including Deafblindness

MARYANN DEMCHAK, PH.D., BCBA-D, LBA
UNIVERSITY OF NEVADA, RENO
NEVADA DUAL SENSORY IMPAIRMENT PROJECT
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Focus of this session

Systematic instruction and its basis as an evidence-based practice (EBP)
- Importance of EBPs

System of least prompts
- Increase your understanding of the prompting procedure
- In order that you can implement the procedure

Evidence-based Practices (EBPs)

- We are tasked with using EBPs when teaching children with disabilities
  - We have federal law that mandated scientifically-based research in adopting instructional practices
- The What Works Clearinghouse (funded by US Dept of Education) works to identify such practices
- Researchers in the field of special education have also worked to ascertain standards that should be in place to identify EBPs
  - What is quality research?
  - How much research needs to be in place to identify EBPs?

Evidence-based Practices (EBPs)

- We have a number of research articles, US Dept. of Education projects, etc. that have identified EBPs
- The intent is to have strong instructional strategies in place for children with unique learning needs
  - And those strategies should be EBPs / supported by credible research
- There is much in education that are “fads” or that are not EBPs / supported by credible research

Evidence-based Practices (EBPs)

- Courtrade et al. (2015) pulled EBPs from various sources for learners with severe disabilities
  - Included learners with various degrees of intellectual disability who MIGHT also have autism, multiple disabilities, physical disabilities, TBI, sensory impairments
  - Learners with extensive, specialized instructional needs

Which Instructional Strategies were Identified as EBPs? (Sampling)

- Systematic instruction
- Time delay (constant and progressive)
- Systematic prompting (other than time delay procedures)
  - Least-to-most prompting
  - Most-to-least prompting
- Prompting / response prompting
- Reinforcement
- Task analysis
- Discrete trial teaching
- Functional behavior assessment
- Functional communication training
- Naturalistic intervention (which includes prompting as part of the strategy)
- In vivo instruction / community-based instruction
- Visual supports
- Video modeling

What is systematic instruction?

- Research-based method of teaching learners with disabilities
- It is a defined, replicable teaching process that reflects evidence-based practices
  - Written plans
- Can be used to teach a variety of skills from academic to functional skills
- It uses learner performance data to make instructional decisions

Why is systematic instruction important?

- Learners with severe disabilities not likely to learn effectively and efficiently through trial and error / "haphazard" prompting
- Embeds EBPs: prompting, reinforcement, task analysis, discrete trial teaching
- Learners with disabilities make greater progress when taught using the process of systematic instruction

What is our ultimate goal of instruction?

Natural Cue → Behavior → Natural Consequences

The Learning Paradigm

Natural Cue → Behavior → Natural Consequences

Natural Cue	**Behavior**	**Natural Consequences**
Teacher flips lights on/off & says clean up	Children clean up	Snack at snack table

The Learning Paradigm

Natural Cue → Behavior → Natural Consequences

Natural Cue	**Behavior**	**Natural Consequences**
Paper & crayons and teacher cue to color	Color	Pattern/scribbles on paper; satisfaction of being done

The Learning Paradigm

Natural Cue → Behavior → Natural Consequences

Natural Cue	**Behavior**	**Natural Consequences**
Dirty hands	Wash hands	Clean hands

The Learning Paradigm

However, do young children with severe, multiple disabilities that include sensory impairments learn on incidental / informal basis?

The Instructional Paradigm

Natural Cue → Behavior → Natural Consequences

\+

Instructional prompts

\+

Teacher-provided consequences

The Instructional Paradigm

Natural Cue → Behavior → Natural Consequences

\+ **Instructional prompts**

\+ Teacher-provided consequences

What are examples of prompts?

The Instructional Paradigm

Natural Cue → Behavior → Natural Consequences

\+ **Instructional prompts**

\+ **Teacher-provided consequences**

Consequences for **correct** responses

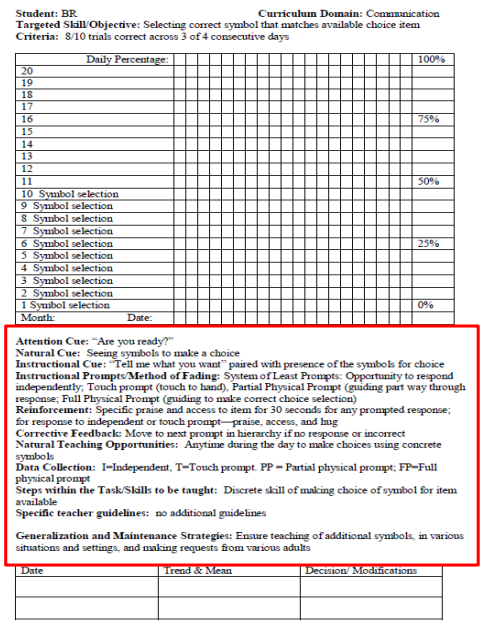
Reinforcement

Consequences for **incorrect** responses

Corrective feedback

How do we develop systematic instruction plans that incorporate instructional prompts and specific consequences?

WRITTEN PLAN WITH KEY COMPONENTS



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Corrective Feedback: Move to next prompt in hierarchy if no response or incorrect
Natural Teaching Opportunities: Anytime during the day to make choices using concrete symbols
Data Collection: I=Independent, T=Touch prompt. PP = Partial physical prompt; FP=Full physical prompt
Steps within the Task/Skills to be taught: Discrete skill of making choice of symbol for item available
Specific teacher guidelines: no additional guidelines

Generalization and Maintenance Strategies: Ensure teaching of additional symbols, in various situations and settings, and making requests from various adults

Date	Trend & Mean	Decision/ Modifications

- You have a copy of this form as a separate handout (completed sample and blank)
- Form is a combined systematic instruction teaching plan and data collection sheet
- Today we are focusing on the **lower portion: How to teach**
  - This portion identifies the components of systematic instruction
- Upper grid focuses on data-based decision-making
  - Another EBP but …
  - Beyond the scope of what we can cover today

Components of **How** to Teach

- Attention / attending cue
- Natural cue
- Instructional cue
- Instructional prompts / method of fading prompts
- Reinforcement
- Corrective feedback
- Natural teaching opportunities
- Data collection
- Steps of task / Skills to be taught
- Specific teacher guidelines
- Generalization and maintenance strategies

Attending cue

Any motion, verbal cue, or physical cue intended to gain learner attention to the task to prepare to begin the activity

Can be general or specific

Examples:

- "Are you ready?"
- "Get ready to work."
- Touching or gesturing towards work materials
- "Show me you are ready by _____"

(Attending cues are not limited to the above examples)

Why are attending cues important?

Attending cue

An attending cue is not one of your prompts

Occurs prior to beginning your actual teaching and prompting to ensure child is ready

What is our ultimate goal of instruction?

Natural Cue → Behavior → Natural Consequences

Natural cue

- A cue that naturally exists in the environment and "tells" us to perform in a certain way
- The cue or stimulus to which you want the learner to respond independently
- Natural cue is not usually sufficient for our children to learn how to perform
- Examples:
  - Dirty hands cue washing them
  - Paper and crayons in front of child on table cues coloring
  - Person in front of learner saying "Hi" cues giving a greeting in return
  - Other examples?

Importance of natural cue & pausing for learner response

- Responding to the natural cue equals independent responding
- Must allow the learner time to process and respond to the natural cue
- Often a 3-5 second pause to provide the learner an opportunity to respond independently to the presence of the natural cue

Instructional Cue

- Until the child learns the targeted skill and is responding independently, you may need to provide an instructional cue that is paired with the natural cue
- Intended to draw the learner's focus to the natural cue
- Examples:
  - Hands are dirty paired with adult saying "wash hands"
  - Paper and crayons in front of learner paired with adult saying "color"
  - Person in front of child says "hi" paired with ……
  - Seeing flashcard with numbers paired with …….
  - Seeing snack choices at snack table paired with …….
- As with natural cue allow opportunity for child to respond (i.e., pause)

The Instructional Paradigm

Natural Cue → Behavior → Natural Consequences

\+ **Instructional prompts**

\+ **Teacher-provided consequences**

Consequences for **correct** responses

Reinforcement

Consequences for **incorrect** responses

Corrective feedback

Instructional Prompts / Method of Fading

- You move to prompting when the learner does not respond to the natural cue / instructional cue
- We use specific instructional prompts to ensure that we are not teaching in a trial and error format
- Prompts provide extra assistance to teach the learner to respond accurately
- Examples of prompts?
- Prompts must be systematic
- Extensive research base supporting use of response prompting

Instructional Prompts / Method of Fading

- There are a number of specific response prompting methods that allow for systematic removal or fading of prompts
  - System of least prompts
  - Constant time delay
  - Progressive time delay
  - Most to least prompts
  - Graduated guidance
  - Simultaneous prompting

General Guidelines for Using Prompts

Provide prompts in a supportive, instructive manner

Fade prompts as soon as possible
- Should be viewed as temporary
- Fading means removing prompts (in a systematic way)

Use prompts as natural as possible

Use prompts that are non-stigmatizing

Use prompting procedures that have research-support

Follow the guidelines of the specific response prompting procedure

The Instructional Paradigm

Natural Cue → Behavior → Natural Consequences

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Corrective feedback

Reinforcement

- How will you respond when the learner responds independently, without prompts?
- How will you respond when the learner responds correctly to a prompt?

Comments about Reinforcement

- Reinforcement increases likelihood that behavior occurs in future
- Reinforcement is defined by effect on learner's behavior
- Reinforcement is idiosyncratic
- Reinforcement should be appropriate for age
- Reinforcer variation is important
  - Why?
- Initially, provide reinforcement immediately and for each behavior
  - Have a plan to move from reinforcing each and every behavior occurrence

The Instructional Paradigm

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Corrective feedback

Corrective Feedback

- Follows an error or inaccurate response
- Intended to minimize risk of children learning errors
- Provide immediately
- Should be appropriate to age
- Should be non-stigmatizing
- Often determined by prompting method
- How you will respond when the learner makes an error, does not respond correctly, or does not respond at all (i.e., no response)

Natural Teaching Opportunities

- When during the school day can / will you teach the targeted skill?
- Some skill acquisition is enhanced by teaching during natural opportunities
- Generalization and maintenance of skills can be enhanced by targeting during natural opportunities in the learner's daily routine or schedule

Task Steps or Behavior to be Taught

- Some skills will need to be task analyzed
- Other skills are discrete / single skills

Important Distinction About Skills

CHAINED RESPONSES:

Series of responses / behaviors that must be done in sequence in order for the overall skill or response to be completed

Examples?

DISCRETE SKILLS / RESPONSES:

Skills that are comprised of a single response or movement

Examples?

Task Analysis: What should you remember about breaking a chained skill into steps?

- Identify the skill to be broken down into steps (i.e., task analyzed)
- Complete the skill yourself
- Observe another doing the skill to record the steps
- Have someone follow the steps verbatim to ensure completely analyzed
- Each step should be an observable behavior
- Each step should be a unique behavior (i.e., only one behavior)

Task Analysis: Same analyses might not be the same for all learners (e.g., **some learners might need more detail**)

1. Partially tighten shoe laces
2. Pull shoe laces tight
3. Cross shoe laces
4. Tighten laces into a knot
5. Make a bow
6. Tighten bow

Taken from Cooper et al. (2020) p. 561

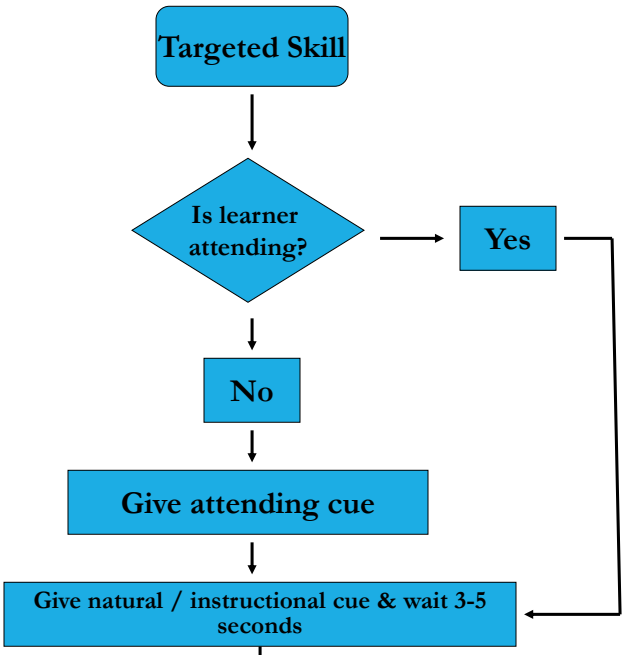
1. Pinch lace
2. Pull lace
3. Hang lace ends from corresponding sides of shoe
4. Pick up laces in corresponding hands
5. Lift laces above shoe
6. Cross right lace over left to form teepee
7. Bring left lace toward learner
8. Pull left lace through teepee
9. Pull laces away from each other
10. Continues for five additional steps

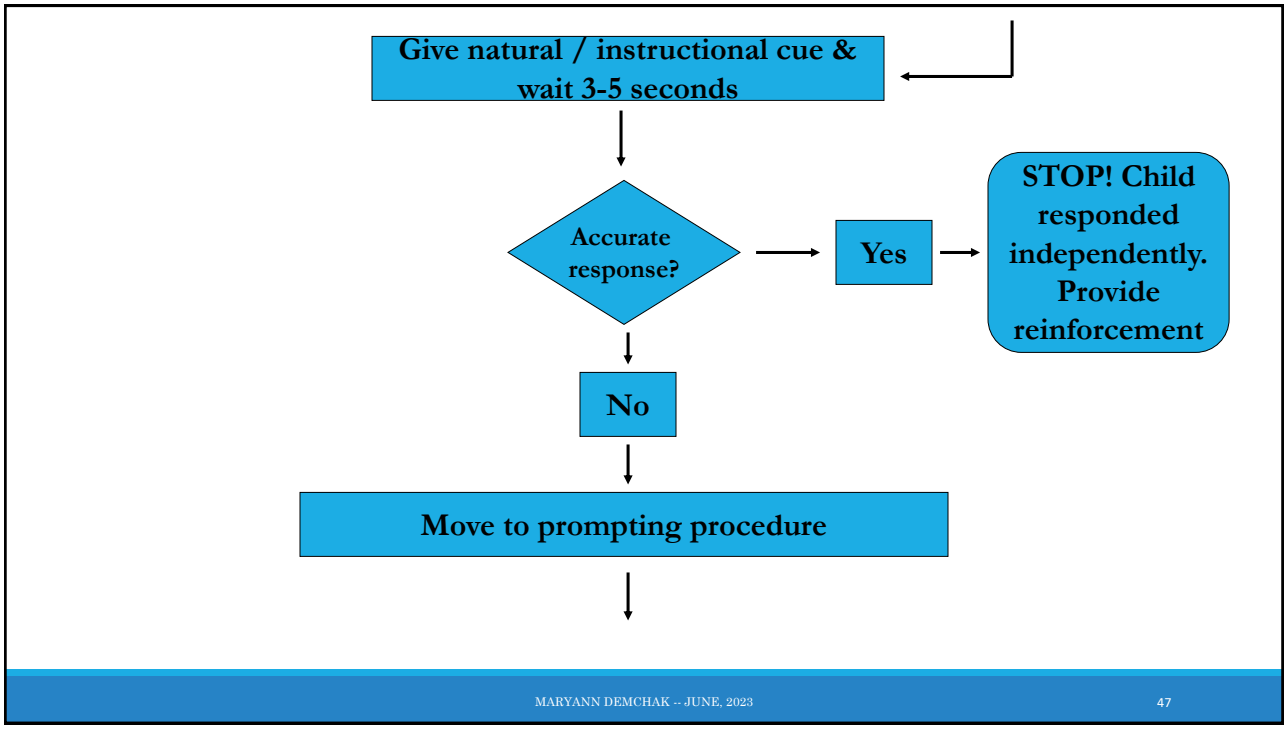
Comments on Discrete Skills

- Focusing on small, "discrete" components
- We target the specific "discrete" or small skill for instruction
- We teach systematically using response prompting
- We use reinforcement for desired behavior
- If discrete skills are taught in isolation, essential to address generalization across people, settings, materials
  - "red" – how might generalize?
  - Other examples?
- Also need a plan for skill progression

How does what we have talked about so far come together?

What do we have so far?




Give natural / instructional cue & wait 3-5 seconds
Accurate response?
Yes
STOP! Child responded independently. Provide reinforcement
No
Move to prompting procedure
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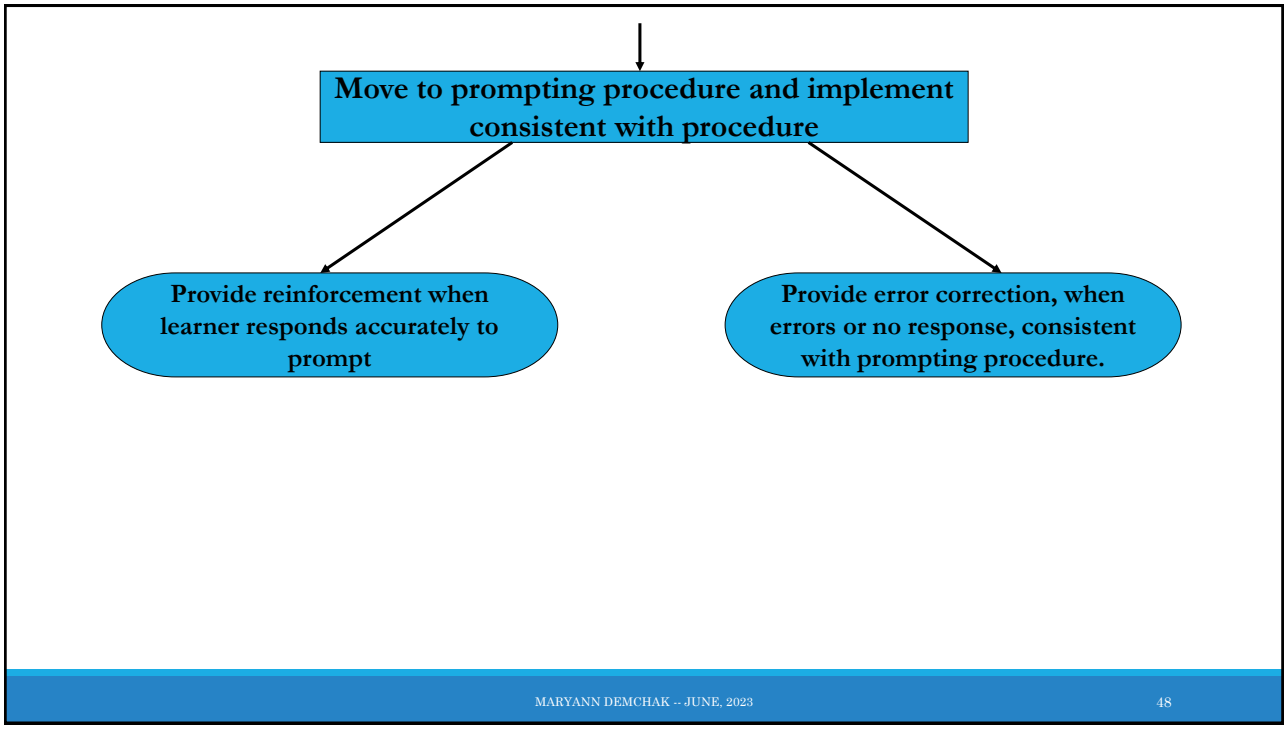
Move to prompting procedure and implement consistent with procedure
Provide reinforcement when learner responds accurately to prompt
Provide error correction, when errors or no response, consistent with prompting procedure.
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System of Least Prompts

Students Taught with System of Least Prompts

- Learners without disabilities
- Those with mild disabilities (e.g., learning disabilities)
- Those with varying degrees of intellectual disability, autism, and multiple disabilities (including sensory impairments)
- Range from preschool age through adulthood

Other Names

Known by several different names:

- System of least prompts
- Least to most prompts
- Least intrusive prompts
- Increasing assistance

All of these names refer to the same prompting procedure

Background Information

Prompts used within a specific, pre-determined prompting hierarchy or sequence

Use of a prompting hierarchy (or sequence of prompts) is based on empirical research

The intent is to have the learner respond with the least amount of assistance needed for independent and accurate responding

Important Guidelines to Understand

Begin with giving the learner an opportunity to respond independently

Prompts are arranged from least intrusive to most intrusive

- You gradually increase the amount of assistance being given by moving from the least assistance to the most assistance

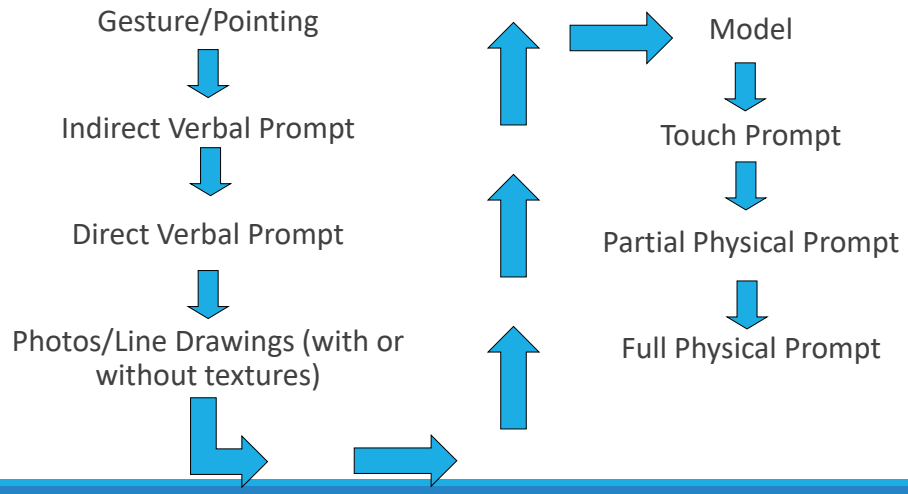
Important Guidelines to Understand

Variety of hierarchies or sequences can be used (next slide for range and order of prompts)

Specify three prompts **in advance** of teaching the learner

Final prompt in the hierarchy or sequence should be the **controlling** prompt (i.e., "guarantees" correct learner responding)

Prompts in Order of Intrusiveness



Common Prompting Hierarchy for System of Least Prompts

Response Interval

Always provide a response interval following delivery of a prompt

- Give a brief delay to allow the learner to respond
- This brief delay or response interval is the same length when –
  - Initially waiting for an independent response
  - And between each prompt in your sequence

How do you decide which three prompts to use?

Based on learner characteristics and the task

You want to be sure the learner can "access" the prompts

- One example: If a learner is not imitative, avoid using a model prompt
- Other factors to consider?

Important to Remember

Selecting prompts that a learner cannot "access" will likely result in less effective teaching

Lack of response to a prompt that cannot be "accessed" by the learner will require delivery of a more intrusive prompt

Prompting Sequence: How to Deliver the Prompts

Least Intrusive Prompt

Least intrusive prompt = the first prompt in the pre-determined hierarchy

The prompt is given ONCE and you allow the learner an opportunity to respond (3-5 seconds)

Mid-level Prompt

Mid-level prompt = the second prompt in the pre-determined hierarchy

The prompt is given ONCE and you allow the learner an opportunity to respond (3-5 seconds)

Greatest Intrusive Prompt

Greatest intrusive prompt = the third prompt in the pre-determined hierarchy

This last prompt in the hierarchy ideally "guarantees" learner success (also called a "controlling" prompt)

- Even though most intrusive in sequence, you want to provide the least amount of assistance needed to ensure correct responding

The prompt is given ONCE and you allow the learner an opportunity to respond (3-5 seconds)

Chained vs. discrete skills

If a chained skill, repeat the prompt hierarchy for each step within the chain

If a discrete skill, repeat the prompt hierarchy for each instance of the discrete behavior

Responding to Correct Responses

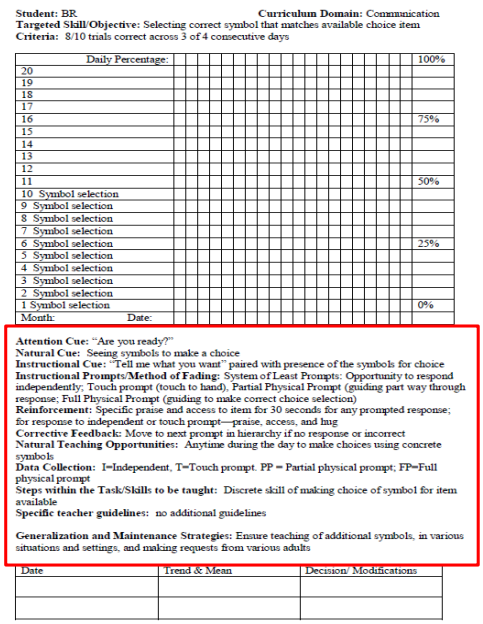
You should reinforce / praise learner responses and accuracy

- Initially, you might reinforce correct responses regardless of prompt level
- As learner acquires skill, you can move to reinforcing correct responses at a lower level of prompting
- As mastery occurs, you can reinforce only independent responses

What Happens if the Student Makes an Error or Responds Incorrectly?

Typically you respond by simply moving to the next prompt in your pre-determined hierarchy or sequence

Video Examples



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Summary

- Systematic instruction is an evidence-based practice
- Response prompting procedures are evidence-based practices
- Prompting procedure discussed today is system of least prompts
  - A hierarchy of prompts assigned in a sequence of least intrusive to most intrusive
- The prompts in the hierarchy are predetermined based on learner characteristics and the task requirements
- Using this prompting procedure can lead to increased learner success