

Teaching Sequential Skills

Participant's Manual

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October, 2010 Revision

Introduction

Welcome to the Teaching Sequential Tasks Coach's Manual. This training is designed to be used in conjunction with the Teaching Sequential Tasks DVD and the Teaching Sequential Tasks PowerPoint. It also correlates to the *Educating Students with Significant Disabilities* Curriculum. All of these materials are available from the Utah Personnel Development Center, www.updc.org.

Purpose: This booklet has been prepared for training adults in the **evidence based practices** of sequential instruction or “chaining,” task analysis, reinforcement, shaping, and prompting. It is intended for use by school district coaches working with teachers and also by teachers who wish to enhance the skills of paraprofessionals, parents and care givers.

Customizing: We anticipate the users of these materials will want to customize their use to best fit their own situations. For example, the coach/teacher may want to substitute examples given in the manual with those from his/her own experience and the experience of the participants. Also, the coach should feel free to select those sections of the training that will be beneficial to his/her specific audience. For example, steps 1, 3, 5 and 7 will have more direct relevance to certified classroom teachers rather than paraprofessionals and caregivers.

The Coaching Cycle: After guiding the participant through the manual, the coach should employ the five part coaching cycle to ensure the effective implementation of the principles. The participants should be able to demonstrate mastery of skills through role play, observed performance and the evaluation of video. Observation data collection forms are included in appendix materials.

The Coaching Cycle



In addition to this manual, there are other resources that are part of the sequential skills training. The symbols for these resources are:



Teaching Sequential Skills DVD.



Additional Sequential Skills Video Clips found on the Supplemental DVD



Teaching Sequential Skills PowerPoint found on the Resources CD or from www.updc.org



Public Domain Curricula found on the Resources CD or from www.updc.org - Resources - Significant Disabilities



Group Instructional Activity



Group Discussion



Participants' Video (If you have capability, this will be video you record during the training)

Teaching Sequential Skills

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Definition of Terms

Antecedent: The antecedent is anything that comes before a student response that causes or influences that response. This can be a question, a visual cue, a prompt, the completion of a step in the chain, or a naturally occurring event.

Backward Chain: A method of teaching a behavioral sequence in which the point of instruction and reinforcement begins with the **last** unmastered step in the sequence.

Baseline: A measure of student performance taken prior to instruction on a skill, set of skills, or behavioral chain.

Branching: When concerned with task analyses, branching refers to the process of creating a more detailed task analysis of difficult steps. For example, if a student has difficulty turning on a faucet, the instructor may add steps of “firmly gripping the faucet, turning the faucet to the left, releasing the grip on the faucet.”

Consequence: Anything that follows a student’s response that increases or decreases the likelihood of the response occurring again in the future.

Direct Instruction: A method of instruction that is explicit, systematic, and teacher-directed. This method is based on a careful analysis of different content areas to determine the sequence of skills and concepts needed to master a wide variety of academic subjects. It is structured to maximize student opportunities to respond to teacher cues and questions.

Discrete Trial Training (DTT): Discrete trial training is an instructional approach used to teach appropriate behavior and communication skills in a planned, controlled, and systematic manner. DTT is appropriate for skills that can be taught in small repeated steps. Each trial or teaching opportunity has a definite beginning and end. The use of teacher cues, rewards, and corrections is carefully planned and implemented. Positive praise and/or tangible rewards are used to increase the occurrence of desired skills or behaviors. Data collection provides teachers/practitioners with information about beginning skill level, progress and challenges, skill acquisition and maintenance, and generalization of learned skills or behaviors. (National Professional Development Center on Autism Spectrum Disorders)

Evidence Based Practices: Evidence-based practices are those that have significant and convincing measurable success. A strict standard of published, high quality research is established to determine whether a particular practice meets the level of “evidence-based.” (See “24 Evidence-Based Practices” at www.updc.org - Resources - Significant Disabilities)

Fidelity of Implementation: Fidelity of implementation refers to the delivery of instruction in the way it was designed to be delivered.

Forward Chain: A method of teaching a behavioral sequence in which the point of instruction and reinforcement begins with the **first** unmastered step in the sequence.

Generalization: The ability of a student to transfer skills learned on setting or with one individual to other settings and other individuals or to produce a variety of responses that may be appropriate (e.g., write with a pen and a pencil). When instructors teach for generalization they ensure that skills mastered in one context or social setting will transfer to other individuals and contexts. One of the most important goals of generalization relates to the transfer of skills from school to home, community and employment settings.

Prompts: Temporary assistance given to a student to facilitate the correct response. Prompts can be modeling, physical assistance, visual, textual (written or pictures), gestural (pointing), verbal (spoken), or spatial (arrangement of materials).

Naturalistic Interventions: These practices encourage specific target behaviors based on learner's interests and naturally occurring reinforcement. The format of antecedent, response, and consequence is still intact, but the environment and teacher cues are carefully designed to promote initiation, socialization, and communication. For example, a teacher may place a student's favorite toy within sight but out of reach so that the student will need to initiate a request for the toy.

Reinforcement: Reinforcement describes an association between learner behavior and a consequence that follows the behavior. If a consequence increases the probability that a behavior will occur again, it can be said to be a reinforcer. Positive reinforcement involves offering incentives to reward behavior. A **tangible reinforcer** is concrete and physical, such as a toy or a food. A **social reinforcer** is an interpersonal reward such as praise or a smile.

Sequential (chained) instruction: Chaining is an instructional procedure that involves reinforcing individual responses occurring in a sequence to form a complex behavior. It is frequently used for training behavioral sequences (or "chains") that are beyond the current repertoire of the learner.

Shaping: This is a behavioral term that refers to gradually molding or training an individual to perform a specific response (behavior) by reinforcing any responses that progressively approach to the desired response. For example, the teacher or care giver may ask a student to button a shirt beginning with shirts that have oversize buttons and gradually decreasing the size of the buttons. In another example, a student may be reinforced for giving a symbol to a teacher when the teacher is near the student and the distance between the teacher and student is systematically increased, thus increasing the behavioral expectation placed on the student.

Task Analysis: Task analysis is the process of breaking a task into smaller, more manageable steps in order to teach the task.

Time Delay: Time delay focuses on fading the use of prompts (or assistance) during the teaching of a behavioral sequence. A brief delay (such as five seconds) is provided between the initial instruction and any additional instructions or prompts. Time delays can be **constant** (e.g., always a five second delay), or **progressive** (gradually increasing the delay between the initial direction and the prompt).

Total Task Chain: A method of teaching a behavioral sequence in which the point of instruction and reinforcement is spread throughout the chain.

What Are Sequential Tasks?

Four evidence-based instructional practices commonly used with students who have autism or significant cognitive disabilities are:

Discrete Trial Training

Direct Instruction

Naturalistic Interventions

Sequential Task Instruction (Task Analysis and Chaining)



DISCUSSION: Read the definitions of the four practices listed above and discuss how they could each be used in educating your students. Which ones do you use most often. Why? What is the greatest difference between discrete trial and sequential task instruction?



ACTIVITY

Determine which of the above instructional practices might be used for the following situations:

1. The teacher conducts a science unit on objects that sink or float for a small group of students with significant cognitive disabilities. As the teacher places objects in the water, she gives the students a signal to respond “sink” or “float” using words, symbols or augmentative communication device.

- | | |
|----------------------------|------------------------------|
| a. discrete trial training | b. direct instruction |
| c. sequential instruction | d. naturalistic intervention |

2. The teacher instructs a student in matching cards sets of three and sets of four. A card with a set of three objects and a card with a set of four objects are on the desk. The teacher holds up a card with three or four objects and says “match.” The student matches the cards to correct set.

- | | |
|----------------------------|------------------------------|
| a. discrete trial training | b. direct instruction |
| c. sequential instruction | d. naturalistic intervention |

3. The teacher instructs a student in the multiple steps of coming into the classroom, putting away his coat and backpack, and going to his seat.

- | | |
|----------------------------|------------------------------|
| a. discrete trial training | b. direct instruction |
| c. sequential instruction | d. naturalistic intervention |

4. The student’s goal is to ask another person for help. When the student has earned a favorite toy as a reinforcer, the teacher hands it to the student in a jar with a lid that the student is unable to open. The teacher provides the verbal prompt, “help,” and when the student repeats “help,” she opens the bottle.

- | | |
|----------------------------|------------------------------|
| a. discrete trial training | b. direct instruction |
| c. sequential instruction | d. naturalistic intervention |



ACTIVITY

Understanding the importance of sequential skills training

In a one-minute timing, write as many things that you can think of that you typically do in a day that are discrete tasks.

Total _____

In a one-minute timing, write as many things that you can think of that you typically do in a day that are sequential activities?

Total _____



DISCUSSION: What does this activity demonstrate about the importance of learning sequential tasks?

Getting Started

Before beginning the training, watch the Sequential Skills DVD.



Two Questions to Address Before Beginning Sequential Instruction.

1. Is a formal program in sequential instruction really needed?
2. Does the student have the prerequisite skills?

Is a formal program in sequential instruction really needed? The sequential tasks training process requires time to set up and time and attention to implement. Teachers will want to be judicious in selecting the skills taught in this manner. Many behavioral chains can be taught by modeling or by an “I do it - We do it - You do it” progression and won’t require a formal program. Also, teachers will want to reserve the most systematic instruction for tasks that are functional enough to merit it – tasks the student will use frequently in school, home or community. It will often be an IEP team decision to begin sequential task training.

Does the student have the prerequisite skills? Does the student have the foundation skills that may be needed for success in the instruction? Sometimes, it is only after a program has been attempted and the student has been unsuccessful that the staff realize a critical skill is missing. Look carefully at foundation skills before beginning the program.



SUPPLEMENTAL VIDEO: **Lining up**



DISCUSSION: The teacher is using modeling to teach lining up. When might you use a formal program to teach this task? What tasks can you teach at home and in the classroom using “I do it - We do it - You do it?” What tasks need more systematic instruction?

Steps in Teaching Sequential Tasks

7 Steps for Teaching Sequential Skills

The seven steps of teaching sequential skills are:

1. Perform a task analysis.
2. Take baseline data.
3. Determine if the skill will be taught in a forward, backward, or total task presentation.
4. Determine a plan for fading prompts.
5. Set up the data collection system and schedule.
6. Use evidence-based instructional strategies to teach the task, including reinforcement, error correction and shaping
7. Use data for problem solving. Determine if “branching,” increased prompting; increased reinforcement, or extra practice outside the chain is needed.

STEP 1: Perform a Task Analysis



SUPPLEMENTAL VIDEO CLIP

Review Dr. Hofmeister’s narration on task analysis

CREATING THE TASK ANALYSIS

The three steps to creating a task analysis are:

1. Perform the task or observe a capable person performing the task and record each step.
2. Customize the task analysis to meet the capabilities and skill level of the student. Depending on the student's skill level and experience you may have more or fewer steps.
3. Write the customized task analysis down on the data collection form. (see Sequential Task Data Form, appendix, page 34)
4. Consider student goals such as discrete trial goals that can be embedded into the sequential task.

After reviewing Dr. Hofmiester's narration on task analysis, discuss these questions:



DISCUSSION QUESTIONS

1. If the nature and number of steps depends on the student responses, how do you know if the student's responses are improving?
2. Discuss the importance of regular scheduling of the sequential task. Why should these tasks be done daily?
3. What is the importance of performing the task in varied contexts and with different instructors?



ACTIVITY

Compare these two task analyses of hand washing. Which one might you use for a more capable student; a less capable student?

<p style="text-align: center;">Hand Washing</p> <p style="text-align: center;">Task Analysis #1</p>	<p style="text-align: center;">Hand Washing</p> <p style="text-align: center;">Task Analysis #2</p>
<p>Exit the bathroom stall</p> <p>Walk to the sink</p> <p>Turn on the cold water</p> <p>Turn on hot water</p> <p>Wet hands</p> <p>Put left hand under soap dispenser</p> <p>Push soap dispenser with right hand</p> <p>Rub hands together to lather</p> <p>Put hands in running water</p> <p>Move hands under running water to remove all soap</p> <p>Turn off hot water</p> <p>Turn off cold water</p> <p>Go to towel dispenser</p> <p>Pull towel dispenser lever with right hand</p> <p>Tear off towel with left hand</p> <p>Rub towel on hands to dry</p> <p>Throw paper towel in waste container</p>	<p>Exit the bathroom stall</p> <p>Turn on water</p> <p>Wet hands</p> <p>Apply soap</p> <p>Rub hands together to lather</p> <p>Rinse hands</p> <p>Turn off water</p> <p>Get paper towel</p> <p>Dry hands</p> <p>Throw paper towel in waste can</p>

Task Analysis: **“I Do It.”** Use the example given (write first name, page 15) or your own example to demonstrate creating a task analysis and filling out the task analysis part of the Sequential Tasks Data Sheet (appendix, page 34)

Task Analysis: **“We Do It.”** Use an example applicable to a student known by the participants to complete a task analysis together.



Task Analysis: **“You Do It.”**



Sequential bag activity. Using the objects in the bag, come up with a sequential activity. Create a task analysis and write it down on the Sequential Task Data Form. (Alternately, you may have the participants create a task analysis and perform the following activities for specific students they are working with and for goals that might apply to that specific student).

Sequential Tasks Data Sheet



Name *Annie*

Task *Write Name*

#	Goal: <i>When given seatwork papers, Annie will write her first name legibly 9 out of 10 opportunities.</i>	Baseline	Dates / Data										Rewards/ Corrections
Step													
1	<i>Position paper correctly</i>												
2	<i>Get pencil</i>												
3	<i>Hold pencil correctly</i>												
4	<i>Find "Name" on paper</i>												
5	<i>Write "A" legibly</i>												
6	<i>Write "n" legibly</i>												
7	<i>Write "n" legibly</i>												
8	<i>Write "i" legibly</i>												
9	<i>Write "e" legibly</i>												

Circle One:
 Backwards Chain Forward Chain

Total Task Chain
 Data Collection Schedule:
 Skills to teach outside the sequence:

Notes:

#	Plan for Fading Help 1 = least 4= most	
+	Independent (counts 0)	0 Time Delay
1		_____ Time Delay
2		_____ Time Delay
3		_____ Time Delay
4		
5		

STEP 2: Acquire Baseline Information

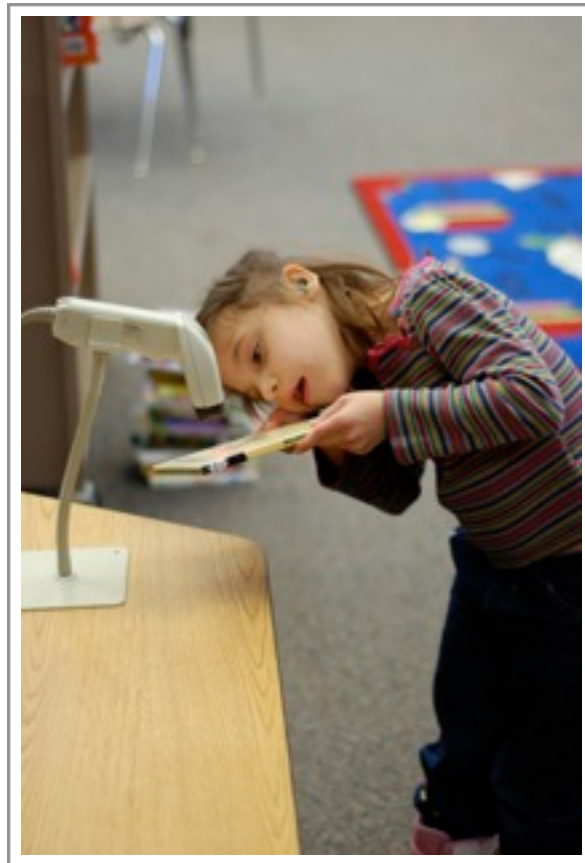
After you have created the task analysis, assist the student in performing the task. Provide as little help as possible but do not allow the student to perform errors or become frustrated. Start with the smallest prompt (gesture, partial physical) and supply more only if needed. Record the prompt levels needed. This information will help you establish your prompt fading strategy and chaining strategy.

IDo It - Use the example given (writing first name) or your own example to demonstrate taking and recording baseline data.



VIDEO: “We Do It.” If possible, role-play a sequential task and record the baseline performance on the data sheet.

VIDEO: “You Do It.” Using the materials in the bag, have the participants video tape role-play taking baseline data on the skills generated by their task analysis.



Sequential Tasks Data Sheet



Name *Annie*

Task *Write Name*

#	Goal: <i>When given seatwork papers, Annie will write her first name legibly 9 out of 10 opportunities.</i>	Baseline	Dates / Data										Rewards/ Corrections
Step													
1	<i>Position paper correctly</i>	S											Baseline - Position right side up
2	<i>Get pencil</i>	G											Baseline - Point to pencil
3	<i>Hold pencil correctly</i>	FP											
4	<i>Find "Name" on paper</i>	G											
5	<i>Write "A" legibly</i>	PP VP											Baseline - Physical and verbal
6	<i>Write "n" legibly</i>	FP VP											Baseline - Full physical and verbal
7	<i>Write "n" legibly</i>	FP VP											Same
8	<i>Write "i" legibly</i>	PP VP											Partial Physical - start the "i" going down
9	<i>Write "e" legibly</i>	FP VP											Baseline - Full physical and verbal

Circle One:
 Backwards Chain Forward Chain

Total Task Chain
 Data Collection Schedule:
 Skills to teach outside the sequence:

Notes:

#	Plan for Fading Help 1 = least 4 = most	
+	Independent (counts 0)	0 Time Delay
1		Time Delay
2		Time Delay
3		Time Delay
4		
5		

FP= Full Physical Prompt FV = Full Verbal T = Textual
 PP = Partial Physical Prompt PV = Partial Verbal FM = Full Model
 G = Gesture S = Spatial PM = Partial Model

STEP 3: Choose Forward, Backward, or Total Task



DVD: Review chapter on Forward, Backward, and Total Task

We Do It- Determine the type of chaining to use on the handwriting example. Mark it on the Sequential Skills Data Form (page 34).



PowerPoint: **“We Do It.”** Review section on forward, backward and total task chaining in the powerpoint and ask students to identify the type of chain being used.



Have participants read the following *Educating Students with Significant Disabilities* Program sections

Eating and Drinking - “Method for Teaching These Skills”

Dressing Skills - “Methods for Teaching These Skills”



Activity: **“You Do It.”** Have participants decide which type of chain to use on the bag activity.



Forward, Backward and Total Task

In all chaining types we guide the student from the _____ step to the _____ step.



When the point of instruction and reinforcement begins with the first step in the chain we are using a _____ chain.



When the point of instruction and reinforcement begins with the last step in the chain we are using a _____ chain.



When the point of instruction and reinforcement is spread throughout the chain we are using a _____ chain.

STEP 4: Add Plan to Reduce Assistance (Prompts)



DVD: Review Chapter on Prompts and Prompt Fading



DISCUSSION: Discuss the reasons for writing the prompt fading plan down on your sequential lesson plan.



SUPPLEMENTAL VIDEO: “**Reduced Verbal Prompting.**” Watch the clip and discuss how the teachers are avoiding using verbal prompts.



POWERPOINT: Review information on time delay on the powerpoint and in the definitions. Demonstrate using time delay in the name writing task (or another task of your choosing).



ACTIVITY: Write your plan for prompt fading for your Sequential Bag Task on the Sequential Tasks Data Form (page 34).



PARTICIPANT VIDEO: Video record or role-play participants doing the sequential activity with reduced verbal prompts. Video record or role play the your activity again showing how you might reduce prompts.

Prompts

Match the definitions to the correct terms

A. Physical prompting from another person such as guiding a person's hand

C. Written information or pictures

E. Arranging materials to highlight the correct response

F. Using some action like pointing to cue the learner

B. Spoken cues are given to a student

D. The student copies the actions of another person performing the desired behavior

Modeling _____

Spatial _____

Manual (Physical)

Textual _____

Verbal _____

Some important considerations to remember when providing and reducing assistance are:

When possible, avoid verbal prompts as they are more difficult than other types to fade. When possible, use visual or spatial prompts. However, verbal prompts may be useful when teaching the student to label the steps.

If the student is not responding to the natural cue, see if there is something you can do to make the natural cue more noticeable. For example, if the student does not recognize his/her name when hanging up coat and backpack add a photo or enlarge the name.

Unless the instructor is the natural cue for a response, try to prompt the student from behind so that the instructor's presence does not become a part of the chain.

Prompt the student to pay attention to the natural cues. If the student is not responding to the natural cue, draw his/her attention to it **before** prompting the response.

Time delay is a method for reducing prompts. Establish the number of seconds the instructor will wait before giving the prompt. The time delay can be one set time (constant) or progressively increased (progressive). Some students will need extra time to process information and plan responses, other students will be more impulsive and make errors if given too much time. Time delays that are too long may cause the student to forget the sequence of steps or to become distracted.

As students master steps, the instructor will want to fade his/her proximity as well as the intensity of the prompts. Increase distance from the student but remain close enough to help when needed.

Sequential Tasks Data Sheet

Name *Annie*

Task *Write Name*

#	Goal: <i>When given seatwork papers, Annie will write her first name legibly 9 out of 10 opportunities.</i>	Baseline	Dates / Data										Rewards/ Corrections	
Step														
1	<i>Position paper correctly</i>	S												<i>Baseline - Position right side up</i>
2	<i>Get pencil</i>	G												<i>Baseline - Point to pencil</i>
3	<i>Hold pencil correctly</i>	FP												
4	<i>Find "Name" on paper</i>	G												
5	<i>Write "A" legibly</i>	PP VP												<i>Baseline - Physical and verbal</i>
6	<i>Write "n" legibly</i>	PP VP												
7	<i>Write "n" legibly</i>	PP VP												
8	<i>Write "i" legibly</i>	PP VP												
9	<i>Write "e" legibly</i>	PP VP												
Totals														

Circle One:
 Backwards Chain Forward Chain

Total Task Chain
 Data Collection Schedule:
 Skills to teach outside the sequence:

Notes:

#	Plan for Fading Help 1 = least 4= most	
+	Independent (counts 0)	
1	<i>Spatial</i>	<u>3 sec</u> Time Delay
2	<i>Gestural</i>	<u>3 sec</u> Time Delay
3	<i>Partial Physical</i>	<u>3 sec</u> Time Delay
4	<i>Full Physical</i>	<u>3sec</u> Time Delay
5	<i>Physical & Verbal</i>	<u>3sec</u> Time Delay

FP= Full Physical Prompt
 PP = Partial Physical Prompt
 G = Gesture

FV = Full Verbal
 PV = Partial Verbal
 S = Spatial

T = Textual
 FM = Full Model
 PM = Partial Model

STEP 5: Set Up a Data Collection System

Determine who will collect the data and how frequently you will schedule it. The Sequential Tasks Data Sheet allows you to assign a numeric value for each prompt. While it may be difficult to assign values perfectly, you will generally assign a higher numeric value to a stronger prompt and a lesser numeric value to a milder prompt. Thus, a full physical prompt may have a value of “5,” while a gesture may have a value of “1,” with other values assigned in between. The “TOTAL” value for the day will inform the teacher how close the student is coming to approaching a “0” value—or totally independent performance.



ACTIVITY: Using previously recorded video of the teacher guiding the student through two sessions of the Sequential Bag tasks, record the data from both sessions.

Total the scores. Is the total score smaller on the second session? How can this information be useful for teachers and caregivers?

Collecting Probe Data: Periodically collect probe or test data. In this condition, the student is asked to preform the task without instruction, assistance, or artificial reinforcement. This will show how well the student can perform the task under natural conditions. This data can often be revealing. The student may be able to perform better than the staff had expected and, often, unnecessary assistance can be reduced. Record the instructional data and probe data on the same form. We suggest using a different symbol to represent the probe data. When graphing the data, do not connect lines between instructional data and probe data. Note how probe data is recorded on the sample data sheet and graphs (pages 24 and 30). See more information on probe data the PowerPoint section on data collection.

Sequential Tasks Data Sheet



Name *Annie*

Task *Write Name*

#	Goal: <i>When given seatwork papers, Annie will write her first name legibly 9 out of 10 opportunities.</i>	Baseline	Dates / Data							Rewards/ Corrections
			Spatial	Sept 28	Oct 5	Oct 12	Oct 19	Oct 26	Nov 4	
	Step									
1	<i>Position paper correctly</i>	S	1	1	+	+	+	+	+	Baseline - Position right side up
2	<i>Get pencil</i>	G	1	1	+	+	+	+	+	Baseline - Point to pencil
3	<i>Hold pencil correctly</i>	FP	4	4	4	4	5	4	4	
4	<i>Find "Name" on paper</i>	G	1	1	1	1	+	+	+	
5	<i>Write "A" legibly</i>	PP VP	3	3	3	3	+	+	+	Probe - increase time delay - 5 seconds
6	<i>Write "n" legibly</i>	FP VP	4	4	4	4	5	4	4	
7	<i>Write "n" legibly</i>	FP VP	4	4	4	4	5	4	4	
8	<i>Write "i" legibly</i>	PP VP	3	3	3	3	+	+	+	Probe - increase time delay to 5 seconds
9	<i>Write "e" legibly</i>	FP VP	4	4	4	4	5	4	4	
	Totals	27	25	25	23	23	20	16	16	

Circle One:
 Backwards Chain **Forward Chain**

Total Task Chain
 Data Collection Schedule: *Once a week*
 Skills to teach outside the sequence:
Find the word "name"
 Notes: *Use Sensible Pencil verbal prompts - ALL staff use the same prompts*

#	Plan for Fading Help 1 = least 4= most	
+	Independent (counts 0)	
1	<i>Spatial</i>	3 sec Time Delay
2	<i>Gestural</i>	3 sec Time Delay
3	<i>Partial Physical</i>	3 sec Time Delay
4	<i>Full Physical</i>	3sec Time Delay
5	<i>Did not perform</i>	3sec Time Delay

FP= Full Physical Prompt
 PP = Partial Physical Prompt
 G = Gesture

FV = Full Verbal
 PV = Partial Verbal
 S = Spatial

T = Textual
 FM = Full Model
 PM = Partial Model

STEP 6: Teach Skills



DVD: Review the chapter, “Instructional Strategies”



POWERPOINT: Review the sequential teaching strategies:

- a. Reinforcement
- b. Error Correction
- c. Shaping

a. Reinforcement: Use natural reinforcement where possible. If extra reinforcement is needed, use observation or reinforcement surveys to determine reinforcers that are strong enough to motivate the student. **Remember, if extra reinforcement is added, it will need to be faded out.**

Without adequate reinforcement, your instruction will not be successful. Spend time conducting a reinforcer survey to determine what works best for your student.

A **tangible reinforcer** is concrete and physical, such as a toy or a food. A **social reinforcer** is an interpersonal reward such as praise or a smile.

Generally, we want to move students away from tangible reinforcers and on to social reinforcers. Social reinforcement has been found to be most effective when the teacher or caregiver follows the rules of **I–FEED–V** (from Least Restrictive Behavioral Interventions Utah State Office of Education www.usu.edu/teachall/text/behavior/LRBI.htm)

I – Immediate - Praise is most effective when given immediately after the behavior the instructor wants to see increased.

F – Frequent - The ratio of positive to negative statements should be at least 4:1.

E – Eye Contact - Give eye contact with the verbal praise. Mean it!

E – Enthusiastic - Be genuinely excited about improved performance.

D – Descriptive - Tell the child exactly what he/she did that you are praising. “That was great writing an ‘A!’” Not “Good job.”

V – Varied - Don’t use the same phrases, put some variety into your praise.

b. Error Correction:



DVD: Review the Chapter on Error Correction. Notice that the three steps for error correction are: **STOP** (stop the student as soon as the error is made), **BACKSTEP** (go back to the last correctly performed step in the chain), **HELP** the student perform the step correctly. If possible, repeat the task as soon as possible and use enough help to prevent the error from occurring again. Sometimes, when you backstep, you might have to replace the cues from the last step, such as replacing the cafeteria tray if it was dropped. If possible, repeat the segment of the chain or the entire task.



DISCUSSION: In the video example in the cafeteria, during the error correction procedure, the teacher does not prompt the student to go all the way to the door. Can you think of a reason for the teacher choosing to only go part of the way to the door?

c. Shaping

“Shaping” is a very powerful strategy that refers to reinforcing the student for coming successively closer to the target behavior. Begin wherever your student is – his/her present level of ability. When the student performs the behavior just a little closer to the target, he/she is reinforced. The expectation is then raised and the student is reinforced for coming a little closer to the target. We see this with toddlers. When a child takes his first step, we give enthusiastic praise. Then we give more praise for two step, and then three. Shaping is essentially taking baby steps toward the target behavior.



Educating Students with Significant Disabilities Programs. Read *Eating And Drinking* - “Drinking with a straw” and *Dressing Skills* - “How to Make Dressing Easier”



DVD: Prompting Chapter - Kicking the playground ball. Notice in this segment of the video that the student is asked to kick a large playground ball. The next time the ball is smaller, and the next time even smaller. The student is being “shaped” to kick a smaller playground ball.

“**I Do It.**” Using the example or one of your choice, demonstrate how you would backstep a student who makes an error in the chained behavior.

“**We Do It.**” Have one of the participants role-play backstepping when you play the student.



PARTICIPANT VIDEO: “You Do It.” Have the participants practice with teaching the sequential bag task using I–FEED–V rules for effective praise (See explanation of I–FEED–V on page 25). Also the “student” will make errors in several places in the chain and the “teacher” will demonstrate backstepping. Finally, show a way you might be able to incorporate shaping into your instruction.

STEP 7: Problem Solving

Problem solving in this context refers to an examination of data or teacher observation that shows the student making inadequate progress toward the goal. Careful data collection and graphing are essential to this step. (See sample graph, appendix, page 29). Dr. Hofmeister spoke of two strategies for improving student performance, **branching** and **increased prompts**. Teachers and caregivers may also want to consider increasing the **reinforcement**. Another strategy that is sometimes employed is **extra practice outside the chain**. CAUTION! Remember there are two dimensions for teaching chained behavior – the skills themselves and performing them in the correct order. If the task is taken out of the chain, this order will not be established. On the other hand, the research suggests that by taking very difficult steps out of the chain and practicing them, the frustration felt by the student is reduced. Also, by taking the task out of the chain, it may be possible to greatly increase the number of trials the student receives to practice the correct response.



SUPPLEMENTAL VIDEO CLIP: “Find name.” In this video, finding your name on the coat racks is a part of the morning routine. One student was having difficulty with the task so the teacher included extra practice on name identification in the daily routine.

In our name writing example, the teacher may want to practice correct grasp on a pencil outside the chain. She may also practice the formation of difficult letters in isolation.



ACTIVITY: Look at your task analysis for the sequential bag activity. Are there any steps of the program that might be lifted from the chain and practiced independently?

Sequential Tasks Data Sheet

Name *Annie*

Task *Write Name*

#	Goal: <i>When given seatwork papers, Annie will write her first name legibly 9 out of 10 opportunities.</i>	Baseline	Dates / Data							Rewards/ Corrections
			Sept 21	Sept 28	Oct 5	Oct 12	Oct 19	Oct 26	Nov 4	
	Step									
1	<i>Position paper correctly</i>	S	1	1	+	+	+	+	+	Baseline - Position right side up
2	<i>Get pencil</i>	G	1	1	+	+	+	+	+	Baseline - Point to pencil
3	<i>Hold pencil correctly</i>	FP	4	4	4	4	5	4	4	
4	<i>Find "Name" on paper</i>	G	1	1	1	1	+	+	+	
5	<i>Write "A" legibly</i>	PP VP	3	3	3	3	+	+	+	Probe - increase time delay - 5 seconds
6	<i>Write "n" legibly</i>	FP VP	4	4	4	4	5	4	4	
	<i>Write "n" legibly</i>	FP VP	4	4	4	4	5	4	4	
	<i>Write "i" legibly</i>	PP VP	3	3	3	3	+	+	+	Probe - increase time delay - 5 seconds
9	<i>Write "e" legibly</i>	FP VP	4	4	4	4	5	4	4	
	Totals		27	25	23	23	20	16	16	

Step 1 Task Analysis

Step 2 Baseline Data

Step 7 Summarize Data

Step 5 Data Collection

Step 3 Type of Chain

Step 4 Plan for Fading Prompts

Circle One:
 Backwards Chain **Forward Chain**

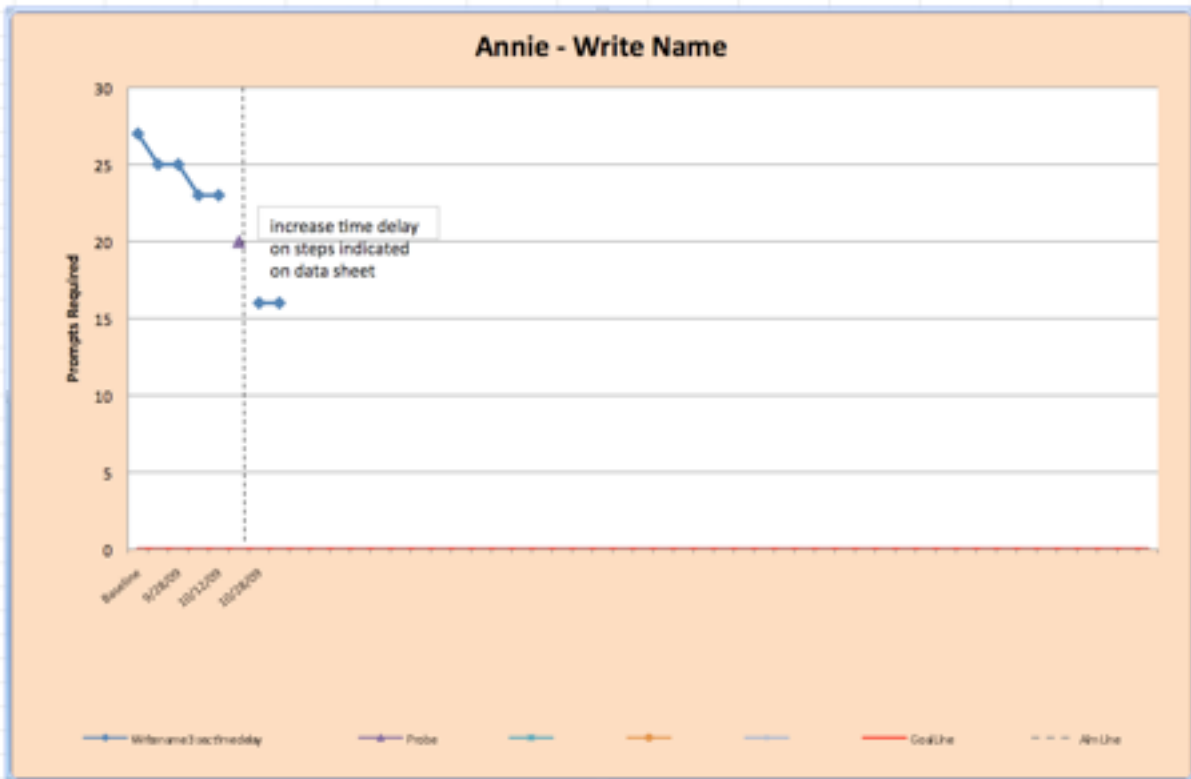
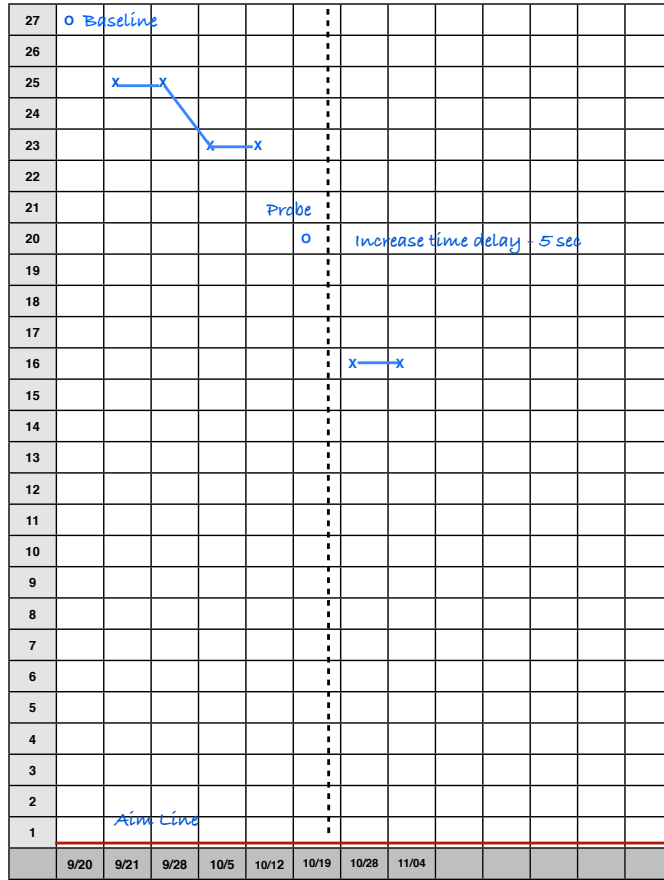
Total Task Chain
 Data Collection Schedule: *Once a week*
 Skills to teach outside the sequence:
Find the word "name"
 Notes: *Use Sensible Pencil verbal prompts - ALL staff use the same prompts*

#	Plan for Fading Help 1 = least 4 = most	
+	Independent (counts 0)	
1	<i>Spatial</i>	3 sec Time Delay
2	<i>Gestural</i>	3 sec Time Delay
3	<i>Partial Physical</i>	3 sec Time Delay
4	<i>Full Physical</i>	3 sec Time Delay
5	<i>Did not perform</i>	3 sec Time Delay

FP= Full Physical Prompt
 PP = Partial Physical Prompt
 G = Gesture

FV = Full Verbal
 PV = Partial Verbal
 S = Spatial

T = Textual
 FM = Full Model
 PM = Partial Model



Graph created with Progress Monitoring Focus by Devin Healey, a free program available at www.updc.org/assessment/

Teaching Sequential Tasks Utilizing Technology

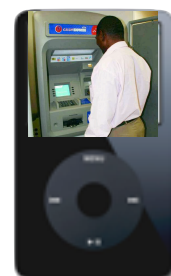
A few examples of using technology to teach sequential tasks are

1. Video Modeling: Video modeling is an evidence based practice in which the student watches himself/herself or another person performing the target skill on a video recording. When we record the student performing the skill we prompt him/her through the activity, then edit out the prompts. The student sees himself/herself performing the skill. This not only teaches the skill but improves the student's self-efficacy or belief in his/her own abilities. For in depth instruction in video modeling we recommend [Success Stories: Using Video Stories to Connect, Communicate, and Create True Success with Your Students](#) by Jessica Roberts.

2. Bluetooth headset prompts. For older students, especially those performing vocational or community tasks, a new strategy is to verbally prompt the student via a mobile phone bluetooth. A staff member is located within sight of the student and uses a cell phone to give the verbal prompts that the learner receives via a bluetooth that connects to the students cell phone.



3. iPod prompted sequential tasks. The teacher records the steps to the task on a iPod. The student wears earphones and listens to the steps. The iPod will direct the student when to hit "pause" and complete the step, then continue listening.



Teaching Sequential Tasks

Appendix



Sequential Tasks Data Sheet



Name _____ Task _____

#	Goal	Baseline	Dates / Data										Rewards/ Corrections
	Step												
	Totals												

Circle One:
 Backwards Chain Forward Chain
 Total Task Chain
 Data Collection Schedule:
 Skills to teach outside the sequence:
 Notes:

#	Plan for Fading Help 1 = least 4= most	
+	Independent (counts 0)	(optional) 0 Time Delay
1		___ Time Delay
2		___ Time Delay
3		___ Time Delay
4		___ Time Delay
5		___ Time Delay

FP= Full Physical Prompt FV = Full Verbal T = Textual
 PP = Partial Physical Prompt PV = Partial Verbal FM = Full Model
 G = Gesture S = Spatial PM = Partial Model

Cover Sheet for Sequential Task / Written Instruction Program Template

Student: _____ Month/Year: _____

Objective and mastery criterion (may include independence, accuracy and fluency [speed]): Functional Association: (Describe in functional terms where the lesson is heading)	Reinforcement: Type of reinforcer: Schedule of reinforcement:
Program Steps: See attached task analysis sheet <input type="checkbox"/> Forward Chain <input type="checkbox"/> Backward Chain <input type="checkbox"/> Whole Task Student Responses: See attached task analysis sheet	Error Correction: Stop. Backstep. Prompt. Record if error is failure to initiate, inattention to cue or incorrect response (If error is inattention to cue, problem solve for responding to natural cue. Also consider increased reinforcement, additional prompts pre-correction/pre-rehearsal or additional massed practice outside the chain)
Location/Setting:	Criteria for Moving to Next Step:
Materials Needed:	Prompt Fading Procedures: See attached task analysis sheet Prompt fading procedures Least to most prompts Time Delay
Instruction/Cue/SD: Naturally occurring SD for the behavior:	Generalization – Stimulus Factors: Generalization – Response Factors:
Student goals to embed within the sequential task: Tasks to practice outside the chain:	Special Considerations:

Cover Sheet for Sequential Task / Written Instruction Program Template

Student: *Annie*Month/Year: *January 2010*

<p>Objective and mastery criterion (may include independence, accuracy, and fluency [speed]): <i>When given seatwork papers, Annie will write her first name legibly 9 out of 10 cons. opportunities.</i></p> <p>Functional Association: (Describe in functional terms where the lesson is heading)</p> <p><i>During homeroom seatwork</i> <i>During class instruction</i> <i>Signing in for after-school program</i></p>	<p>Reinforcement:</p> <p>Type of reinforcer: <i>Social reinforcement / praise</i> <i>Tokens for free time</i></p> <p>Schedule of reinforcement: <i>Social after every difficult step. Token given after writing her name.</i></p>
<p>Program Steps: See attached task analysis sheet</p> <p><input type="checkbox"/> Forward Chain <input type="checkbox"/> Backward Chain <input type="checkbox"/> Whole Task</p> <p>Student Responses: See attached task analysis sheet</p>	<p>Error Correction:</p> <p>Stop. Backstep. Prompt. <i>Stop Annie immediately when letter written incorrectly. Go back to letter before error, prompt correct letter formation</i></p> <p>Record if error is failure to initiate, inattention to cue or incorrect response (If error is inattention to cue, problem solve for responding to natural cue. Also consider increased reinforcement, additional prompts pre-correction/pre-rehearsal or additional massed practice outside the chain)</p> <p><i>Annie has extra trouble with the "e." Practice the "e" with occupational therapist outside the chain. Use fun activities to practice the "e."</i></p>
<p>Location/Setting: <i>Special Ed classroom, Homeroom</i></p>	<p>Criteria for Moving to Next Step: <i>Independence for 3 days on each step of the chain.</i></p>
<p>Materials Needed: <i>Variety of paper and handwriting implements.</i></p>	<p>Prompt Fading Procedures: See attached task analysis sheet</p> <p>Prompt fading procedures Least to most prompts Time Delay <i>3 second time delay strategy - then deliver the "controlling prompt."</i> <i>Determine controlling prompt (least necessary prompts) during baseline and probes.</i></p>

<p>Instruction/Cue/SD: <i>Point to the word "name" on the paper to highlight the natural cue paired with the instructor's verbal directions, "Write your name," given to Annie or to small group. Fade to presence of paper with "Name" written on it.</i></p> <p>Naturally occurring SD for the behavior: <i>Presence of work sheet with "Name" written on it.</i></p>	<p>Generalization – Stimulus Factors: <i>Varied settings -Special Education classroom, homeroom, after-school program</i></p> <p>Generalization – Response Factors: <i>Varied writing implements and surfaces (marking pens, construction paper, etc.)</i></p>
<p>Student goals to embed within the sequential task: <i>Following one step verbal directions within 5 seconds</i> <i>Personal information - Saying her full name. When finished, ask "What is your name?"</i></p> <p>Tasks to practice outside the chain: <i>When working on sight words, practice reading the word "name."</i> <i>Work on forming the letter "e" outside of the chain.</i></p>	<p>Special Considerations: <i>Annie has more difficulty writing when she is tired. Instruct in this program more frequently in the morning when she has more energy</i></p>

Coaching Interaction-Observation

Teacher: _____ Date: _____ Time: _____

Observer: _____ Activity: _____

Pre-conference/Planning		
	Identify student outcome / lesson objective	Notes
	Identify teacher learning goal / standard	
	Review data form being used	
	Answer questions	
	Ask: Aside from the behaviors on the observation form, what would you like me to focus on during the observation?	
Conduct Observation		
	Gather data using appropriate observation form	Notes
	Calculate data value	
Post Conference - Feedback session		
	Ask: What patterns do you see in the data?	Notes
	Ask: What do you think the greatest area of need is for you and/or your students?	
	Discuss next steps . . . set goal with teacher	
	Ask: How can I help you with your goal?	
	Set up follow up plan and meeting	
	Next steps for teacher	
	Next steps for coach	

Based on observation & coaching interaction, consider the following
 Technical Assistance (Consider Significant Seven)

- IEP Package (Assessment, Alignment, Implementation)
- Discrete Trial / Naturalistic Learning
- Small Group Direct Instruction
- Sequential Task Instruction
- Classroom Management and Organization
- Data Driven Decision Making and Problem Solving
- Positive Behavior Support



Where Learning Happens!

Coaching Interaction - Modeling

Teacher: _____ Date: _____ Time: _____
 Observer: _____ Activity: _____

Pre-conference/Planning		
	Plan together the lesson component/activity/strategy that will be modeled	Notes
	Select or develop a checklist or an appropriate observation form with teacher	
	Explain to the students info regarding change in instructor	
Modeling		
	Model lesson component/activity/strategy	Notes
	Teacher marks checklist or collects data on observation form	
Post Modeling - Feedback Session		
	Ask: What went well/didn't go well?	Notes
	Ask: What adjustments need to be made?	
	Plan for teacher to implement the lesson component/activity/strategy.	
	Ask: What can I do to help you?	
Observation		
	Teacher teaches lesson implementing lesson component/activity/strategy	Notes
	Coach marks checklist or collects data on observation form	
Post Conference - Feedback Session		
	Ask: What went well/didn't go well?	Notes
	Ask: What adjustments need to be made?	
	Next steps for teacher	

Coaching Interaction - Lesson Planning

Teacher: _____ Date: _____ Time: _____

Observer: _____ Activity: _____

Planning		Notes
	Ask: What is the IEP objective you are working on? (The WHAT)	
	Ask: What is the objective of your lesson? (What do you want your students to be able to do at the end of the lesson?)	
	Guide the teacher in identifying strategies to engage all students.	
	How does this objective fit into a larger view, independent skills or a broad curriculum with a scope and sequence? (The WHY)	
	Guide the teacher in identifying appropriate guided practice activities. (The HOW)	
	Ask: How will you know your students have sufficient mastery to move to the next step? (The criterion to move ahead or to have the program mastered).	
	Ask: What materials do you need to gather?	
	Ask: Are there any accommodations or modifications that need to be made for particular students, such as assistive technology?	
	Ask: What can I do to assist you?	



Skill	2	1	0	Score / Comments
Written Instructional Program and Data				
Task analysis	I complete written task analyses with plans for fading prompts and data collection.	I use some form of written task analysis.	I don't use a written task analysis.	
Recording of data	I systematically record and graph data with baseline, probes, reinforcement levels, and error analysis. The data is graphed, evaluated and used for program modification.	I use some form of data collection, but not on a scheduled basis. I don't review data frequently.	I have little data collection for sequential skills or it is not utilized for program modification.	
Prompts and Prompt Fading				
Effective use of prompts	I provide sufficient prompting to ensure success on task steps. Prompting is done from behind when possible and verbal prompts are avoided.	I don't always provide enough prompts for student success. I use less prompting from behind than optimal and more verbal prompting than necessary.	I provide too much prompting or not enough.	
Systematic Fading	My prompt fading hierarchy is recorded and followed with adjustments as needed.	I fade prompts but not in a clear systematic way	I do little with prompt fading. Students may remain at the same prompt levels for long periods of time.	
Reinforcement				
Effective Reinforcement	I have conducted a reinforcement survey. I review reinforcement frequently and allow the student to make choices. I analyze data to watch for problems with reinforcement.	I provide reinforcement, but I may not spend time conducting a survey. I may persist with existing reinforcement strategies that are no longer effective.	I get into reinforcement "ruts," using the same reinforcers even when performance suggests they are no longer effective.	
Ratio of Positive to Negative Interactions	I maintain at least a 4:1 ratio of positive comments and non-verbals to corrections and reprimands.	I have less than 4:1 ratio of positive to negative interactions.	I use more corrections and reprimands than positive comments and non-verbals.	
Praise	I use effective praise following the concepts of I—FEED—V (see page 25 of this manual)	Some of my praise is enthusiastic and specific, but much has become routine.	I use the same phrases repeatedly and with little enthusiasm.	
Reinforcement Fading	I gradually fade the amount and rate of reinforcement, gradually reducing to natural occurring reinforcement. I collect data on rates and types of reinforcement.	I generally reduce the added reinforcement but I don't follow a specific plan and I often don't record it.	I don't pay particular attention to reducing the added reinforcement in a sequential task.	



Error Correction			
Error Correction Procedure	I follow the procedure of STOP, BACKSTEP, HELP whenever possible. I record errors in the data.	I correct most errors, but don't always follow the BACKSTEP procedure. I don't always take data on errors.	I don't correct errors quickly and don't collect error data.
Response to Errors	If the errors persist, I add more steps to the task analysis (branching), examine the strength of the reward, and may provide more practice outside the chain.	I occasionally analyze data and performance to determine a strategy for increasing student success, but don't do this on a regular basis. I may not be proficient at branching or providing practice outside the chain.	I usually don't do an error analysis or determine strategies to increase student success.
Generalization			
Generalization	As skills are taught and particularly as they are mastered, I incorporate them into routine activities in several environments such as school, home, or community.	I try to generalize some of the skills my students are learning or have mastered, but not most of them.	I pay little attention to extending skill development to multiple settings.
Self Improvement Plan			
My Goals		Support from District/School	Support from Coach
Goal #1			
Goal #2			
Goal #3			



Sequential Skills Observation Form

Teacher: _____ Date: _____ Time: _____

Observer: _____ Activity: _____

During an observation period, record tally marks for each behavior.

Class Climate Specific					
	Positive		Negative		
Ratio of Interactions	Task Related	Behavior Related	Task Related	Behavior Related	Ratio
Interfering Behaviors	Talking		Response to Interfering Behavior	Redirect	
	Hands/ Feet to Self			Consequence	
	Non-Compliance			Extinction	
	Aggression			Other	
	Other				
Sequential Task Specific					
Prompts	Non-Verbal Prompt		Verbal Prompt		Ratio
Error Correction	Immediate Error Correction with Backstepping and Prompt for Successful Completion of the Step:		Missed Backstep: Insufficient Prompt for correct response:		Ratio
	Time Delay Error Correction: Error corrected after established time		Time Delay Error Correction: Missed, delayed or too fast		
	Skills that may be rehearsed outside the behavioral chain:				



Acknowledgements:

Project Director: Dr. Alan Hofmeister

Alan M. Hofmeister

Alan Hofmeister was the Director of the Center for Information Technology at Utah State University. He has published widely, and produced more than 50 articles and several books on effective teaching practices. He served as the National President of the Association of Special Education Technology and also served as the Chairman of the Utah Governor's Science Council Committee on Computer Literacy. Alan was appointed by the Secretary of Health and Human Services to the National Advisory Board on Technology and the Disabled, and participated in a White House reception to honor selected scientists who have made a contribution to the education of children with disabilities. In 1988, he received recognition as the Utah State University Researcher of the Year. The National Rehabilitation Association designated Alan Hofmeister as a Mary E. Switzer Scholar for his distinguished contributions. He received an Emmy from the National Academy of TV Arts and Sciences, Washington, D.C. Region, for Quality Children's Programming. This award was presented for his role as Chief Scientist for the "Mad Math Television Series," which aired on the *The Learning Channel*.

Hofmeister received his Bachelor's of Education from the University of Queensland in Australia. He received his Master's of Science and Doctorate of Philosophy from the University of Oregon. Both degrees were awarded "With Honors." He had research and teaching assignments at the University of Oregon, Columbia University, Seattle Pacific University, the University of Minnesota, and Utah State University. He has assisted numerous poverty-impacted inner city and rural schools to "close the gap" in core curriculum standardized assessments. The reading programs he designed and validated were adopted by the READ Foundation and serve as the core program for after-school and summer tutoring in inner city schools in New York City.

Alan Hofmeister provided technical assistance to Pacific Rim nations to improve the effectiveness of schools and preservice teacher education. The Governor and Legislature of Guam awarded Alan the Ancient Order of Chamorri, Guam's highest legislative recognition, for the technical assistance he provided. These international literacy efforts continue in Russia, Southeast Asia, and several South American nations.

Most recently, Alan was invited by the U.S. Department of Education to lead the national technical assistance team responsible for planning the federal Reading First Program for the Bureau of Indian Affairs. The team's Reading First proposal was successful and resulted in an initial award of \$30 million dollars to the Bureau of Indian Affairs for national implementation.

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