Systematic Instruction: Teaching to Promote Success

Presented by: Teri Johnson, MRA, CESP

What is Systematic Instruction?

A universally effective approach to teaching when an individual experiences difficulty learning tasks or activities that includes:

- Preparing to teach (task design and task analysis),
- Individualizing teaching strategies, and
- Assessing progress

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An approach that evolved in response to once widely accepted and devastating beliefs…

- That diagnostic labels and/or IQ scores predicted an individual's ability to learn.
- A quote from 1866 by Edouard Seguin, considered by many to be "Father" of the United States movement toward institutionalization.

"Only a medical man could fully appreciate the educational needs of idiots while also providing the necessary diagnostic tools to separate the idiot, who was amenable to training, from the idiot encumbered by other disabilities, who was not."

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In the past, lack of expectation was often reflected in the naming of services…

- Established 1906 - Rome State Custodial Asylum for Unteachable Idiots
- Established 1917 - Faribault School for the Training of Imbeciles and the Custody of Idiots
- Formal Implementation of Special Education 1975 – "Tracks" developed for TMR's, EMR's and Custodial services
- Special Education High School Classrooms 2000 – Life Skills vs. Transition

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In the past, lack of expectation was often reflected in the naming of services…

- Sheltered workshop movement resulted in three main types of workshops (Gold, 1972)
  - Transitional Shop – clients come in from variety of settings and prepare for competitive employment
  - Extended Care or Terminal Shop – clients believed to be incapable of achieving competitive employment remain for indefinite periods
  - Comprehensive Shop – attempts to service both types of clients

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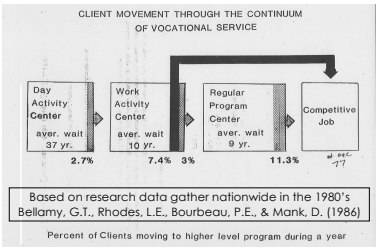
The reality of the "flow through" or "readiness" model…



Based on research data gather nationwide in the 1980's
Bellamy, G.T., Rhodes, L.E., Bourbeau, P.E., & Mank, D. (1986)

Percent of Clients moving to higher level program during a year

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Emerging leaders combined research and values in developing teaching strategies Late 60's into 70's and beyond

- Marc Gold, University of Illinois, Try Another Way
- Paul Wehman, Virginia Commonwealth University, Rehabilitation Research and Training Center
- Lou Brown, University of Wisconsin
- Tom Bellamy, University of Oregon, Specialized Training Program

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Fundamental beliefs – shared values…

- Individuals previously labeled unable to learn had much more potential than anyone realized.
- All people with disabilities should have the opportunity to live their lives much like everyone else.
- Everyone can learn if we can figure out how to teach them.
- A lack of learning should first be interpreted as insufficient use of teaching strategies rather than inability of the learner.

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We must presume competence…

"Assume a person has intellectual ability , provide opportunities to be exposed to learning, assume the person wants to learn and assert himself/herself in the world."

-Douglas Biklen
Syracuse University

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Essential Component in Moving Forward with Employment First

- Original focus of SI research was for those with greater challenges in learning new and complex tasks and activities
- Approach to task design, task analysis and teaching strategies allow for consideration of tasks or jobs that may have been perceived as too complex or technical for supported employment candidates

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Essential Component in Moving Forward with Employment First

- Individualizing use of SI with all learners adds value (independence, success, capacity, satisfaction)
- Teaching strategies focus on increasing independence throughout the task versus a "fade at the end" approach
- A weapon to weaken and destroy the "virtual" readiness model

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Systematic Instruction Needed When:

- Loose teaching (incidental or casual learning) is not getting the person where they want or need to be
- Learning style is best accommodated by systematic instruction
- Activity or task has element of risk if not done correctly

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Systematic Instruction Important Components

Preparing to teach

- Task Design
- Task Analysis

Teaching

- Delivering and fading assistance
- Identifying and teaching to cues
- Error correction
- Assessing progress
- Addressing difficult steps

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Purpose of Task Design: Determining Most Appropriate Method for Completing Task

"Most appropriate" will depend:

- What is current design? Has work been standardized?
- Changes to accommodate physical ease and efficiency?
- Designed to support learning and independence?
- Opportunity to determine performance standards: What are expectations for accuracy and productivity?

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Task Design: Opportunity to Identify Cues (It's All About the Cue)

What do you see that would make this task/job easier to learn? (**natural cues** within the job or task that you will teach to)

- The natural, **existing cues** that exist in a task are the "clues" about what step is next.
- We need to be prepared to teach to the cues in the task from the first time through or **we run the risk of becoming the "cue."**
- Are there opportunities to highlight or add **cues** ?

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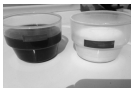

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Task Design Strategies

- What do you learn about this task/job that would make it easier to do? (physical demands of job or task: lifting, fine motor, difficult manipulations)
- What might you add to make it easier to remember? (self-management strategies: pictures, lists, templates)
- Is there an opportunity to design so that possibility of errors would be eliminated or minimized? (Error Proofing)

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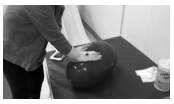

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Task Analysis- What, When, and Why

- **WHAT:** Breaks the task into discreet, observable steps and lists in order
- **WHEN:** Following job analysis, identification of job tasks (standard work) and in response to individual need
- **WHY:** A useful tool when the complexity of the task is presenting challenges to the learner (or trainer)
- **WHY:** Focuses trainer attention on the specific demands of the task and cues within the task

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Guidelines in Constructing a Task Analysis

- Individualize always: Specific to individual, task and trainer
- Prior to writing, practice with learner including any changes to task design
- Break into steps and list in order; including cue for each step
- Record in clear, concise manner

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Keep in Mind

The task analysis **lists** the steps, it does not **teach** the steps.

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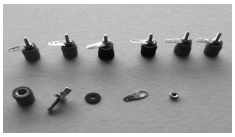

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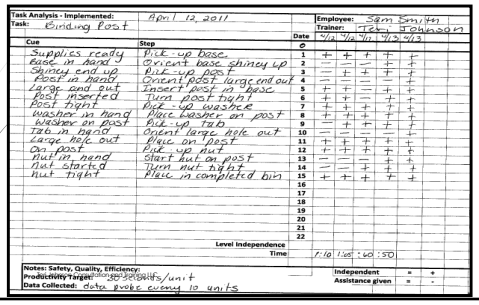
Binding post – cue, step and data



Task Analysis - Implemented: April 12, 2011		Employee: Sam Smith
Task: Binding Post		Trainer: Stephanie
Cue	Step	Date 4/2 4/6 4/11 4/12 4/13
		0
Supplies ready	Pick up base	1 + + + + +
Base in hand	Orient base shiney up	2 − − − + +
Shiney end up	Pick up post	3 − + + + +
Post in hand	Orient post large end out	4 − − − − +
Large end out	Insert post in base	5 + + − + +
Post inserted	Turn post tight	6 + + − + +
Post tight	Pick up washer	7 + + + + +
Washer in hand	Place washer on post	8 + + + + +
Washer on post	Pick up tab	9 − + + + +
Tab in hand	Orient large hole out	10 − − − − +
Large hole out	Place on post	11 + + + + +
On post	Pick up nut	12 + + + + +
Nut in hand	Start nut on post	13 − − − + +
Nut started	Turn nut tight	14 − − + + +
Nut tight	Place in completed bin	15 + + + + +
		16
		17
		18
		19
		20
		21
		22
Level Independence		
Time		1:10 1:05 :60 :50

Notes: Safety, Quality, Efficiency:
Productivity Target: 90 sec/unit
Data Collected: data probe every 10 units

Independent = +
Assistance given = -

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Guidelines for Data Collection

- Collect data on a probe or intermittent basis (a sampling over time)
- Maintain consistent training throughout the probe (assist and correct as needed)
- Give credit (+) if accurate and independent
- No credit (-) is given if error or assistance is given
- At end of probe, count number of steps (-) and record

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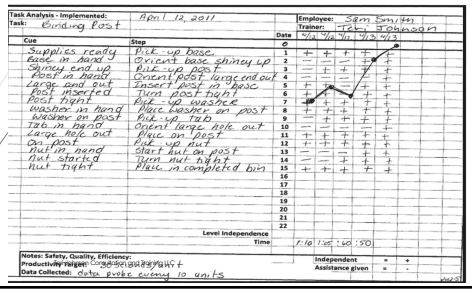
Binding Post – Data graphed



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		16
		17
		18
		19
		20
		21
		22
Level Independence		
Time		1:10 1:05 :60 :50

Notes: Safety, Quality, Efficiency:
Productivity Target: 90 sec/unit
Data Collected: data probe every 10 units

Independent = +
Assistance given = -

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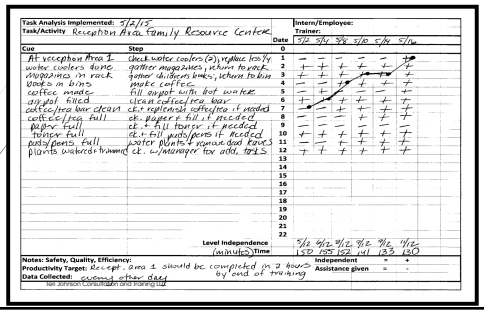
Task Analysis – Larger Step Size



Task Analysis Implemented: 5/2/13		Intern/Employee:
Task/Activity Reception Area, Family Resource Center		Trainer:
Cue	Step	Date 5/2 5/4 5/8 5/10 5/14 5/16
		0
At reception Area I:	Check water coolers (2), replace bottle	1 − − − − +
water coolers done	gather magazines, return to rack	2 + + + + +
magazines in rack	gather children's items, return to bin	3 + + + + +
books in bins	make coffee	4 − − + + +
coffee made	fill carafe with hot water	5 − + + + +
carafe filled	clean coffee/tea bar	6 + + + + +
coffee/tea bar clean	ck + replenish coffee/tea if needed	7 + − + + +
coffee/tea full	ck napkins, fill if needed	8 − − + + +
paper full	ck + fill tissue if needed	9 − − − − −
tissue full	ck + fill pens if needed	10 + + + + +
pens/pens full	water plants + remove dead leaves	11 − − + + +
plants watered + trimmed	ck. w/manager for add. tasks	12 + + + + +
		13
		14
		15
		16
		17
		18
		19
		20
		21
		22
Level Independence (minutes) Time		5/2 5/2 5/2 5/2 5/2 5/2
		150 105 152 141 133 130

Notes: Safety, Quality, Efficiency:
Productivity Target: Re-kept. Area 1 should be completed in 2 hours by end of training
Data Collected: several other RAs

Independent = +
Assistance given = -

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Task Analysis – Smaller Step Size

Task Analysis Implemented: 6/6/17
Task/Activity: Replace Toner Cartridge - HP 6510
Intern/Employee:
Trainer:

Cue	Step		Date	6/6	6/10	6/16	6/13
Toner light flashing	gather black + color cartridges	1					
cartridges extended	place hands under control panel	2					
fingers under panel	lift slowly until "clicks" open	3					
label open	place finger on bottom rim black	4					
finger on bottom rim	apply pressure down and out - remove	5					
cartridge removed	place in recycle container	6					
in container	place finger on bottom rim color	7					
finger on bottom rim	apply pressure down + out - remove	8					
cartridge removed	place in recycle container	9					
in container	remove black cartridge from package	10					
cartridge in hand	pull tape from cartridge	11					
tape removed	insert cart. into receipt. - #3 up	12					
cartridge in #3 up	snap into place	13					
Snapped in	remove color cart. from package	14					
cartridge in hand	pull tape from cartridge	15					
tape removed	insert cart. into receipt. - #5 up	16					
cartridge in - #3 up	snap into place	17					
snapped in	close lid firmly	18					
lid closed	press "ok" when prompt. to align	19					
page printed	file printed page in student file	20					
page filed		21					
		22					
	Level Independence			7/10	9/10	8/10	4/10
	Time			7	10	5	5

Notes: Safety, Quality, Efficiency:
Productivity Target: 2-3 minutes
Data Collected: every 5 replacements

Independent = +
Assistance given = -

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Task Analysis Provides Functional Data

- Efficient method to track skill acquisition, productivity, and safety
- Sensitive to small gains
- Highlights steps that are difficult and may need change in design or teaching strategy
- Easy to interpret and share

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Biggest takeaway?

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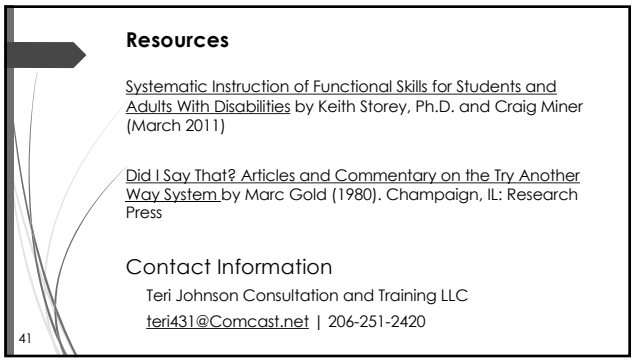
Resources
Systematic Instruction of Functional Skills for Students and Adults With Disabilities by Keith Storey, Ph.D. and Craig Miner (March 2011)
Did I Say That? Articles and Commentary on the Try Another Way System by Marc Gold (1980). Champaign, IL: Research Press
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