

Learn, See, Do: Strategies for Teaching Core Content to Students with Significant Cognitive Disabilities in Inclusive Settings.

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Objectives:

- Audience members will
 - Demonstrate systematic instruction strategies for teaching core academic content to SwSCD in inclusive settings;
 - Determine discrete and chained skills across content areas to teach to SwSCD using systematic instruction strategies;
 - Consider supports necessary for use of systematic instruction strategies in inclusive classrooms (e.g., peers, pictures, blinds, SLP cards).

Student Benefits of Inclusion

- Research on inclusion for SwSCD shows
 - improved access to the general curriculum
 - more likely to work on an academic standard
 - more academically engaged in a general education class
 - predictor of post-school outcomes
- Common models for instruction in inclusive classrooms
 - Co-teaching



Evaluation of EBP, RBP, and Promising Practices for SwSCD in inclusive contexts

Previous Review	Current Review	
 Hudson, Browder, & Wood (2013) Evidence-based practices: Embedded trial instruction Constant time delay Promising practices: System of least prompts Task analytic instruction 	 The Ties Center (2018) at UNC Charlotte Evidence-based practices: *Embedded trial instruction *Constant time delay Research-based practices: 	
	 Chained tasks taught using task analysis with system of least prompts Simultaneous prompting Peer support interventions Promising practices/support tools: 	
	 Technology-aided instruction Graphic organizers 	

How can you apply these strategies in your classrooms?

- Key Concept Review
- Instructional Strategies
- Practice
- Brainstorm about inclusive settings



Pre-teaching/Review

- Key Terms
 - **Stimulus control**: S -> R -> C (or A -> B -> C)
 - Present "move" written on card (S), Student says "move" (R), Teacher says "That's right! This word is "move" and gives student high five (C).
 - **Reinforcement**: increases likelihood of behavior occurring in future
 - **Discrete skill**: requires single response
 - Pointing to/touching object, naming an object
 - **Chained task**: number of discrete skills chained together to form more complex task
 - Completing a story-based lesson, solving a word problem, completing a science experiment

Instructional Trials

Type of trial determined by child's needs, learning target, and context:

- Massed Trials: consecutive, discrete learning trials
- **Spaced Trials**: delivered within an activity or routine but have a non-instructional pause between them
- **Distributed Trials**: embedded within or across routines or activities
- *Embedded Trials: instructional trials distributed across ongoing routines and activities within the general education classroom (e.g., during natural breaks in instruction)

Planning for Embedded Trials

- Sample of a typical lesson plan format (Early Numeracy Implementation Guide Jimenez, Browder, Saunders)
- Plan when to embed trials and with whom
- Use a simple form like this for collaborative planning and feedback

GURE 3	Example of	Embedded	Instruction	Planning	Form	
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Lesson components	Describe embedded instruction and how student will participate	Describe what worked well and what needs refining
1 Teacher Input/Introduction to Lesson		
2 Guided Practice		
3 Group Activity	Michaela will participate within a group. Assign peer buddy for writing assistance.	
4 Independent Practice/ Worksheet	Use same worksheet as entire class, but	
	Michaela will solve problems using numbers 1-5. Michaela can also use a calculator for the worksheet problem.	
5 Closure		



Practices



Embedded Constant Time Delay

- Procedure
 - Students acquire skills during 0-delay sessions before moving to a delay to promote nearly errorless learning
 - Requires two or more behaviors and intermixing during trials (e.g., 2 or more sight words)
 - A "controlling prompt" is selected that is behavior and skill specific. This should be the least intrusive prompt that will result in a correct response.
 - Example: Model prompt (instructor points to the correct word and states it aloud)
 - Example: Physical prompt (instructor uses hand-over-hand prompting)
 - Repeat 0-second delay round (immediately providing controlling prompt) until the student begins to anticipate behaviors then move to delay round.
 - Note: Some students may pick up the behaviors quickly and can move to the delay round after 1-2 sessions; whereas others may need several sessions

Benefits of using Constant Time Delay during Embedded Trials in Inclusive Classrooms

- Easily embedded and very quick (e.g., during warm-up, down time, partner work, guided practice, independent practice)
- Few errors so less opportunity for errors to become ingrained
- Less anxiety and frustration because modeling and prompting are included
- Any trained person can implement (staff or peer)
- A single prompt is used throughout "controlling prompt"

Steps for using the Constant Time Delay procedure

First, conduct 0-second delay round

- 1. Deliver the attentional cue.
- 2. Deliver the task direction.
- 3. Immediately use the "controlling prompt" or the prompt that is necessary for learner to perform correct response. Wait for the student to mimic the behavior.
- 4. Go to the next trial and repeat.

Steps for using Constant Time Delay procedure

Next conduct delay (e.g., 4 sec) round

- 1. Deliver the attentional cue.
- 2. Deliver the task direction.
- 3. Wait predetermined number of seconds for the learner to correct behavior.
- 4. Provide reinforcement always for a correct response (e.g., Way to go! That is number 4.)

or

Provide controlling prompt for an incorrect/no response (e.g., Point to the numeral 4 and say, "This is 4, touch 4!" and wait for student to perform skill).

Video and Sample Data Sheet for CTD

National Professional Development Center on Autism Spectrum Disorders

Module: Time Delay

Time Delay Data Collection Sheet

Learner: ____

Person collecting data:

Activity/setting:

Target skill:					
Date:	Delay:		Date:	Delay:	
Trial #	Before	After prompt	Trial #	Before	After prompt
1	P. C. Ipr		1	prompt	
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		

Key: + = performed correctly; - = performed incorrectly

Common discrete skills for Embedded instruction

• Turn and talk

- What are some discrete skills- a single response per question/trialwhich could be embedded during a general education lesson?
- Can CTD be used to help other students learn as well?

Your Turn

• Demonstrate how to teach vocabulary using Constant Time Delay





Demonstrate both the 0 delay round and the 4 second delay round



Questions?

Teaching Chained Tasks Using Task Analytic Instruction and System of Least Prompts

- Steps of chained task broken down into series of discrete skills that are linked sequentially
- Grade-Aligned Examples of Skills Taught Using Task Analysis
 - Completing story-based lesson
 - Solving algebraic equation
 - Filling-in graphic organizer to summarize Social Studies content
 - Completing steps of science experiment

Developing a Task Analysis

- Select goal
- Write quality TA
 - watch someone perform task
 - determine critical steps to perform task
- Decide how you will teach behavior and why
 - Forward chaining, backward chaining, total task presentation*
- Select instructional strategy (e.g., system of least prompts)
- Create data sheet
- Field test TA
 - someone unfamiliar perform steps as written
 - check with experts such as general education teacher

Sample Task Analysis: Breaking it down stepby-step

The teacher will:	Teacher response:	Notes:
. Provide an anticipatory set/attention grabber		
 Read the title and give the target student an opportunity to point to or say the title 		
 Read the author's name and give the target student an opportunity to say or point to author's name 		
Ask a prediction question and give the target student an opportunity to answer the prediction question		
 Give the target student an opportunity to open book (a) without being told, then (b) with prompts/ model as necessary 		
b. Point to each word in chosen sentence while reading aloud and give the target student an opportunity to point to chosen line in the text		
7. Give target student an opportunity to point to or say a vocabulary word		
 Give target student an opportunity to anticipate and fill in a repeated story line 		
 Give target student an opportunity to anticipate turning the page without being told 		
 Give target student an opportunity to answer a comprehension question 		

- Courtade, Lingo, & Whitney (2013)
- Sample task analysis of story-based lesson for general education teacher to self-check implementation of key components of story-based lesson using adapted text

Sample Student Task Analyses (Heinrich et al., 2016)



- Solving Linear Equation with One Variable
- 1. Write + or on each side of equation
- 2. Perform operation
- 3. Write new equation
- 4. Write "divide" by multiplier on each side
- 5. Perform operation
- 6. Write/state what x equals



Research Topic on the Internet

- Highlight web address bar
- Type www.google.com
- Click on google search bar
- Type search word
- Press "search" or push "enter" key
- Click on website



Fill Out Punnett Square

- Write letters on top of square
- Write letters on side of square
- Write letter combination in first block
- Write letter combination in second block
- Write letter combination in third block
- Write letter combination in fourth block

Total Task Chaining

- Most prevalent in inclusive settings
- Student given opportunity to perform each step every opportunity
 - When completing algebra problem, the student has the opportunity to perform each step EVERY time he/she works a problem

System of Least Prompts

- Also known as Least to Most Prompts or Least Intrusive Prompting
- Can be used with chained task (e.g., locating a web page) or discrete skill (e.g., pointing to a vocabulary word)
- Uses hierarchy of at least 3 prompts progressing from least intrusive to most intrusive is specified for the task and individual
- Specified wait time (e.g., 2-3 seconds) used prior to deliver each prompt level (e.g., g, v, m, p) until learner makes targeted response
- After delivering instructional cue, give learner opportunity to make correct response before providing any prompting.

System of Least Prompts: Math Example



SLP for reading or listening comprehensionliteral and inferential





Independent	Reread	Relate to student-	Model how you	Point to answer on
THUMBS UPI	paragraph	How do you feel when? Why would you?	would relate- I would [answer] when a	response board
5	4	3	2	1









By Langston Hughes



Hold fast to dreams



For if dreams die



Life is a broken-winged bird



That cannot fly.

Dreams 1



Hold fast to dreams





Life is a barren field



What do you think the author meant when he wrote "life is a barren field"? Do you think he meant _____?



What do you think the author meant when he wrote "life is a barren field"? Do you think he meant _____?

drive a car life is great life is empty without dreams

The author of the poem says life is a barren field, frozen with what? Life is a barren field, frozen with _____.



The author of the poem says life is a barren field, frozen with what? Life is a barren field, frozen with _____.



Literal Recall • Dreams

Let's practice with the SLP

- Dreams handout
- SLP card
 - Re-read poem or 2 Stanzas
 - Read Stanza with answer/idea
 - Model by pointing to answer/or model thinking about idea
 - Partial physical to answer in poem (not response options)
 - Physical to response option



Questions?

Graphic Organizers

- Instructional tool used to aid in comprehension and/or organize key information
- May help students conceptually understand and solve math problem

KWHL Chart						
What do we Know?	What do we Want to know?	How can we find out?	What did we Learn?			
Student's name		Prediction				

Courtade, G., Jimenez, B., Trela, K., & Browder, D. M. (2008). Teaching to science standards: An inquiry based approach for middle and high school students with moderate and severe disabilities. Verona, WI: Attainment Company.

Self-Questioning Graphic Organizer					
Student ID:	Date: _	Initials	:: Chap	oter: Sec	tion:
	1	(1)12 12 (1)12 12 (1)		<u> </u>	
who	what	when	where	why	how
Heading:					?
Que	stion	Answer	In the book	Not in the book	I don't know
Q1					
Q2					
Q3					





Putting it All Together

- Turn and Talk again: Write task analysis for teaching a student to solve an addition problem using manipulatives and graphic organizer to right.
- For each step, script system of least prompts:
 - What would be the prompting hierarchy?
 - What would you do/say specifically for each step of TA using prompting hierarchy?



Example of Addition TA: Step-by-step (step 1)

• First Set: Point to the first number in the number sentence. Make a set of (#) in the first circle. Wait for student to respond.

Independent Response	Least Intrusive Prompts				
↓	Verbal –	 Specific Verbal 	➤Model/Incorrect		
Excellent job! You	How many	Put (#) counters in	Watch me. Make set		
made a set of (#).	counters go in the	the first circle.	in first circle, then		
	first circle? Wait for	Point to first circle	move counters		
	student to respond.	and wait for	away. <mark>Your turn</mark> .		
		students to respond.	Allow student		
			chance to retry. Use		
			hand-over-hand if		
			student makes a		
			mistake on retry.		

Example of Addition TA: Step-by-step (step 2)

 Second Set: Point to the second number in the number sentence. Make a set of (#) in the next circle.

Independent Response	L	east Intrusive Promp	ts
	Verbal –	Specific Verbal -	→Model/Incorrect
Excellent job! You	How many	Put (#) counters in	Watch me. Make set
made a set of (#).	counters go in the	the next circle.	in next circle, then
	next circle? Wait for	Point to next circle	move counters
	student to respond.	and wait for	away. <mark>Your turn</mark> .
		students to respond.	Allow student
			chance to retry. Use
			hand-over-hand if
			student makes a
			mistake on retry.

Example of Addition TA: Step-by-step (step 3)

• Combining Sets: Wait for student to respond. Now join both sets together in the last circle and count to add. Wait for student to respond. Write your answer in the number sentence.

Independent Response	Least Intrusive Prompts					
₩	Verbal -	Specific Verbal	Model/Incorrect			
Excellent job! You joined the two sets together to make one BIG set. Restate number sentence with answer (e.g., "2 plus 3 equals 5").	Join your sets together to add. Wait for student to respond.	Move your two small sets into the last circle and count. Wait for students to respond.	Watch me. Combine counters in last circle in an organized array and count aloud. Move counters back to original sets. Your turn. Allow student chance to retry. Use hand-over-hand if student makes a mistake on retry.			

Example of Addition TA: Goal- Working toward independence

• Write a number sentence with a sum of 10 or less in number sentence on student's graphic organizer. Show me how to solve the problem using your graphic organizer. Make sure students write answer in number sentence immediately after solving.

Independent Response	Least Intrusive Prompts					
¥	Verbal -	Specific Verbal -	➤Model/Incorrect			
Excellent job! You joined the two sets together to make one BIG set. Restate number sentence with answer (e.g., "2 plus 3 equals 5").	Join your sets together to add. Wait for student to respond.	Move your two small sets into the last circle and count. Wait for students to respond.	Watch me. Combine counters in last circle in an organized array and count aloud. Move counters back to original sets. Your turn. Allow student chance to retry. Use hand-over-hand if student makes a mistake on retry.			

Can you write a TA? Another turn and talk

- Think about the inclusive class-
- How would you know what to include in the TA?
- What could be included in the TA as supports?
- Can you think of cases in which the TA would only serve the students with disabilities?
- Are there broad TAs that could utilized instead of individual TAs? Which content areas likely can use a broad TA and which need individual TAs?

Science Inquiry Example of TA (Courtade et. al.2010)

Steps in Task Analysis for Teachers and Criteria for Correct Completion of Steps

Phase A: Engagement

1. Show the students a picture or material related to the science skill being taught

Correct Response-Shows the student a picture, picture symbol, or object related to the

science skill

2. Ask the students to tell you what the picture/material is

Correct response-Requests that a student tells what he/she thinks the picture/material is; if the student is not verbal, gives a choice of symbols for the student to use to make a comment; leads the student by asking questions

3. Ask the students what they think the picture/material does (what they know about it)

Correct response-Requests that a student tells what he/she thinks the picture/material does; if the student is not verbal, gives a choice of symbols for the student to use to make a comment; guides the student by asking questions Incorrect response-Tells the student what the picture/material does; does not offer a studen who is not verbal choices to make a comment; tells the student his/her identification is wron

Incorrect Response-Discusses the skill being taug

Incorrect response-Tells the student what the

picture/material is; does not offer a student

who is not verbal choices to make a comment;

tells the student his/her identification is wrong

without showing a visual

4. Ask the students what they would like to find out about the picture/material

Correct response-Requests that a student tells what he/she would like to know about the picture/materials; gives picture choices if necessary to elicit a response, guides the student by asking questions Incorrect response-Responds for the student; doe not provide choices if needed; discounts a student's answer

Phase B: Investigate and Describe Relationships

5. Ask students how they will gather information about the subject

Correct response-Requests that a student tells what he/she will find out more about the picture/materials; gives picture choices if necessary to elicit a response, guides the student by asking questions

0.1

 Ask students to tell you what is the same (pattern) Correct response-guides students to observe patterns by pointing out characteristics to observe; gives choices of patterns if necessary

 Ask students to tell you what is different (pattern) Correct response-guides students to observe patterns by pointing out characteristics to observe; gives choices of patterns if necessary Incorrect response-Responds for the student; does not provide choices if needed; discounts a student's answer

Incorrect-Points out the pattern immediately; does not guide students; does not give choices

Incorrect-Points out the pattern immediately; does not guide students; does not give choices

Phase C: Construct Explanation

8. Explain relevant accepted scientific knowledge Correct response-Explains knowledge using pictures, symbols, etc.; knowledge is relevant and may help students explain what they have observed

Incorrect-explains knowledge without showing a visual; knowledge is irrelevant to what students have observed; connection to explanations of what students have observed is cannot be discerned

Content Matters! Prioritize What to Teach

- General education curriculum moves on at very fast pace
- It is critical to prioritize standards using content experts' help
- Most content areas cover 40-50 standards per year
- Other tips
 - Pinpoint critical areas of the standard to target
 - Use pre-teaching
 - Use supplemental teaching
 - Don't forget to check for maintenance!

Culture Matters!

Implications for Classroom Practice

- Culture of school and administrative support greatly impact success of full inclusion in school
- Collaboration is critical
- Training is essential

Context Matters!

Implications for Classroom Practice

- Context of classroom may present challenges
 - Environmental arrangements (e.g., solo desks only)
 - Instructional contexts (e.g., lecture-dependent classes)
 - Social contexts (e.g., limitations on students' abilities to discuss)
 - Number of support staff
- Implementation of intervention by interventionist may vary across contexts
 - Gen ed teacher/SPED teacher limit number of trials possible
 - Peers can INCREASE these opportunities!
 - Peers also are less stigmatizing than adults, especially in older grades

Technology-Aided Instruction

- "Any electronic item/ equipment/ application or virtual network that is used intentionally to increase or maintain, and/or improve daily living, word/ productivity, and recreation/leisure capabilities that plays a central feature of an intervention that supports the goal or outcome for the student" (Odom et al., 2015)
- Commercially-developed or teacher-made
- TAI should use a sound instructional strategy or a combination to teach the targeted skill(s)
- Caution should be used in inclusive settings that it does not isolate the student



Grade-levels Matter!

Differences from Elementary to High School

- Students with SCD who have greatest post-school outcomes had inclusive opportunities starting in younger grades and continuing through high school
- Gaps continue to widen as students progress through grades
- Contexts tend to change from interactive groups to more individualized assignments
- Class sizes increase
- Even if student has not been included and is now in high school class does not mean it cannot happen!
 - May have been prior missed opportunities.

Resources

- Common Core Teaching Strategies in the Inclusive Classroom
 - <u>http://www.tash.org/wp-content/uploads/2011/03/Essential-Best-Practices-070312-</u> <u>FULL-Jorgensen.pdf</u>
- Collaboration for Effective Educator Development, Accountability and Reform (CEEDAR)
 - http://ceedar.education.ufl.edu
- National Center and State Collaborative (NCSC)
 - http://www.ncscpartners.org
 - Instructional Resource Guide direct link: <u>https://wiki.ncscpartners.org/index.php/Instructional Resource Guide</u>
 - Handout of Inclusion Updated version
- SWIFT Education Center for Multi-Tiered Support Systems and inclusive education
 - http://www.swiftschools.org
- The TIES Center
 - <u>https://tiescenter.org</u>