# The Use of SRA Direct Instruction within Autism Support Classrooms

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National Autism Conference
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Pennsylvania Training and Technical Assistance Network

#### PaTTAN's Mission

The mission of the Pennsylvania
Training and Technical Assistance
Network (PaTTAN) is to support the
efforts and initiatives of the Bureau of
Special Education, and to build the
capacity of local educational agencies
to serve students who receive special
education services.

PDE's Commitment to Least Restrictive Environment (LRE)

Our goal for each child is to ensure Individualized Education Program (IEP) teams begin with the general education setting with the use of Supplementary Aids and Services before considering a more restrictive environment.

#### Overview

- What is Direct Instruction (DI)?
- Review of DI history and basic research
- Closer look at each curricula available
- Basic teaching procedures
- Prerequisite skills necessary to be considered for placement

#### Introduction to Direct Instruction

- Formerly called DISTAR
- DI developed out of the work of Carl Bereiter and Siegfried Engelmann at the University of Illinois in the 1960s
- It is a behavioral approach to learning/teaching that can be used to teach a variety of academic skill repertoires, e.g. reading, writing, math, spelling, etc.
- An explicit, scientifically-validated model of effective instruction.
- A system of teaching that attempts to control all the variables that make a difference in the performance of children.

#### Introduction to Direct Instruction

- Differs from other models of explicit instruction by its focus on curriculum design and effective instructional delivery
  - Explicit instruction is NOT: (Harris & Graham, 1996)
    - Trial-and —error learning
    - Discovery
    - Exploration
    - Facilitated learning
    - Teacher assisted rather than directly taught.
- · Published, research-validated curriculum

#### History of Direct Instruction

- 1966: Bereiter and Engelmann publish Teaching Disadvantaged Children in the Preschool.
- 1967: Engelmann and Becker invited by the Office of Education to develop a program appropriate from K-3, which resulted in the Direct Instruction Model being selected for the Project Follow Through study.
- 1968: DISTAR was published.
- Programed has broadened to other areas of application (literary analysis, logic, chemistry, critical reading, geometry, and social studies).
- Project Follow Through: Experimental phase from 1968-1976. Funding for service program discontinued in 1995.

# Project Follow-Through

#### Project Follow-Through

#### Background:

- Largest educational study in U. S. history
- Took place from 1968 to 1976
- Examined low-income, at-risk students
- 75,000 students in 170 communities were involved
- Students participated from K 3
- Examined effectiveness of 9 educational methods across 3 outcome measures

Adams, G. L., & Engelmann, S. (1996). *Research on Direct Instruction: 25 years beyond DISTAR*. Seattle, WA: Educational Achievement Systems.

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## Project Follow-Through

- 9 Models of Instruction across three categories:
  - Basic Skills Models
  - Cognitive/Conceptual Models
  - Affective Skills models

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## Project Follow-Through

- Basic Skills Models:
  - Direct Instruction Model
  - Behavior Analysis Model
  - Language Development Model
- Cognitive/Conceptual Skills Models:
  - Cognitively-Oriented Curriculum
  - Florida Parent Education Model
  - Tucson Early Education Model

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## Project Follow-Through

- Affective Skills Models:
  - Bank Street College Model
  - Open Education Model
  - Responsive Education Model

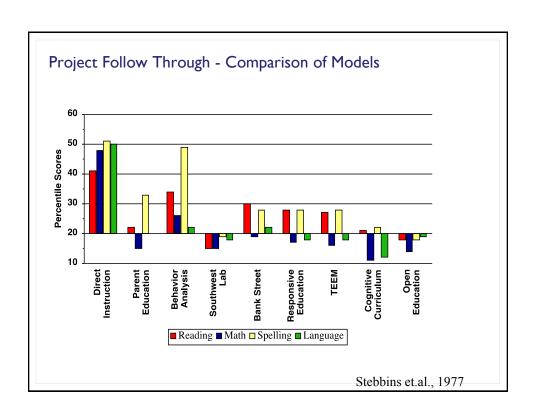
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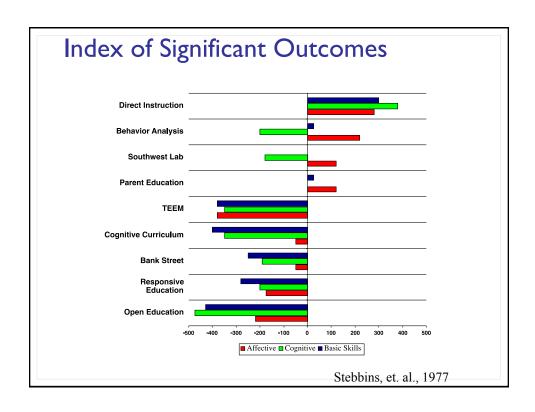
# **Project Follow-Through**

#### **Research Findings:**

- Only the Direct Instruction Model had positive scores on all three types of outcome measures (i.e., Basic Skills, Cognitive, and Affective).
- Direct Instruction was the highest on all three types of measures.

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DI: Philosophy and Features

## **DI Philosophy**

- Direct Instruction is an explicit, intensive, teacher-directed instructional method of teaching developed by Siegfried Engelmann and his colleagues in the 1960's.
- All DI programs are based upon the same philosophy and incorporate a set of common features.

## **DI Philosophy**

- The DI philosophy holds that the single most decisive factor in student's performance is the quality of instruction they receive from their teachers. This philosophy is based on certain principles:
  - 1. Learning is a behavioral process that can be observed and directly measured.
  - 2. All children can learn when taught correctly, regardless of past history.
  - 3. All teachers can be successful, given effective teaching materials and presentation techniques.

# Four Common Features of Direct Instruction Programs

- Program Design
- Instructional Organization/Delivery
- Documentation
- Teaching Techniques

# Feature of Direct Instruction: Program Design

- Analysis of content matter and identification of organizing ideas and generalizable strategies to enable more learning in less time
- 2. Clear communication is designed:
  - Wording Principle: use wording that is similar across all items so students can focus on the details of instruction (minimizes distractions and confusion likely caused by variation in teacher language).
  - The setup Principle: Examples and non-examples share the greatest possible number of irrelevant features.
  - The Difference Principle: Examples shown are similar to one another except in the critical feature and the difference of the nonexample is just enough to change the positive example to a negative example.
  - The sameness Principle: Show the range of variation (full range of positive examples and limit of variation shown by negative examples).
  - Testing Principle: Test for new examples and non-examples to test for generalization.

# Feature of Direct Instruction: Program Design

- 3. Instructional formats are designed to structure the student-teacher interactions: clear and concise and specify the way teachers will present each example.
- 4. Skills sequenced to maximize success and minimize confusion: emphasis on teaching skills that will allow students to be successful at strategies they will learn later on.
- 5. Topics and objectives are organized into tracks to allow for systematic skill development and support cumulative review and application
- 6. Provides opportunities for guided practice and cumulative review
- 7. Incorporates continuous assessment and management

# Feature of Direct Instruction: Organization and Delivery

- 1. Organize students into groups to best meet their needs via placement tests.
- 2. Develop clear instructional objectives
- 3. Allocate sufficient time for teaching: allow sufficient time for students to be involved in learning activities that they can perform successfully.
- 4. Quick pace and high rates of individual and group responses to maintain active student responding/engagement.

# Feature of Direct Instruction: Organization and Delivery

- 5. Implement planned correction procedures
- 6. Provide reinforcement to keeps students motivated
- 7. Use of in program assessments to assess/monitor student performance.
- 8. Implement precise and careful plans through presentation of scripted lessons to ensure consistency.

# Feature of Direct Instruction: Organization and Delivery

- Scripted Presentations
  - Provide examples
  - Standardized wording
  - Ensure precision
  - Provide efficient corrections
  - Controlled time per activity
  - Increased academic learning time

- Rules for reviewing scripts
  - Decide where to add think time and get ready
  - Where to add pause and punch
  - Where to verify responses
  - Where to add overt responses
  - Where to add meaningful repetition
  - Where to modify or add examples

# Feature of Direct Instruction: Organization and Delivery

- Grouping
  - Group size and composition adjusted to accommodate and reflect student progress and lesson objectives.
    - Grouping is flexible and dynamic
  - Group size is differentiated according to the needs of students
    - Students with the greatest needs are taught in the smallest groups.
  - Cross-class or cross-grade grouping may be used when appropriate to maximize opportunity to tailor instruction to students performance level.
    - Groups are homogeneous

#### Feature of Direct Instruction: Documentation

- Over 50 research studies documenting the effectiveness of DI programs (e.g., Darch & Simpson, 1990; Flores & Ganz, 2007; McKenzie, Marchand-Martella, Moore, & Martella, 2004).
- More recent research demonstrating DI's effectiveness specifically with children diagnosed with autism and related disabilities (Flores & Ganz, 2007; Ganz & Flores, 2009; Riepl, Marchand-Martella, & Martella, 2008)

#### DI Curricula Available

#### DI Curricula Available

- All commercially available DI programs are published and developed by the Scientific Research Associates (SRA), a part of MCGraw-Hill School Education. (https://www.mheonline.com/segment/view/I/ 3)
- Reminder: originally designed for instruction within general education setting BUT can be used with special education students in small groups or individually

#### DI Curricula Available

#### **Reading Programs**

- Curriculum-based assessment and fluency system that monitors student performance
- Phonics-based program to teach decoding and comprehension skills

## DI Curricula Available: Reading

# Reading Mastery

- Use of orthography in beginning levels
- Three versions: Classic, Plus & Signature Edition
- Reading Mastery Classic
  - Goal is to bring students up to grade level by end of first grade
  - Two Levels Kindergarten & Grade I
  - Fast Cycle available presents contents of both level in one school year

#### DI Curricula Available: Reading

- Reading Mastery Plus (no longer available but some schools have this)
  - Comprehensive K-6 core reading program
  - Programming combines lessons from the following: Reading Mastery Classic Level I & II, Reading Mastery Level III-VI, Language for Learning, Language for Thinking, and Reasoning and Writing.
  - Not as much repetition in this program

#### DI Curricula Available: Reading

- Reading Mastery Signature Edition (2008)
  - Newest version of Reading Mastery available
  - K-5<sup>th</sup>
  - Includes the following strands that are purchased separately:
    - Reading strand
    - Language Arts strand
    - Literature strand
  - Fast Cycle is available
  - Transition Program between Grade I and 2 → additional 35 lessons to increase fluency
  - Placement test, every 5 lessons checkout, every 20 lessons within curriculum assessment

# DI Curricula Available: Reading

#### Horizons

- Uses traditional orthography other types of prompts are used (i.e., underlines and different colored text)
- NOT appropriate for the at-risk student with little language or literacy knowledge.
- Student must demonstrate most letter names and fluently follow instructions.
- Four levels  $\rightarrow$  A, B, A/B, and C/D
- Grade I-4th

#### DI Curricula Available: Reading

## Corrective Reading

- Designed for students Grade 4 high school
- Four decoding modules and four comprehension modules
- Decoding Modules: A, B-I, B-2, & C
  - ullet A students reading at early first-grade level
  - B-I students reading at late first-grade level
  - B-2 students reading at beginning third-grade level
  - C focuses on late elementary school decoding
- Comprehension Modules
  - Begin with students with a forth-grade level or higher

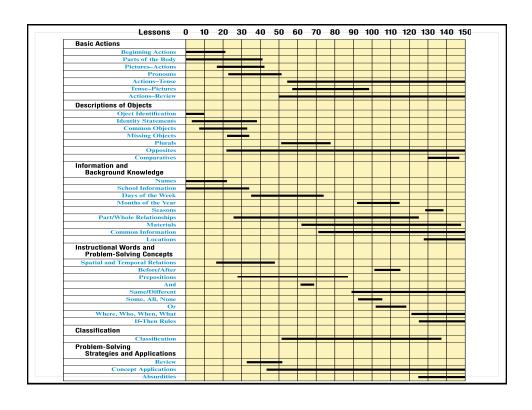
#### DI Curricula Available

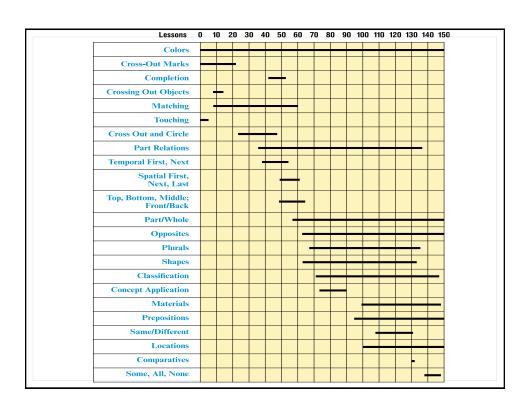
#### Language Programs

- Three Main programs:
  - · Language for Learning
  - · Language for Thinking
  - Language for Writing
- Formerly known as DISTAR Language I, II, and III

#### DI Curricula Available: Language

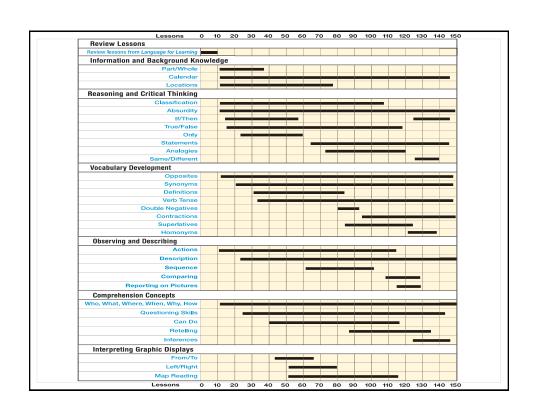
- Language for Learning
  - Designed for Pre-K  $2^{nd}$
  - Oral program that requires no reading for the student
  - Focuses on foundational language concepts and vocabulary
  - Teaches common information
  - Teaches how to analyze and make predictions around statements
  - Fast Cycle available
  - Placement test and within curriculum assessment every 10 lessons





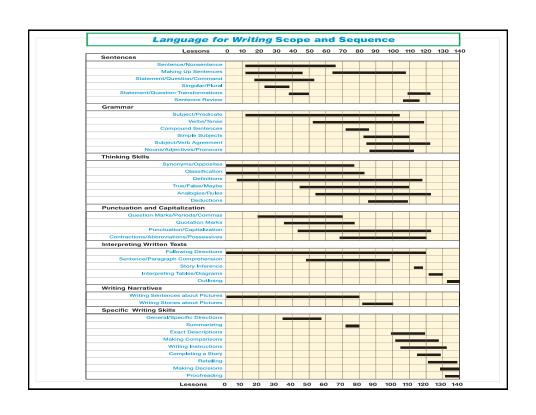
# DI Curricula Available: Language

- Language for Thinking
  - Designed for Ist 3rd
  - Expands concepts learned in Language for Learning
  - Applies concepts to build and teach problem solving – analytical and deductive reasoning skills
  - Expands vocabulary
  - Placement test and within curriculum assessment every 10 lessons



# DI Curricula Available: Language

- Language for Writing
  - Designed for 2<sup>nd</sup> 6<sup>th</sup>
  - Focuses on teaching communication skills through writing
  - Supports writing skills through writing narratives, use of specific words, making precise comparisons, summarize and re-tell, and proof read for punctuation, grammar and word usage.



## DI Curricula Available

#### Math Programs

- Connecting Math Concepts: Comprehensive Edition 2012
- Distar Arithmetic
- Corrective Math

## DI Curricula Available: Math

- Connecting Math Concepts
  - Designed for K 5<sup>th</sup>
  - Levels A-E
  - Ongoing development of mathematical concepts and problem solving

## DI Curricula Available: Math

- Distar Arithmetic
  - Designed for K 3<sup>rd</sup>
  - Two Level I & II
  - Teaches basic math skills and concepts
  - Frequent in-program mastery tests

#### DI Curricula Available: Math

- Corrective Math
  - Designed for 3<sup>rd</sup> Adult
  - Two groups:
    - Group I Addition, subtraction, multiplication and division
    - Group 2 basic fractions, fractions, decimals and percents, and rations and equations

# Feature of Direct Instruction

# Teaching Technique

# Feature of Direct Instruction: Teaching Technique

#### Student-Teacher Interactions:

- I. Active student participation
- 2. Group unison responding
- 3. Signals
- 4. Pacing
- 5. Teaching to mastery
- 6. Correction procedures
- 7. Motivation

#### Feature of Direct Instruction: Teaching Technique

#### Set-Up for Successful Teacher-Student Interactions

- Clear expectations (rules and routines)
- Materials organization
- Seating
  - Assign seating
  - Lower performers closest to teacher
  - All students can see the teacher/materials
  - Teacher can see all students in the group
  - Teacher can see independent workers



#### Feature of Direct Instruction: Teaching Technique

# **Basic Teaching Template:**Instructional Format of Model-Lead-Test-Verify

- Frame: The teacher states the learning task at hand.
- Model: The teacher provides the expected response verbally or through demonstration. If needed, the teacher repeats the model to make sure all students heard or saw it.
- Lead: The teacher and students respond together—several times if needed to ensure that all students practice responding correctly with teacher.
- Test/Check: Students perform the task independently, several times if needed to do it correctly.
- Verification: The teacher provides specific praise—stating what the students learned.

# Sample Format

		m	man
Model	Teacher	"This letter makes the sound /mmm/"	"My turn to sound out this word. Mammaannn"
Lead	Teacher and Students	"Say it with me, /mmm/"	"Sound it out with me, mmmaaannn"
Test	Students	"What sound?"	"All by yourselves, sound it out."
Verify	Teacher	"Yes, /mmm/"	"Yes, mmmaaannn"

#### Feature of Direct Instruction: Teaching Technique

## Signal and Purpose of them

- **Visual** or **auditory** cues that are used to control the timing of students' responses.
- Purpose
  - Increases the likelihood of ALL students initiating a response.
  - Allows ALL students to practice the task.
  - Allows the instructor to monitor every student.
  - Allows the instructor to hear incorrect responses and correct them immediately.

# Two Basic Types of Signals

# Visual Signals

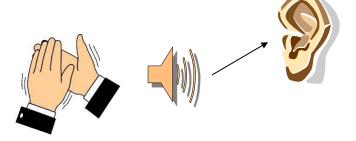
- Used when students are looking at the teacher, at the board, or at the a presentation book.
- The teacher signals the students by making some type of hand motion.





# **Auditory Signals**

 Used when students are looking at their own text to read word lists, stories, and skill exercises.



# Signals - 4 basic steps:

- A focus cue to gain students' attention and present the task
- Brief pause (about I second) to allow "think time"
- A verbal cue ("get ready")
- A signal

# Signal - Why the pause?

- Provides a break between the question/task presented and the signal
- Ensures that every student sees or hears the signal
- The group answers more effectively

# Signal - General Rule to Follow

- Signal for student to respond.....
  - Instructor only talks on focus position
  - Instructor never talks and moves

# Closer Look at Signal Use and Teaching

# Types of Signals

#### Language for Learning/Thinking

- Point/Touch
- Hand-drop

#### **Reading Mastery**

- Continuous Sounds (Loop)
- Stop Sounds (Slash)
- Say It Fast (Hand Drop)
- Blending (Fingers)
- Audio (Clap-Tap)
- Point/Touch

#### **Connecting Math**

- Point/Touch
- Hand-drop
- Audio signals (e.g. pencil tap, finger snap, or claps)

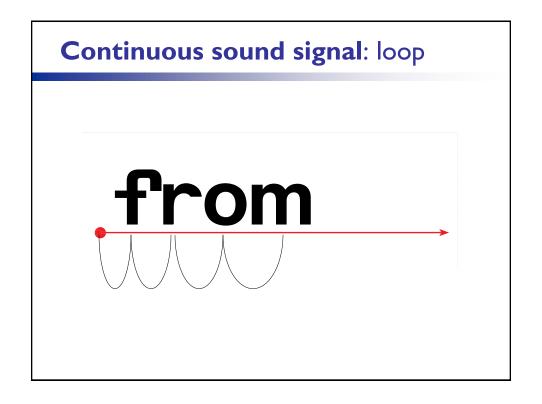
# Point/Touch Signal

- Look at the picture
- Point to the picture (make sure all students can see it)
- Ask the question or give the instruction while pointing
- Hold your finger in the point position for one second
- Signal student response with touch

# Hand Drop Signal

- At the beginning of each step of the exercise, raise your hand. DO NOT move your hand while talking.
- Ask the question or give the instruction.
- Pause for about one second, and then quickly drop your hand to signal for students to respond.

# Reading Mastery Signals • Continuous sound signal: loop 1. Focus 2. Preparation 1/5 3. Response 4. Release 5. Verify



# **Reading Mastery Signals**

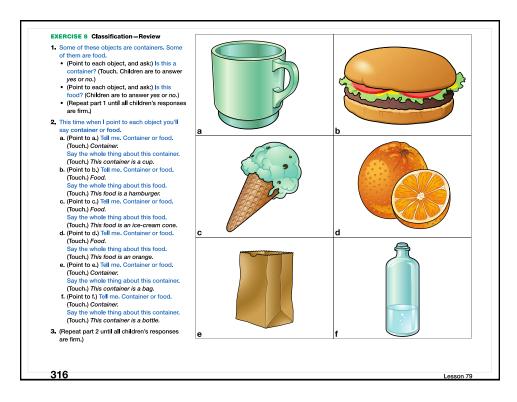
- Stop sound signal: slash
  - I. Focus
  - 2. Response
  - 3. Verify

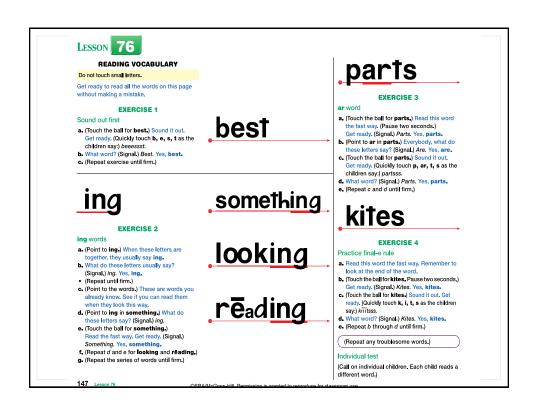


- Pronunciation signal: hold up finger
  - 2 seconds for continuous sounds
  - Flash for stop sounds

# **Reading Mastery Signals**

- Saying Sounds:
  - Hold up finger: slow sounds
  - Hand Drop: Say it fast
- Rhyming Signals:
  - Loop stopping for one second at ball then
     slash to arrow (loop & slash): for sounding out
  - Slash quickly: For say it fast
- Sound out:
  - Loop-Loop





#### **Error Correction**

#### **General Corrections**

- I. Student not attending:
  - Teacher corrects by saying, "Let's try again", and returns to beginning of task.
  - Review effective teaching practices (VR, prompt procedures, error correction)
- 2. If a student fails to answer when the signal is given...
  - Teacher corrects by saying, "I have to hear everybody", and then returns to the beginning of the task.
- 3. If a student responds either before or too long after the signal...
  - Teacher corrects by saying, "I need everybody to respond on my signal", and returns to the beginning of the task.
  - Alternatives:
    - "You have to wait until I signal. Let's try it again."
    - "You have to answer as soon as I signal."

#### General Corrections cont.

- If students are not responding consistently, use the following format...
  - "Keep your place"
  - "Eyes on me"
  - "Get ready"
  - Signal/call individual student's name
  - Verify in complete sentences
  - Turn individual responses into group responses

# Statement Corrections

All statement corrections start with "My turn" and end with "starting over"

#### **Error Correction Template:**

- Model: "My turn"
- Lead: "Say it with me"
- Test: "Your turn by yourself"
- Verify: "Yes, \_\_\_\_"
- Starting Over: Start at beginning of task

## Correcting Alternative Responding

Used when student responds with correct but alternative response (different from response on presentation book).

- Teacher indicates response is correct by saying, "right, some people call this \_\_\_\_\_, but it is also called a \_\_\_\_. Let's use \_\_\_\_."
- This is important for consistency across students and on future lessons.

### Correct but Inappropriate Responding

- Teacher immediately stops the students and follows this sequence:
- Models an acceptable way of responding (Example: "I can say that sentence the nice way. Listen. I am touching my head.")
- Leads students through response ("Let's all say that sentence the nice way")
- Tests students ("Let's hear you say that sentence the nice way all by yourselves").

#### **Motivation**

# Important Considerations on Motivation and Reinforcement:

- Tell student the goal
- Use specific praise
- Don't spend a great deal of time in reinforcement...reinforce quick and move on.
- Challenge the student
- Use tangible reinforces if necessary...Check for MOTIVATION!
- Don't forget differential reinforcement and student's VR applies here too!!
- Reinforce only when student performs according to acceptable standards.

### **Monitoring Progress**

#### **Assessment Tests**

- DI programs are designed to give teachers a complete, self contained system for monitoring student performance.
- They include curriculum-based Mastery Tests .
- These tests, which are given to students either individually or in groups after specified lessons have been completed, measure specific skills or concepts that have been taught during preceding lessons.

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# Who is ready for DI?

#### **Learner Profiles**

## Pre-requisite skills

- Complete or mostly complete VB-MAPP (i.e., 4 year old language
- level).
  - Tacting parts and features of objects
  - Tacting adjectives
  - Tacting by class
  - Tacting yes and no
  - Tacting two-component labels (noun verb)
  - Tacting two-component labels (noun adjective)
  - Uses carrier phrase when labeling nouns with verbs or adjectives
     Beginning to label prepositions
  - Beginning to label pronouns
  - Beginning to use appropriate autoclitic phrases/sentence structure
- With some learner's it may be beneficial to start the program prior to completing the VB-MAPP in order to teach some of the more complicated Level 3 skills using the DI curricula.

# Language for Learning: Who is it for?

- Five and six year olds in Kindergarten and first grade with less than adequate language knowledge and skill for their age.
- Four year old children in preschool programs.
- Primary age children in bilingual and ESL programs
- Primary age children in Title I and Special Education programs
- Students in speech correction and language classes.

## Language for Learning Content

- Actions
- Descriptions of objects
- · Information and background knowledge
- Instructional words and problem-solving concepts
- Classification
- Problem-solving strategies and applications

## Language for Learning: Pre-requisites

- Echo words/phrases
- Discriminate and Tact many items and actions
- Respond to simple yes/no questions
- Perform simple actions on command
- Describe objects (parts/features)
- Respond to name

#### Language for Thinking

- Intended for children who are older or have higher skills than those placed in *Language for Learning*.
- Children who have completed Language for Learning.
- First and Second graders with less than adequate language knowledge and skill for their age and have trouble comprehending what they read.
- Older children in bilingual and ESL programs
- Primary age children in Title I and Special Education programs
- Students in speech correction and language classes.

### Language for Thinking Content

- Information and background knowledge
- · Reasoning and critical thinking
- Vocabulary development
- Observing and describing
- Comprehension concepts
- Interpreting graphic displays

### Language for Writing

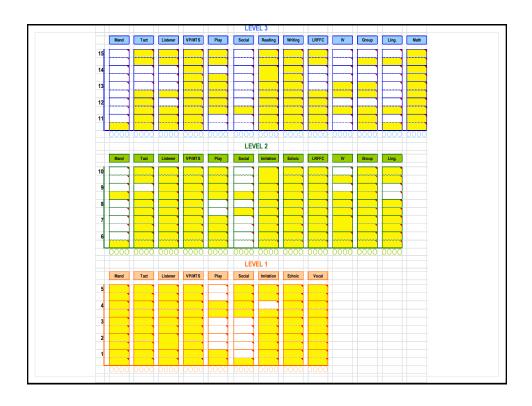
- Second through fifth graders who have completed Language for Learning and Language for Thinking.
- Students placed in program should be reading and writing at the end of second grade or beginning of third grade level and have adequate knowledge of basic spoken English.

#### Pre-Requisite Skills for Reading Mastery

- Echo sounds/words
- Imitate prosody...speed (fast and slow)
- Imitate prosody...duration (sustain a sound for about 3 seconds)
- Follow simple instructions
- Ideally, should have completed at least first 40 lessons of Language for learning or demonstrate equivalent skills

### Pre-Requisite Skills for Distar Math

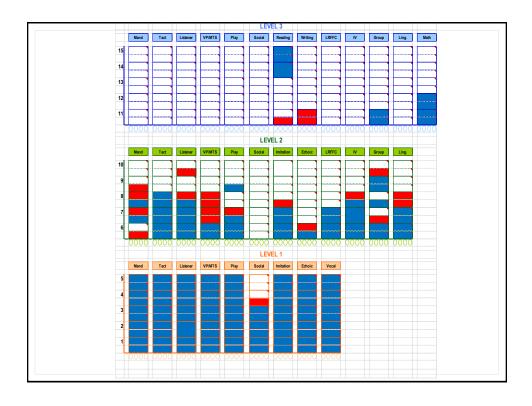
- Echo words/phrases
- Respond to simple yes/no questions
- Respond to "Stop"
- Rote count
- Match-to-sample
- Replicate patterns/sequences
- Prepositions

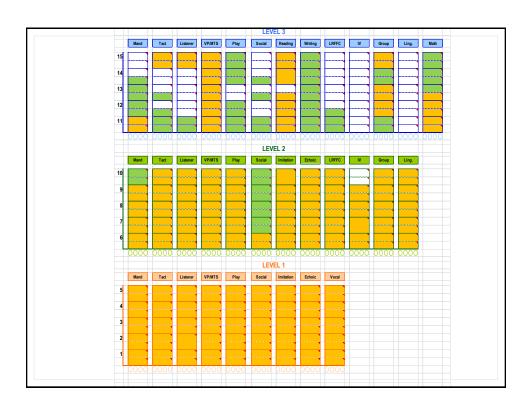


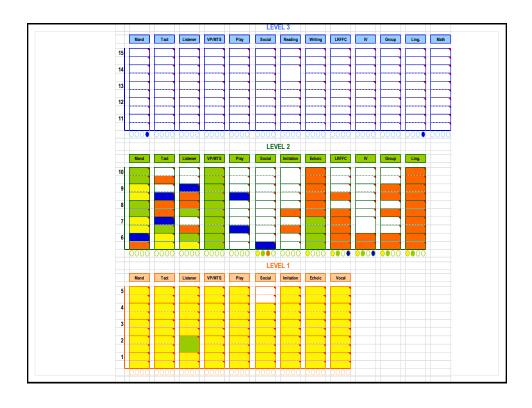


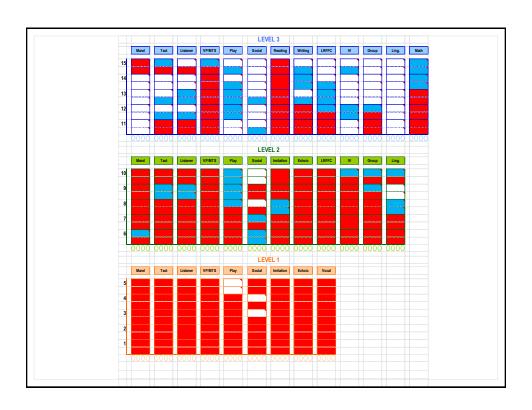


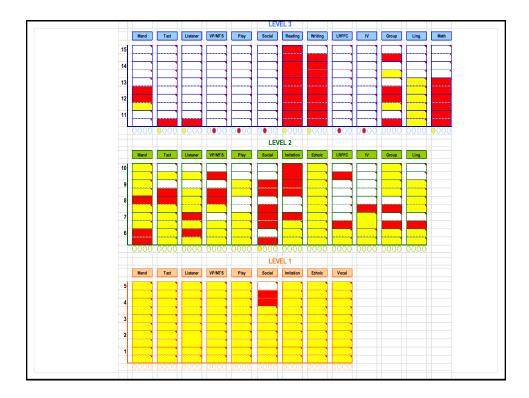












# So what do I teach if he/she is not ready?

- Start with "show me ready":
  - Ready hands (hands folded on lap)
  - · Seated in chair
  - Feet on floor
  - Body and eye gaze oriented toward teacher
- Teach first in imitation, then transfer to listener response

#### Other critical skills:

- Choral/unison: Students' ability to respond along with others in a group setting (responding on signal).
- Individual Responding: Student's ability to respond when called on in a group setting.
- Waiting for others individual responses: Student's ability to remain quiet and attentive when it is another student's individual turn to respond.

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