University of Houston Clear Lake

CADD
CENTER FOR AUTISM AND DEVELOPMENTAL DISABILITIES

Preparing Individuals with Autism for Life After High School (Part 1)

Dorothea C. Lerman, Ph.D., BCBA-D
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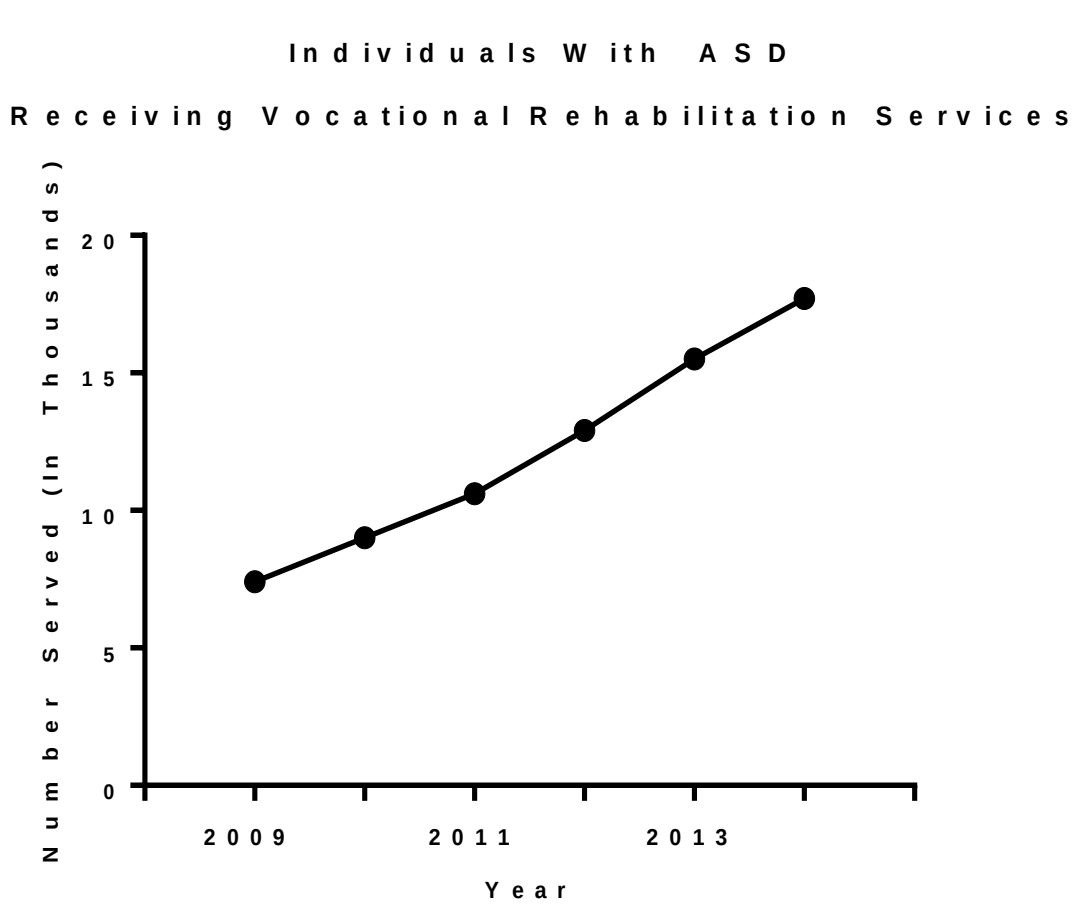
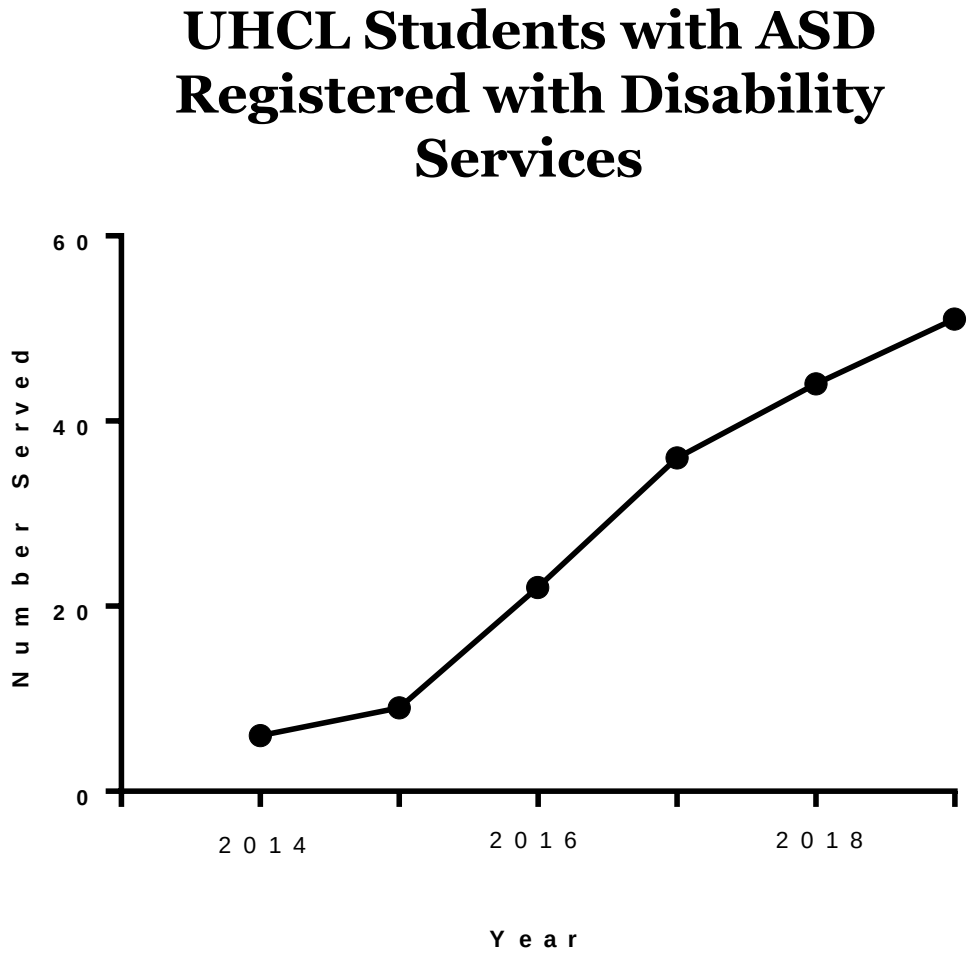
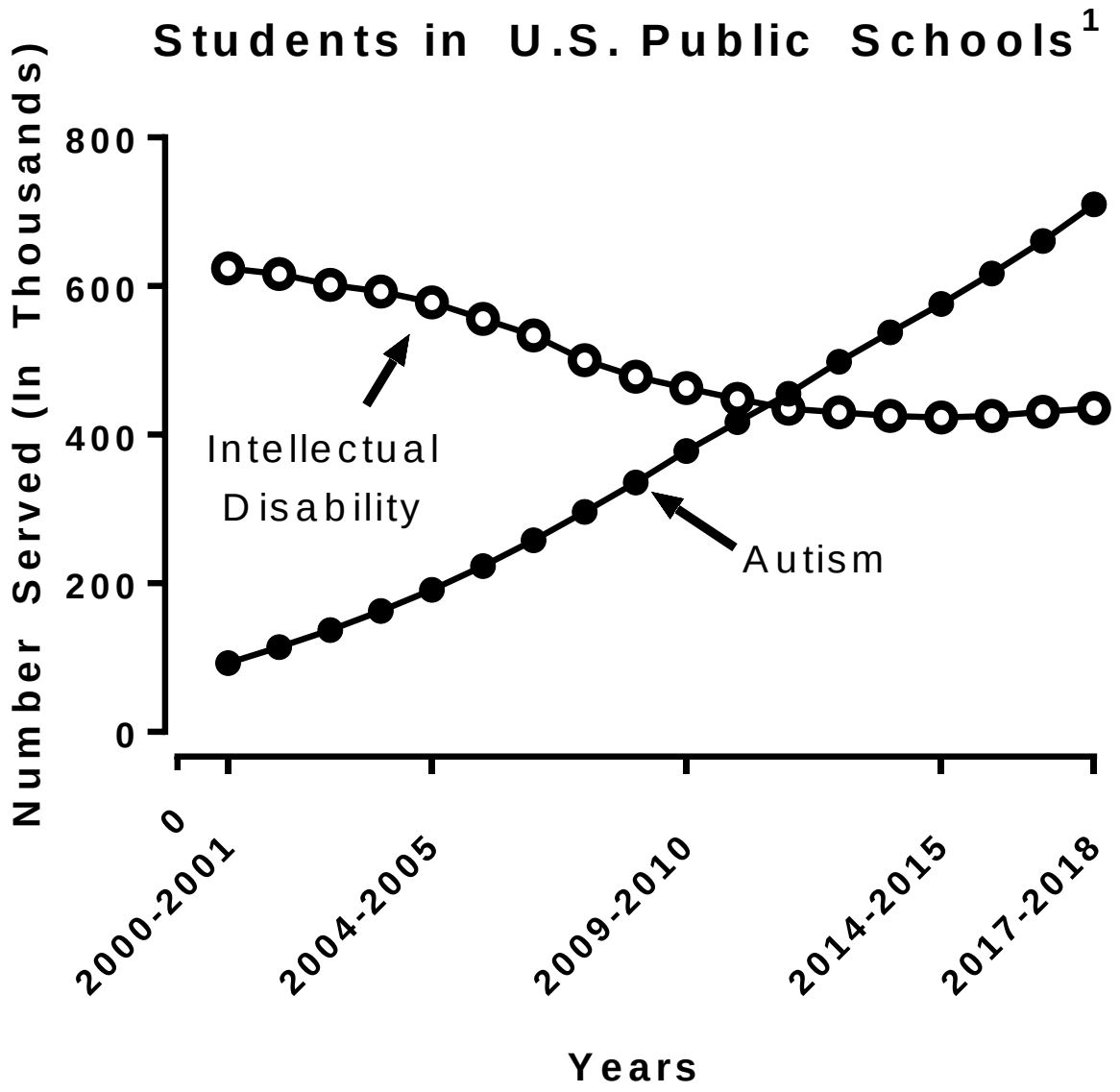
A Drop in the Bucket?





Roux, Anne M., Rast, Jessica E., Anderson, K.A., and Shattuck, Paul T. National Autism Indicators Report: Vocational Rehabilitation. Philadelphia, PA: Life Course Outcomes Research Program, A.J. Drexel Autism Institute, Drexel University, 2016



[1] U.S. Department of Education, Office of Special Education Programs, Annual Report to Congress on the Individuals with Disabilities Act (retrieved 12/21/18)

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Preparing and Supporting Individuals with Autism For Success in Employment

My Collaborators

- Carolyn Grob
- Justin Hunt
- Channing Langlinais
- Courtney Laudont
- Trena Rouse
- Natalie Villante
- Bridgette White
- Dan Wright

Issues and Problems

Employment of Individuals with ASD

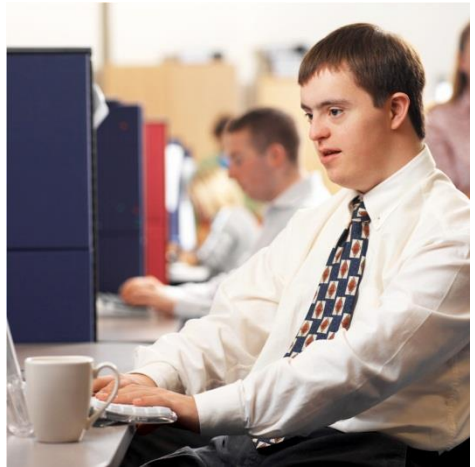
- Employment Rates

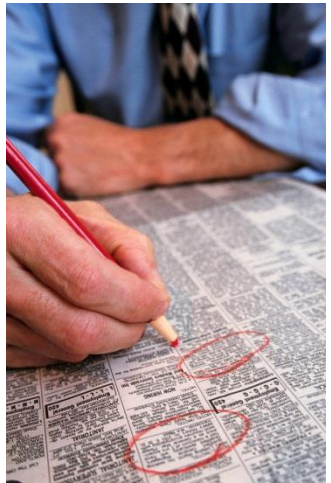
  Overall: 25% - 55% (Bush & Tasse, 2017; Newman et al., 2011; Shattuck, 2012)

  With VR services: 37%-60% (Alverson & Yamamoto, 2017; Roux et al., 2016)

- Outcomes flat/declined across 10 yrs; access to services had minimal impact (Taylor & Mailick, 2014)
- Outcomes positively related to receipt of job-placement and on-the-job support services, BUT less likely to receive these (Nye-Lengerman, 2017)
- VR services more costly than for any other disability

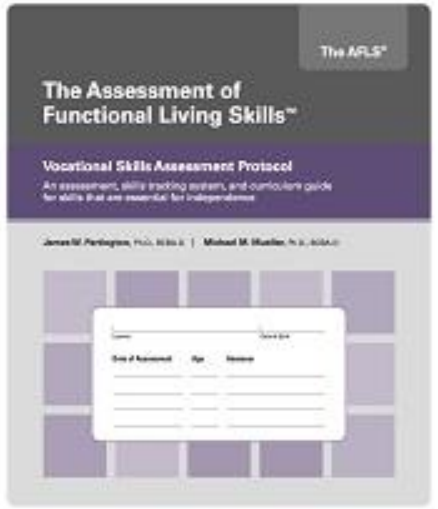
Potential Targets for Vocational Assessment and Intervention





Potential Targets: What Should We Teach?

- Securing Employment
  - Completing applications
  - Interviewing
- General Vocational Skills
  - Following instructions
  - Managing time
  - Navigating job site
- Job-Specific Skills
- Job-Related Social Skills
  - Asking for assistance
  - Responding appropriately to feedback
- Problem Solving
- Hygiene/Grooming



Why Vocational Difficulties?

- *Verbal report* of potential factors (Baldwin et al., 2014; Hurlbutt & Chalmers, 2004; Muller, Burton, & Yates, 2003)
  - Inadequate job training
  - Difficulty interacting with supervisors/co-workers
  - Unclear expectations

- VR primary impairment classification (Nye-Lengerman, 2017; Roux et al. 2016):
  - Psychosocial – ~45%
  - Cognitive – ~43%
  - Communication – ~4%

Potential Targets:
What Do Employers Care About Most?

Surveys:

- Follows instructions
- Shares information
- Respects others / Offers to help
- Requests assistance
- Clarifies instructions
- Responds appropriately to criticism
- Is dependable/On time
- Shows personal integrity/honesty

(e.g., Foss & Peterson 1981; Ju et al. 2012; McConaughy et al 1989; Salzberg et al. 1986)

Potential Targets:
What Do Employers Care About Most?

Reasons For Termination/Problems on the Job:

- Disruptive/distractive/anti-social behavior
- Lack of social awareness
- Interactions w/ supervisors & co-workers

(Butterworth & Strauch, 1994; Cheney & Foss, 1984; Ford et al., 1984; Greenspan & Shoultz, 1981; Mueller, 1988)

Potential Targets: What Should We Teach?

Some Examples

- Securing Employment
  - Completing applications
  - Interviewing
- General Vocational Skills
  - Following instructions
  - Managing time
  - Navigating job site
- Job-Specific Skills
- Job-Related Social Skills
  - Asking for assistance
  - Responding appropriately to feedback
- Problem Solving
- Hygiene/Grooming

Research on Vocational Interventions for Individuals with Autism

- Focus on those with more severe disabilities
- Few target “soft skills” related to *job retention*

Assessing Job-Related Social Skills

- Caregiver or Staff Interviews/Checklists
  - Scale of Job-Related Social Skill Performance (SSSP;Bullis et al., 1993)
- Client Verbal Report (Self-report/Knowledge-based tests)
  - Test for Interpersonal Competence for Employment (TICE; Bullis & Foss, 1986); Scale of Job-Related Social Skill Knowledge (SSSK;Bullis et al., 1993)

Behav Analysis Practice (2017) 10:323–336
DOI 10.1007/s40617-017-0177-9

RESEARCH ARTICLE

A Clinic-Based Assessment for Evaluating Job-Related Social Skills in Adolescents and Adults with Autism

Dorothea C. Lerman[1] · **Bridgette White**[1] · **Carolyn Grob**[1] · **Courtney Laudont**[1]

Journal of Applied Behavior Analysis

JOURNAL OF APPLIED BEHAVIOR ANALYSIS 2019, **52,** 150–172 NUMBER 1 (WINTER)

ASSESSING AND TEACHING JOB-RELATED SOCIAL SKILLS TO ADULTS WITH AUTISM SPECTRUM DISORDER

CAROLYN M. GROB, DOROTHEA C. LERMAN, CHANNING A. LANGLINAIS AND NATALIE K. VILLANTE

UNIVERSITY OF HOUSTON–CLEAR LAKE

Clinic-Based Vocational Social and Problem-Solving Skills Assessment and Intervention

Approach for providing assessment/intervention if

- Individual not currently employed
- Limited/no access to job site
- Limited resources

- Goal: Evaluate skills directly and efficiently
- Employee "workroom," "supervisor's office," "break room"
- Supervisor absent; all sessions videotaped
  - "I will be in my office; let me know if you need anything"
- 10- to 15-min work sessions

Typical Tasks

- Folding shirts
- Rolling/sorting silverware
- Sorting objects
- Stuffing envelopes
- Stapling papers
- Alphabetizing books/folders/envelopes
- Cleaning room
- Stocking shelves
- Computer-related jobs (data entry, web searches, word processing)

© Can Stock Photo

Behaviors[1]	Evocative Situations
• Confirming statements	• Task instructions / feedback
• Request help – materials	• Materials missing/broken, equipment malfunctions
• Request help – task	• Vague instructions • Task not in repertoire
• Request help – completion	• Not enough work
• Response to corrective feedback	• Corrective feedback (clear, vague, conflicting

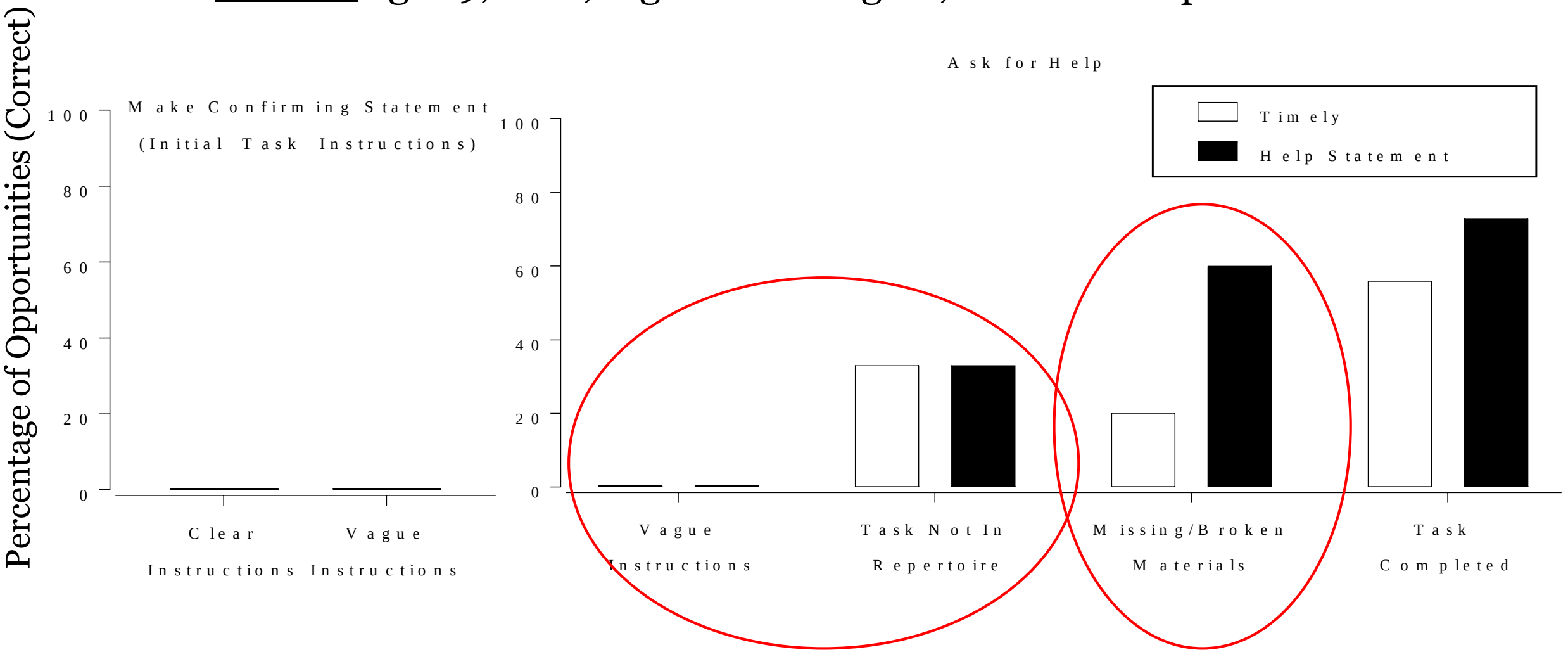
[1]Drawn from Butterworth & Strauch (1994); Ju, Zhang, & Pacha (2012); Montague & Lund (2009); Partington & Mueller (2015) and others

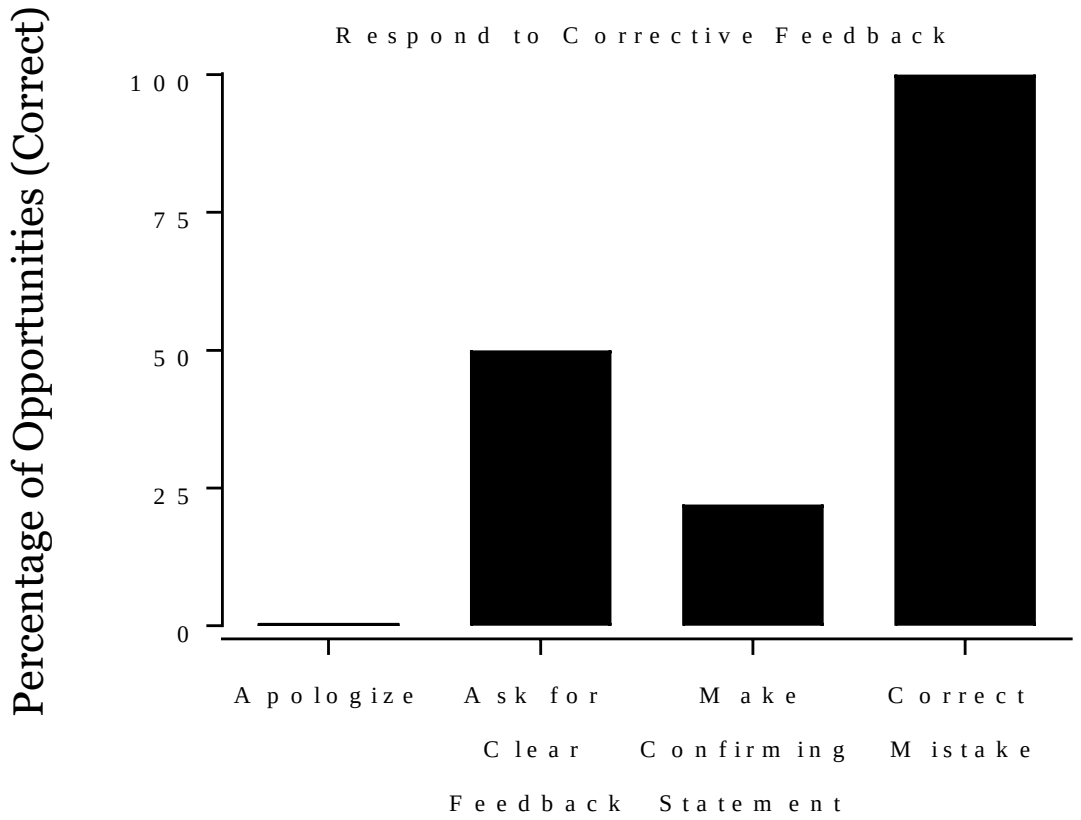
NEW! Problem-Solving Skills

Problems (Evocative Situations)	Behaviors
• Supervisor missing from office	• Complete other work; search again
• Given unfamiliar task	• Search for task instructions, then supervisor if needed
• Materials missing/broken, equipment malfunctions	• Search for necessary materials or equipment, then supervisor if needed
• Work completed	• Complete other work if available, then search for supervisor

Example Assessment:

Arthur: age 19; ASD; high school degree; volunteer experience




Respond to Corrective Feedback
Percentage of Opportunities (Correct)
100
75
50
25
0
Apologize
Ask for Clear Feedback
Make Confirming Statement
Correct Mistake

Intervention

Journal of Applied Behavior Analysis

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Considerations

How to provide effective intervention if

- Individual not currently employed
- Limited/no access to job site

Ideal interventions

- Efficient, low-cost, nonintrusive
- Transfer from therapy setting to job site
- On-site supervisors willing to implement

Grob et al. (2019)

- Brief Behavioral Skills Training (BST)
- Stimulus (Text) Prompts

Sequential introduction of additional components; require increasing amount of “buy in” from supervisor

- Antecedent (Vocal) Prompts
- Feedback
- Tangible reinforcement

Brief BST + Stimulus Prompts

- Components
  - Written/Spoken Instruction
  - Examples / Modeling
  - Practice (Role Play)
  - Feedback

- Text/pictures to cue participant (“help sheets”)

Stimulus (Text) Prompts

I understand.
I got it.
That makes sense.

I can do that.
I will do that.
Consider it done.

Stimulus (Text) Prompts

Can you show me how?

Could you demonstrate it?

I need a model.

How do I do it?

Stimulus (Text) Prompts
Problem Solving

Have I done this task before?

Did the supervisor give an example ?

Brief BST + Stimulus Prompts

- Performance criterion (6 consecutive)
- “Test” in relevant assessment situation(s)
- Stimulus prompts present in tests
- BST booster if performance criterion not met

Additional Components

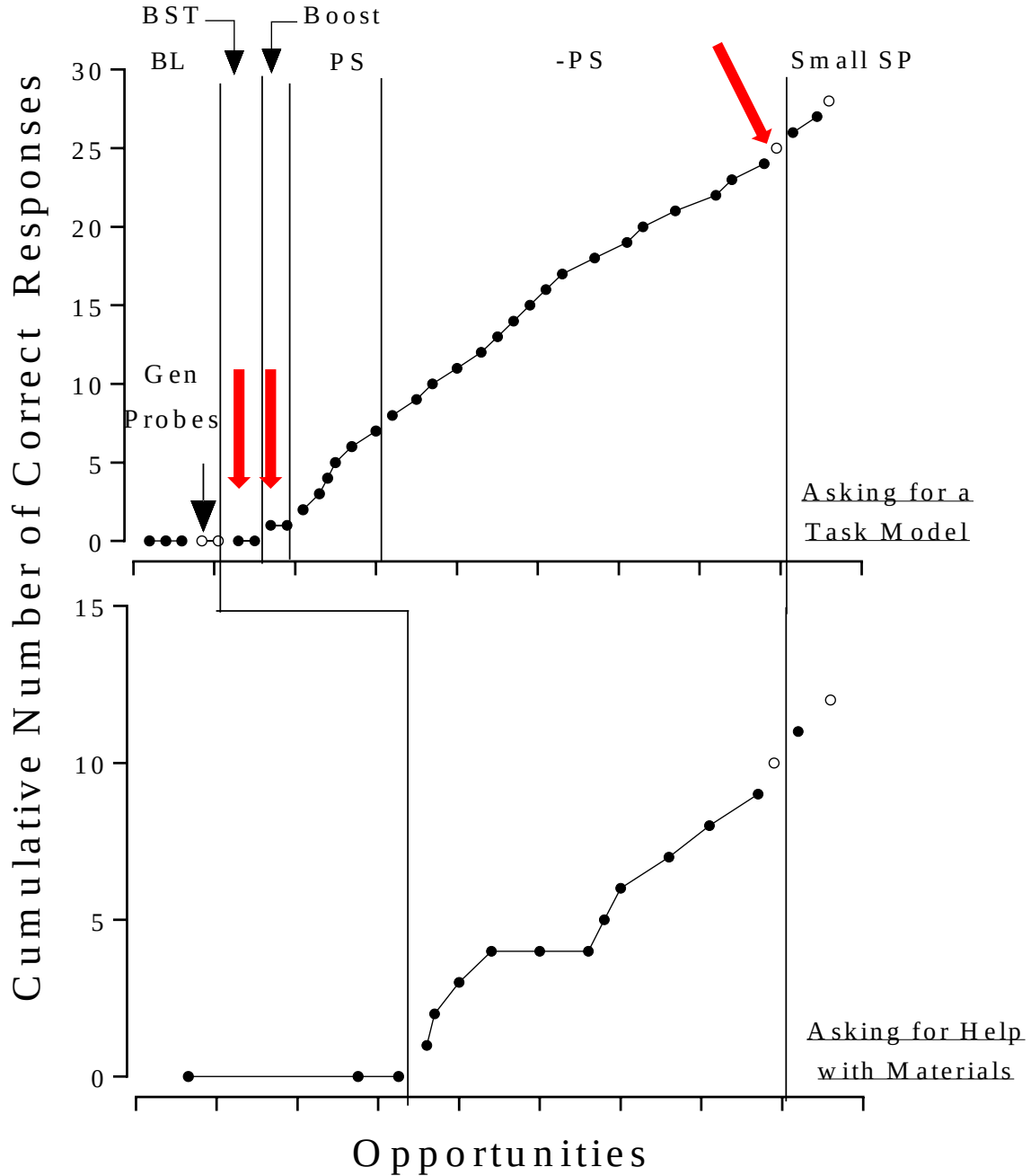
- Verbal prompt immediately prior to session

- Immediate feedback
  - Descriptive Praise
  - Correction

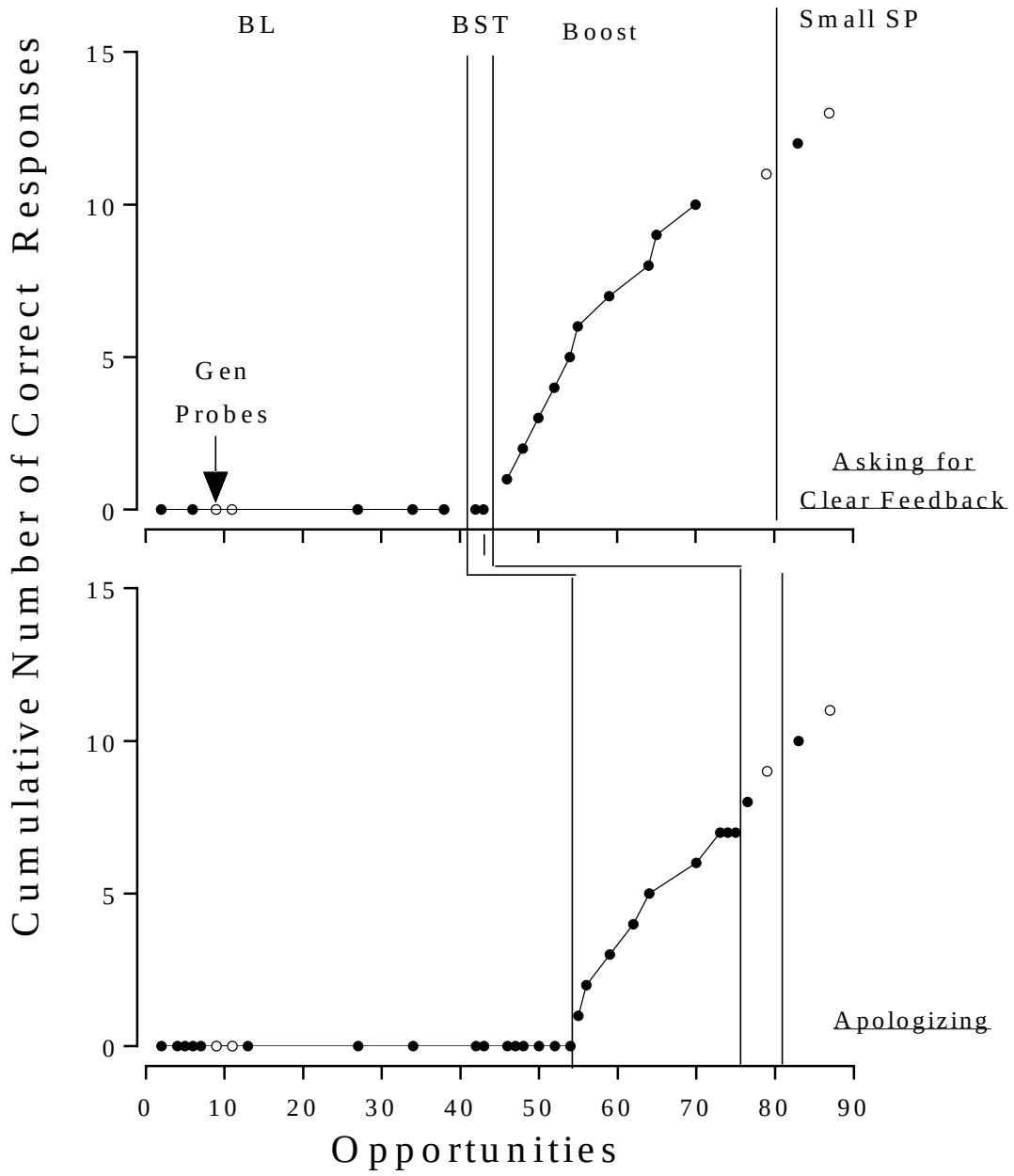
- Immediate feedback + tang Sr:
  - Tangible (e.g., $) + Descriptive Praise
  - Correction

- Participants
  - Arthur: age 19; ASD; high school degree; volunteer experience
  - Jerry: age 27, ASD, A.A in Criminology & A.A.S. in Information Technology Security; no experience
  - Vanessa: age 19, ASD, ADHD; high school degree; volunteer experience

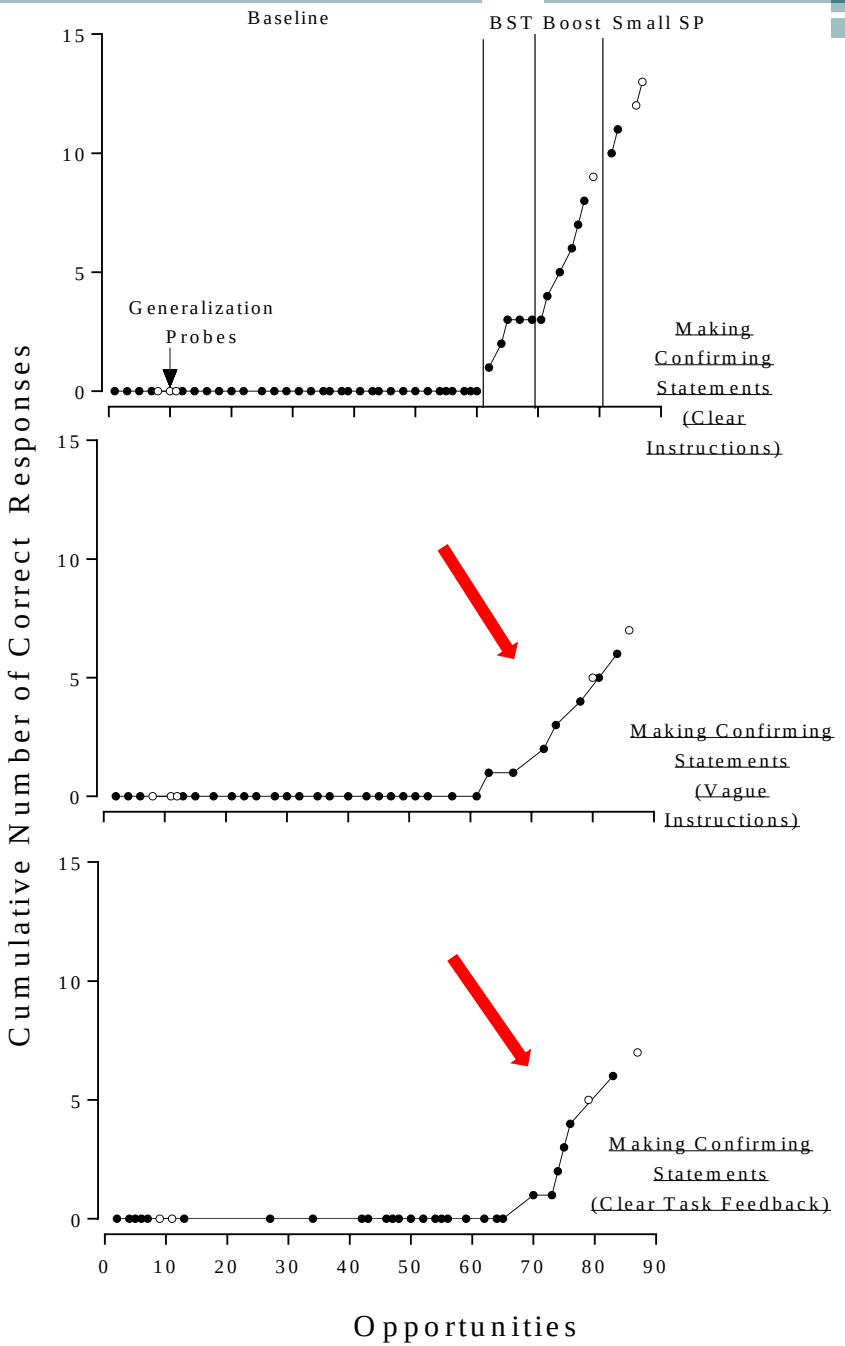
Arthur


BST
Boost
BL
PS
-PS
Small SP
Gen
Probes
Asking for a
Task Model
Asking for Help
with Materials
Cumulative Number of Correct Responses
Opportunities
0
5
10
15
20
25
30

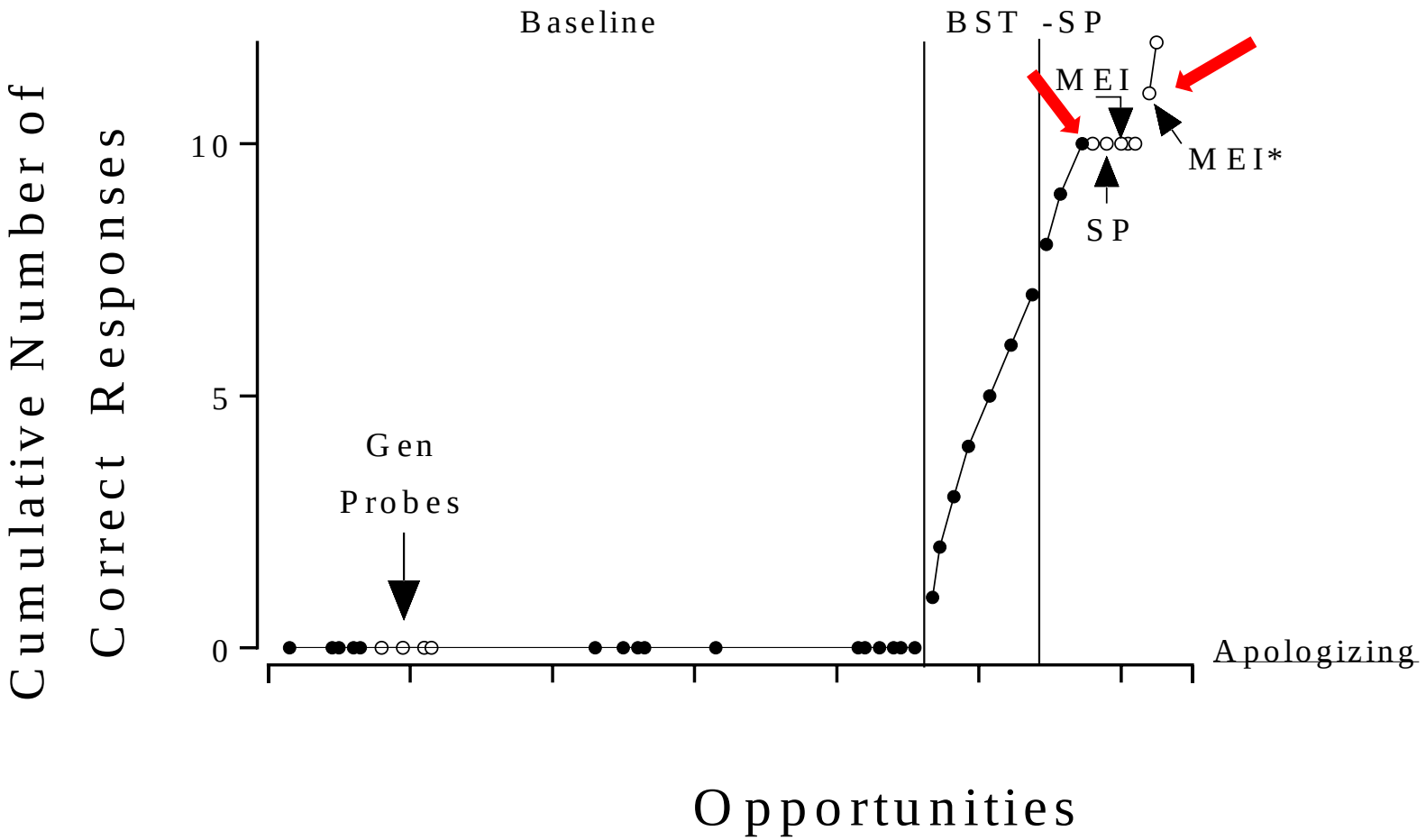
Arthur


BL
BST
Boost
Small SP
Gen
Probes
Asking for
Clear Feedback
Apologizing
Cumulative Number of Correct Responses
Opportunities
0
5
10
15
0
10
20
30
40
50
60
70
80
90

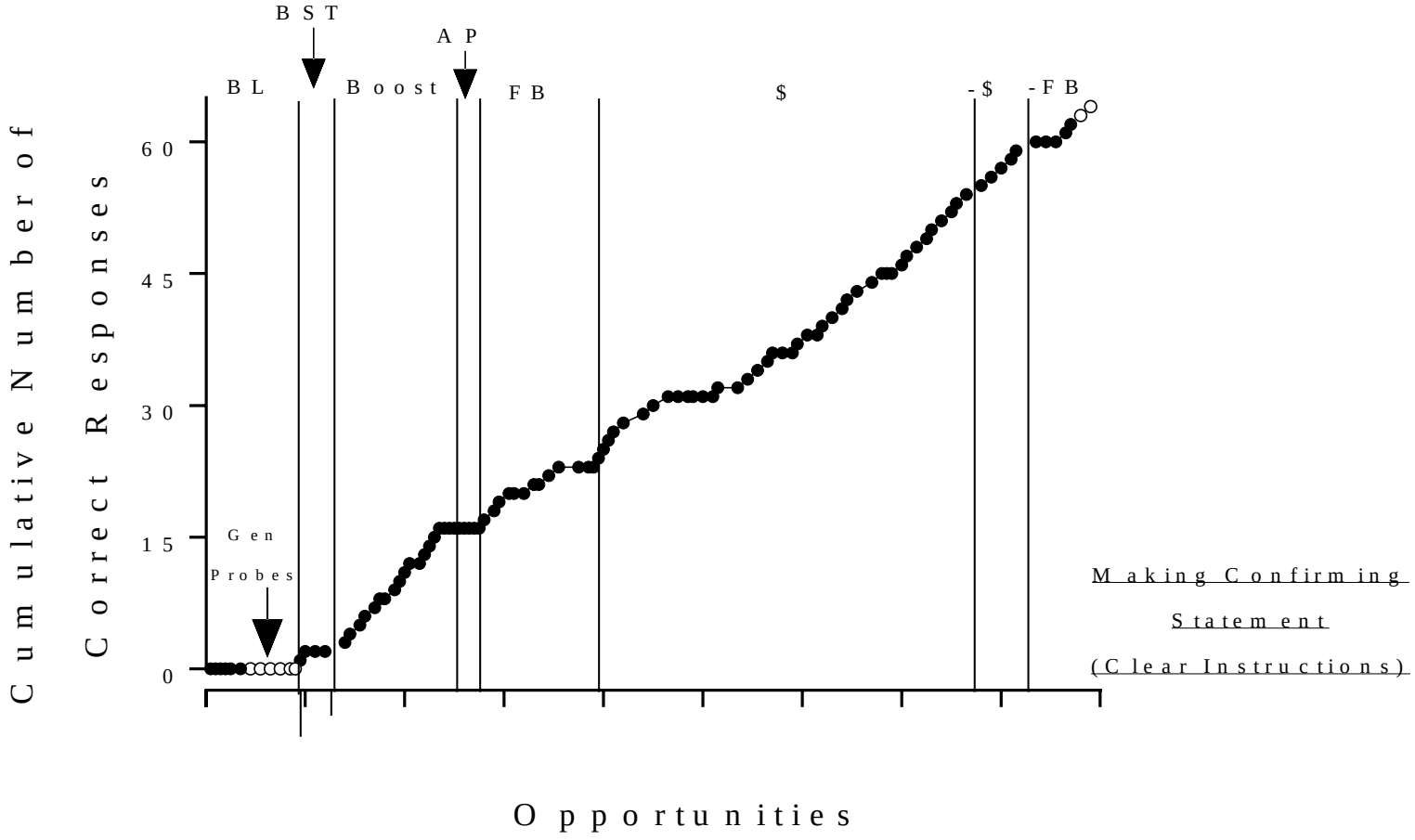
Arthur


Baseline
BST Boost Small SP
Generalization Probes
Making Confirming Statements (Clear Instructions)
Making Confirming Statements (Vague Instructions)
Making Confirming Statements (Clear Task Feedback)
Cumulative Number of Correct Responses
Opportunities
0
5
10
15
20
30
40
50
60
70
80
90

Jerry


Baseline
BST -SP
MEI
MEI*
SP
Gen
Probes
10
5
0
Apologizing
Cumulative Number of Correct Responses
Opportunities

Vanessa


B S T
A P
B L
B oost
F B
$
-$
-F B
60
45
30
15
0
Gen
Probes
C u m u l a t i v e N u m b e r o f
C o r r e c t R e s p o n s e s
M a k i n g C o n f i r m i n g
S t a t e m e n t
(C l e a r I n s t r u c t i o n s)
O p p o r t u n i t i e s

Conclusions

- Brief BST + stimulus prompts effective for 2 of 3 participants
- Stimulus prompts critical to generalization?
- Will these skills help them keep their jobs?
- Current focus: Problem-Solving Skills

Villante, Lerman, Som, & Hunt (in preparation) Teaching Adults with Developmental Disabilities to Problem Solve Using Electronic Flowcharts in a Simulated Vocational Setting

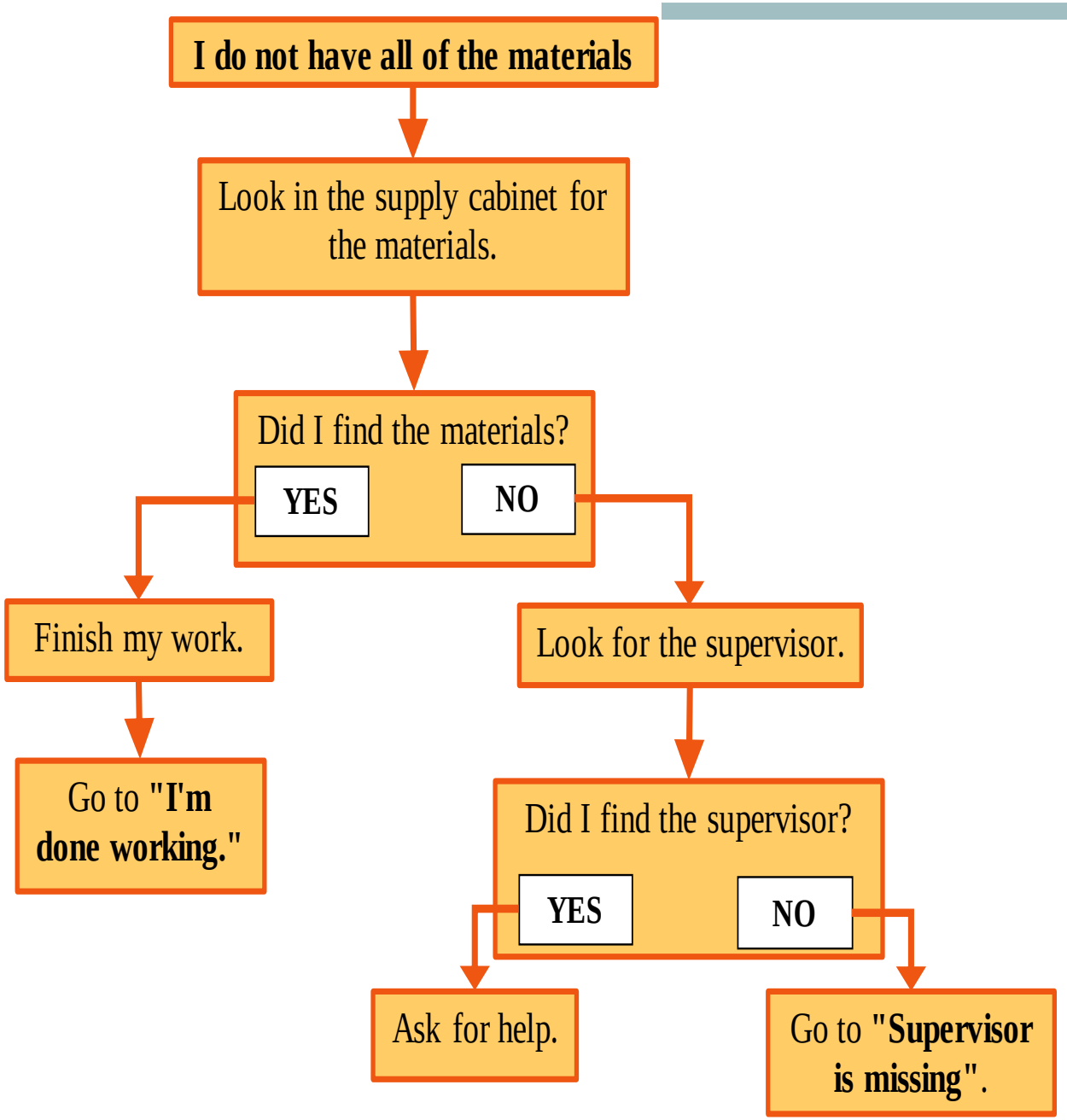
- What is problem solving?
  - Manipulating environmental stimuli that evoke resolving responses
  - Generating supplemental stimuli (e.g., spoken or written instructions) that function as S^D's for responses that may solve the problem (Donahue & Palmer, 2004; Skinner, 1984

Villante et al. (in preparation)

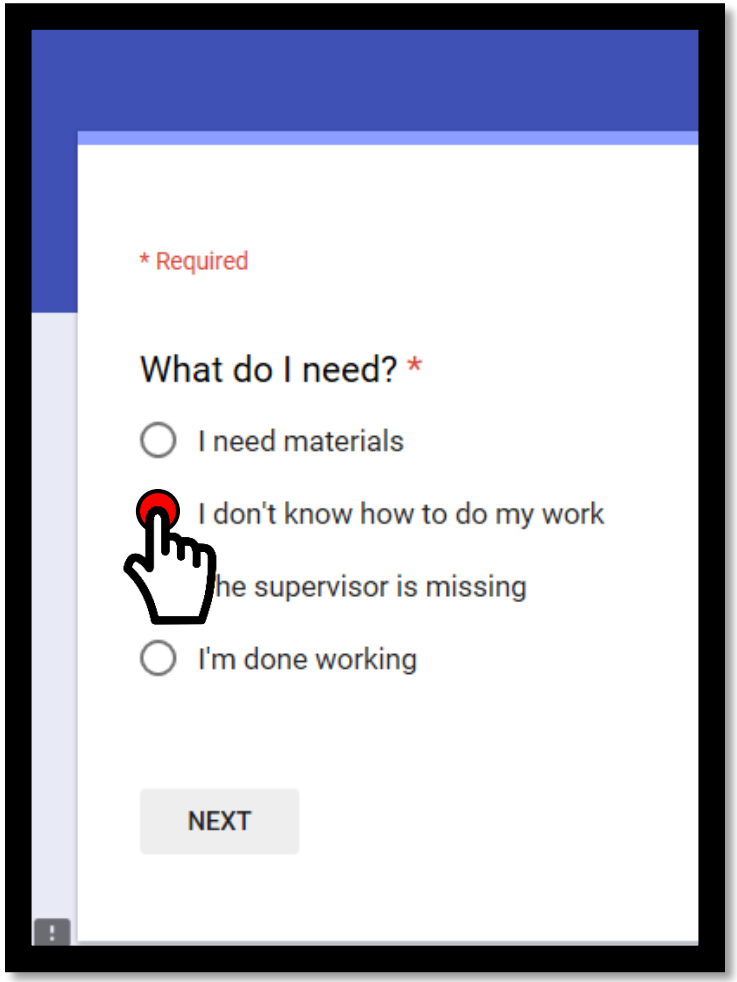
- Prior Research
  - Focused on one type of problem
  - Taught one solution to the problem
  - Used strategies that may be inappropriate on job site
  - Taught solutions rather than problem solving

- Lora et al. (2019)
  - Taught use of activity schedules (S^D's for obtaining task material)
  - Did not report data on use of activity schedule (problem solving)
  - Taught to solve one type of problem and solution

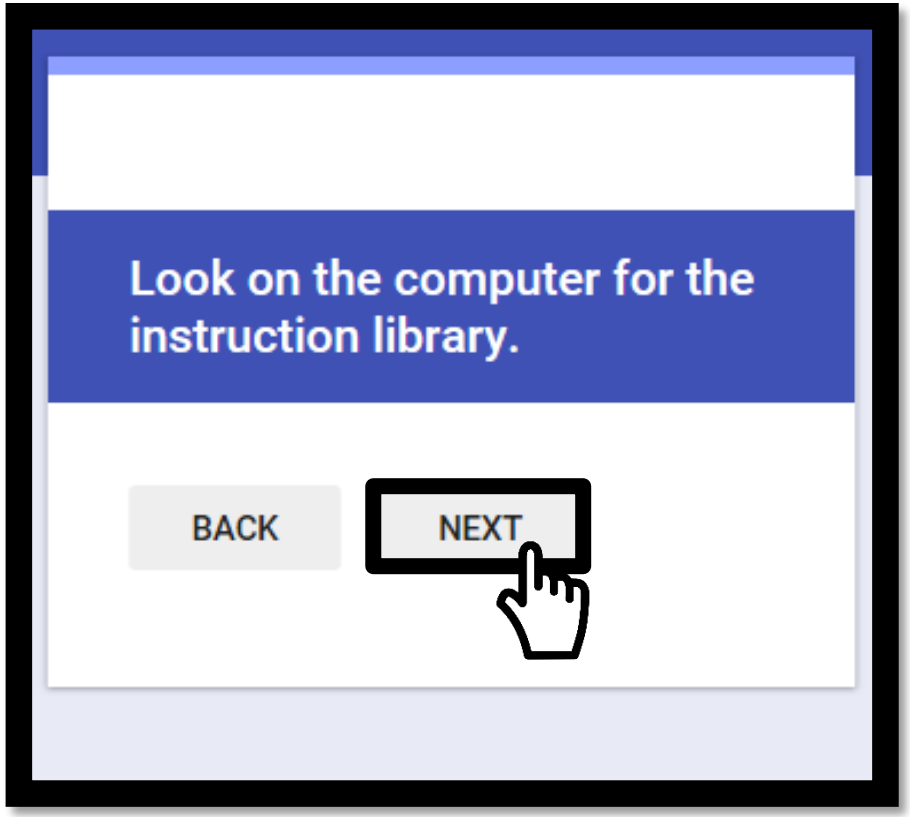
  - Flowcharts to identify solutions (Palmen & Didden, 2012)
  - Electronic modality (ipod, smartphone)


I do not have all of the materials
Look in the supply cabinet for the materials.
Did I find the materials?
YES
NO
Finish my work.
Go to "I'm done working."
Look for the supervisor.
Did I find the supervisor?
YES
NO
Ask for help.
Go to "Supervisor is missing".

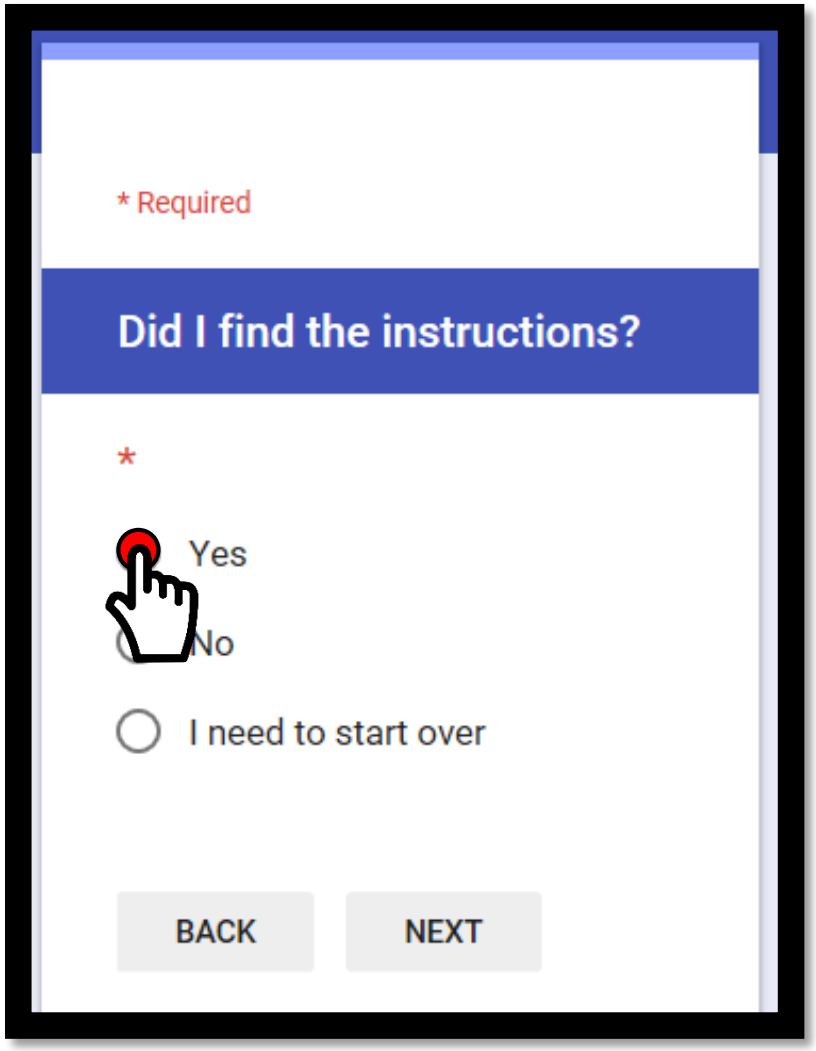
Electronic-based Flowcharts



Electronic-based Flowcharts



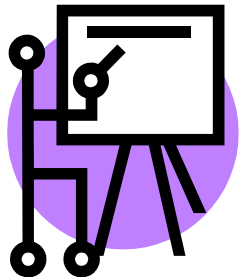
Electronic-based Flowcharts



- Participants
  - Zeke: age 17; ASD; Vineland – 79; home schooled; volunteer experience
  - Blake: age 25, ASD, Generalized Anxiety/ADHD, IQ – 79; high school degree; part-time employment (4 hrs/week)

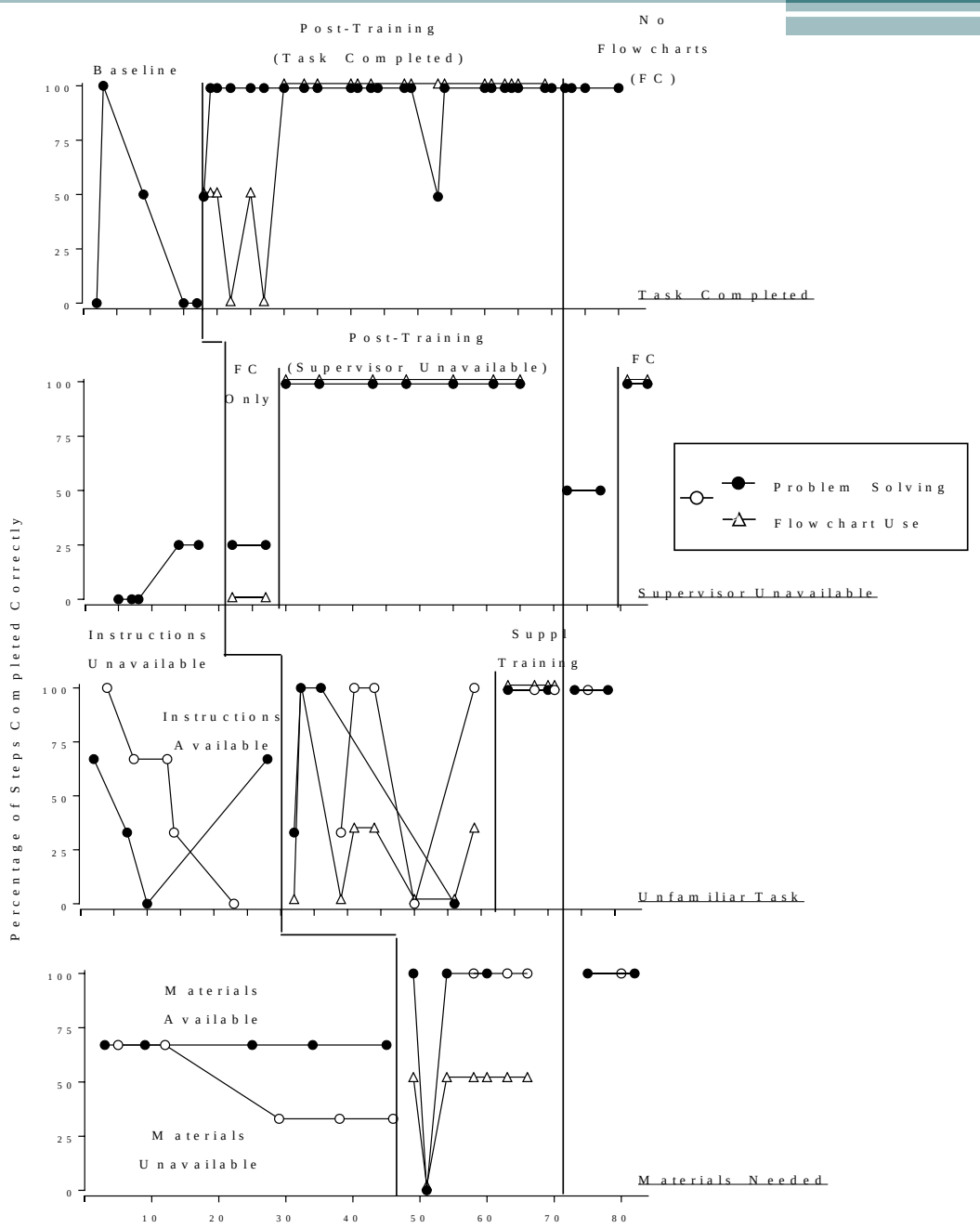
Brief BST

- Identify problems from video examples

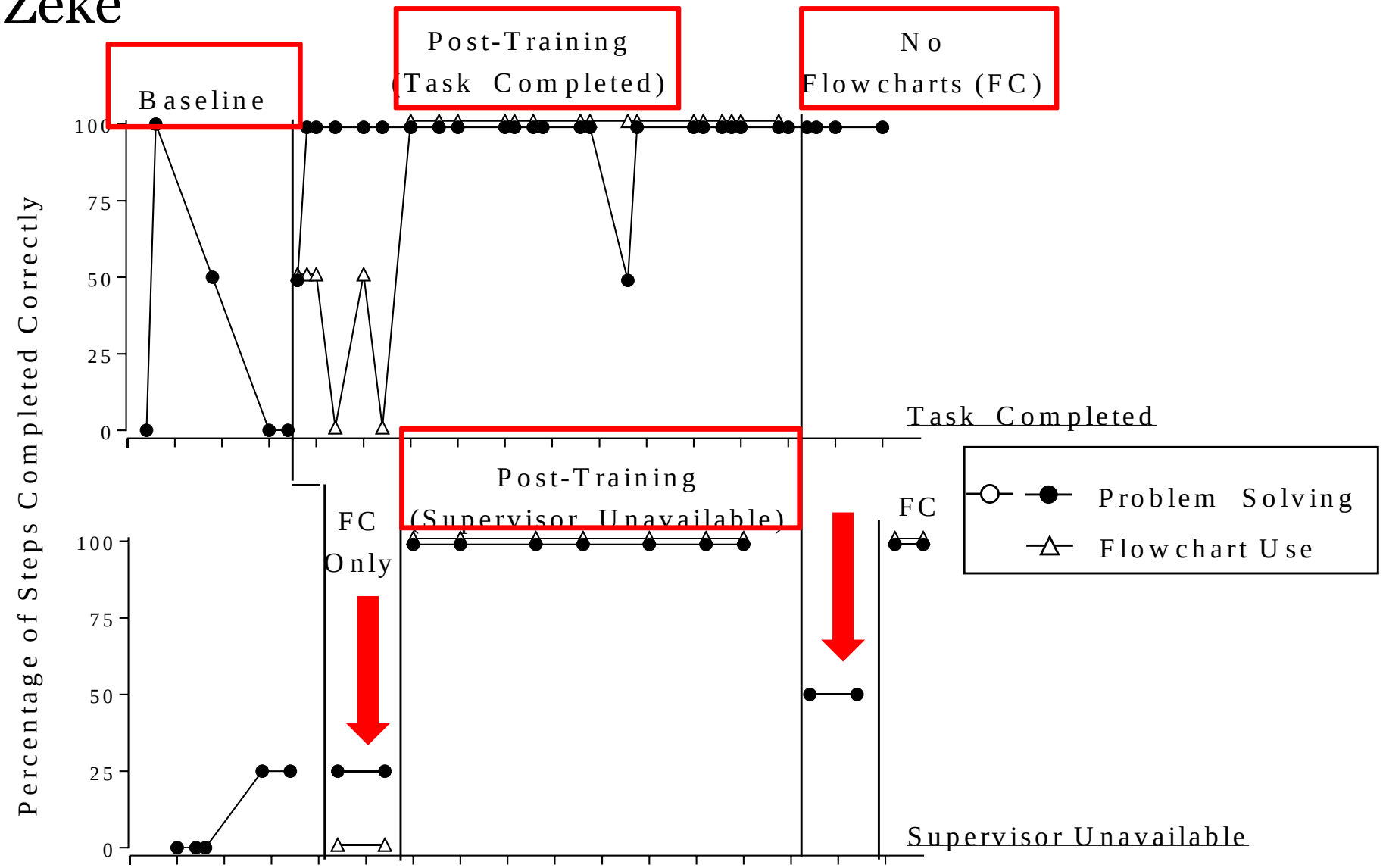


- Use electronic flowchart to solve one problem
  - Instructions
  - Modeling
  - Practice (Role Play)
  - Feedback

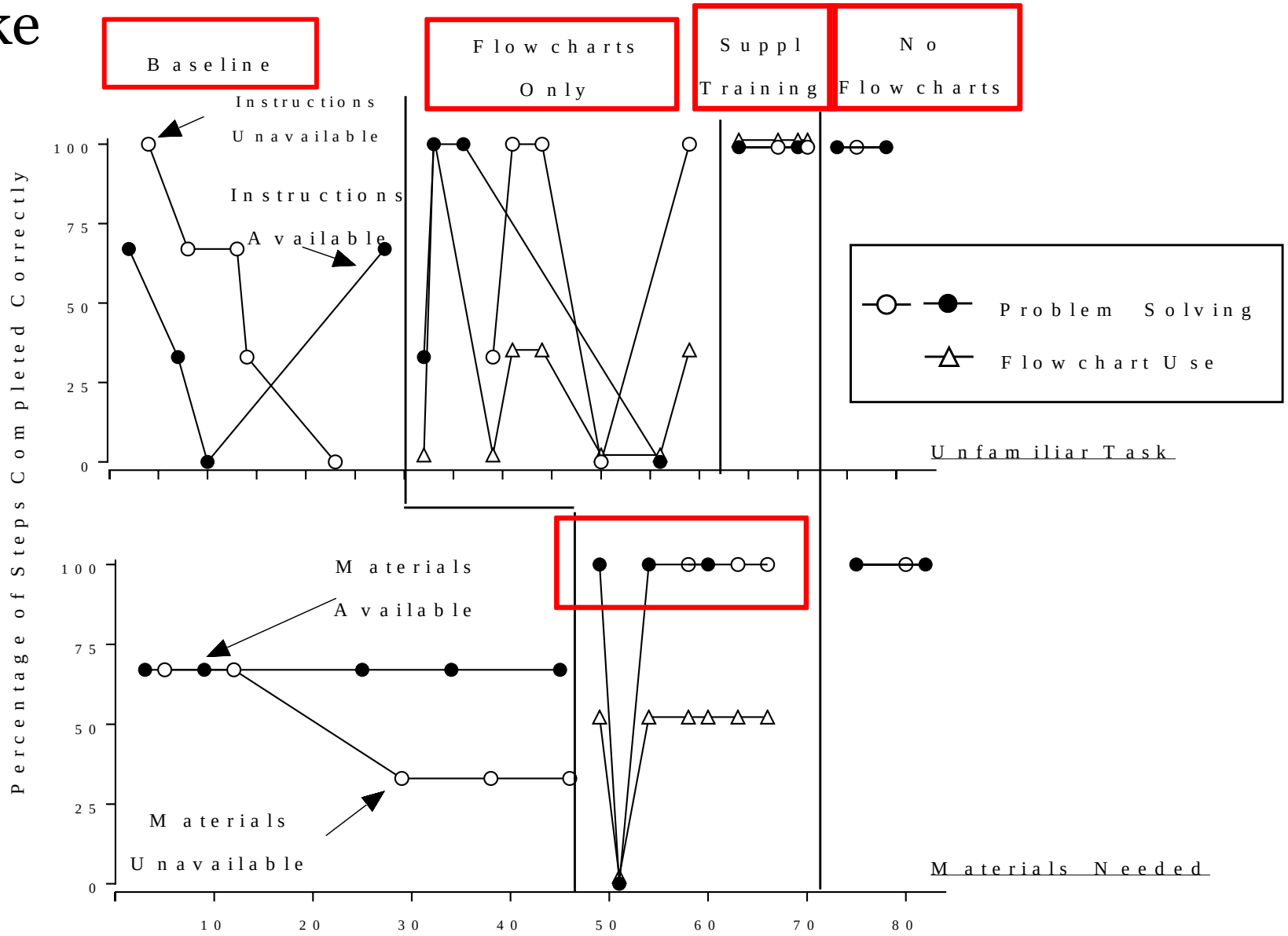
Zeke


Baseline
Post-Training
(Task Completed)
No
Flow charts
(FC)
Task Completed
Post-Training
(Supervisor Unavailable)
FC
Only
FC
Supervisor Unavailable
Problem Solving
Flow chart Use
Instructions
Unavailable
Instructions
Available
Suppl
Training
Unfamiliar Task
Materials
Available
Materials
Unavailable
Materials Needed
Percentage of Steps Completed Correctly
0
25
50
75
100
10
20
30
40
50
60
70
80

Zeke


Baseline
Post-Training (Task Completed)
No Flowcharts (FC)
Post-Training (Supervisor Unavailable)
FC Only
FC
Task Completed
Supervisor Unavailable
Problem Solving
Flowchart Use
Percentage of Steps Completed Correctly
100
75
50
25
0

Zeke


Baseline
Flowcharts Only
Suppl Training
No Flowcharts
Instructions Unavailable
Instructions Available
Problem Solving
Flowchart Use
Unfamiliar Task
Materials Available
Materials Unavailable
Materials Needed
Percentage of Steps Completed Correctly
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70
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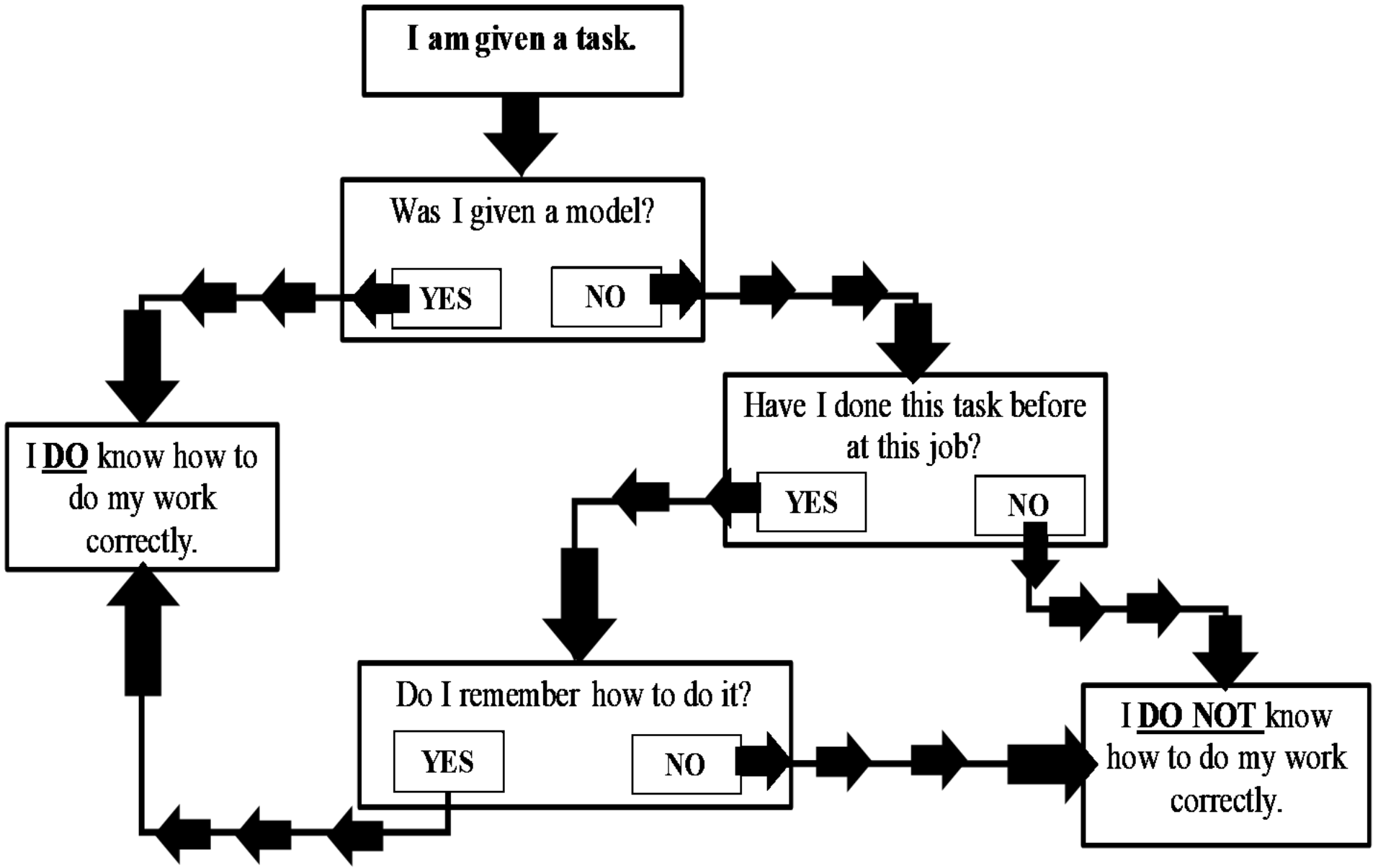
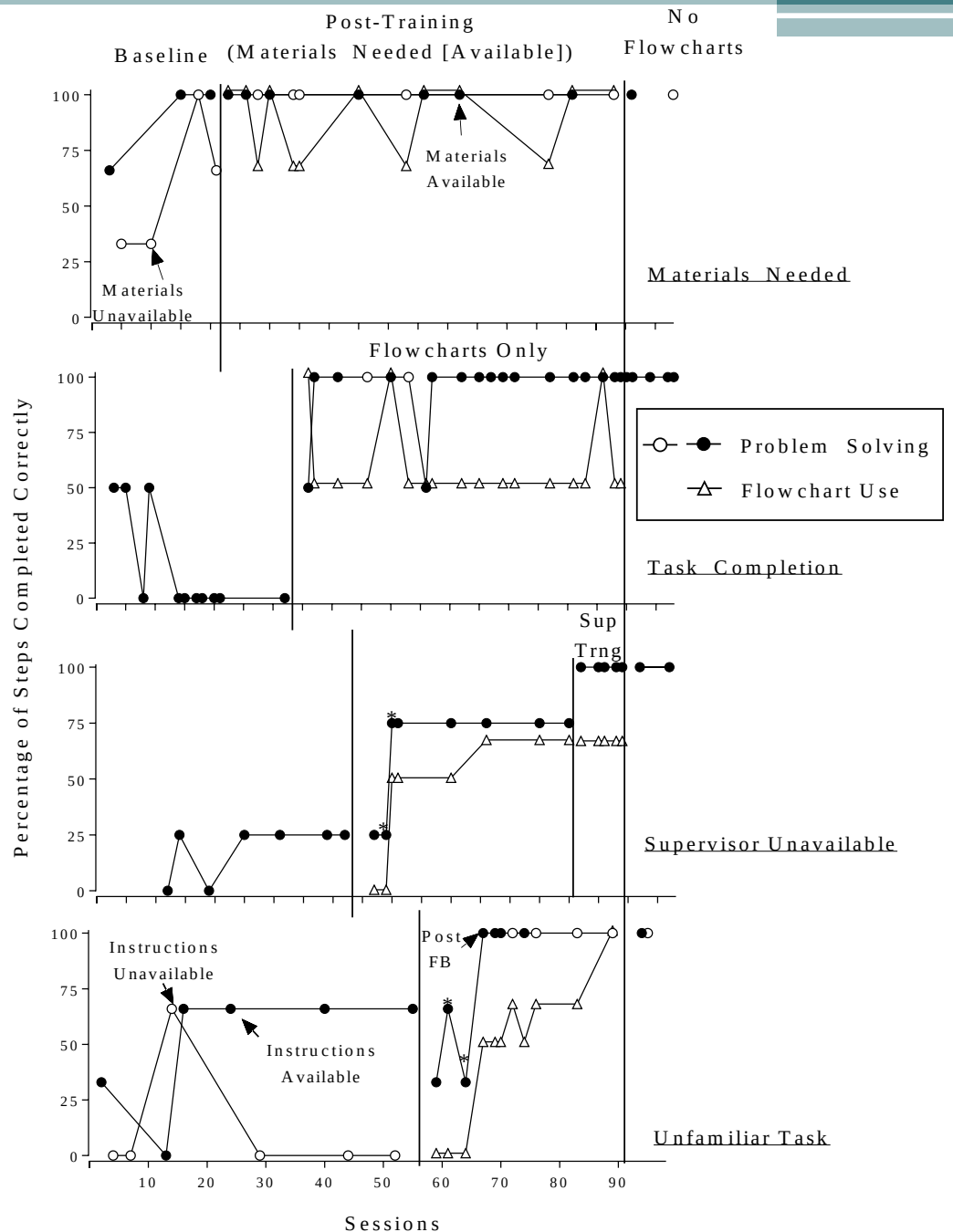
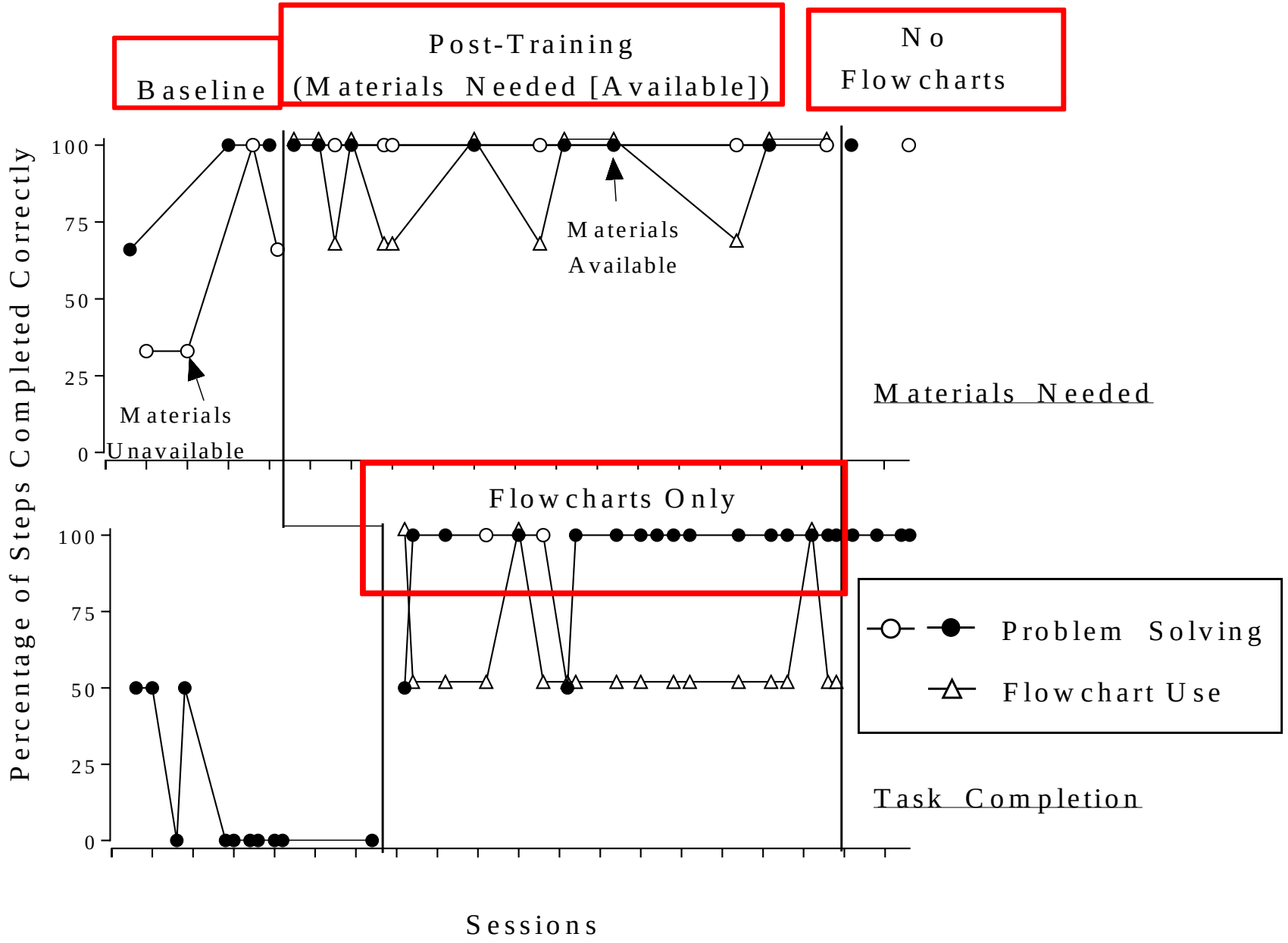

I am given a task.
Was I given a model?
YES
NO
I DO know how to do my work correctly.
Have I done this task before at this job?
YES
NO
Do I remember how to do it?
YES
NO
I DO NOT know how to do my work correctly.

Blake


Baseline
Post-Training (Materials Needed [Available])
No Flowcharts
Materials Unavailable
Materials Available
Materials Needed
Flowcharts Only
Problem Solving
Flowchart Use
Task Completion
Sup Trng
Supervisor Unavailable
Instructions Unavailable
Instructions Available
Post FB
Unfamiliar Task
Percentage of Steps Completed Correctly
Sessions

Blake


Baseline
Post-Training
(Materials Needed [Available])
No
Flowcharts
Percentage of Steps Completed Correctly
100
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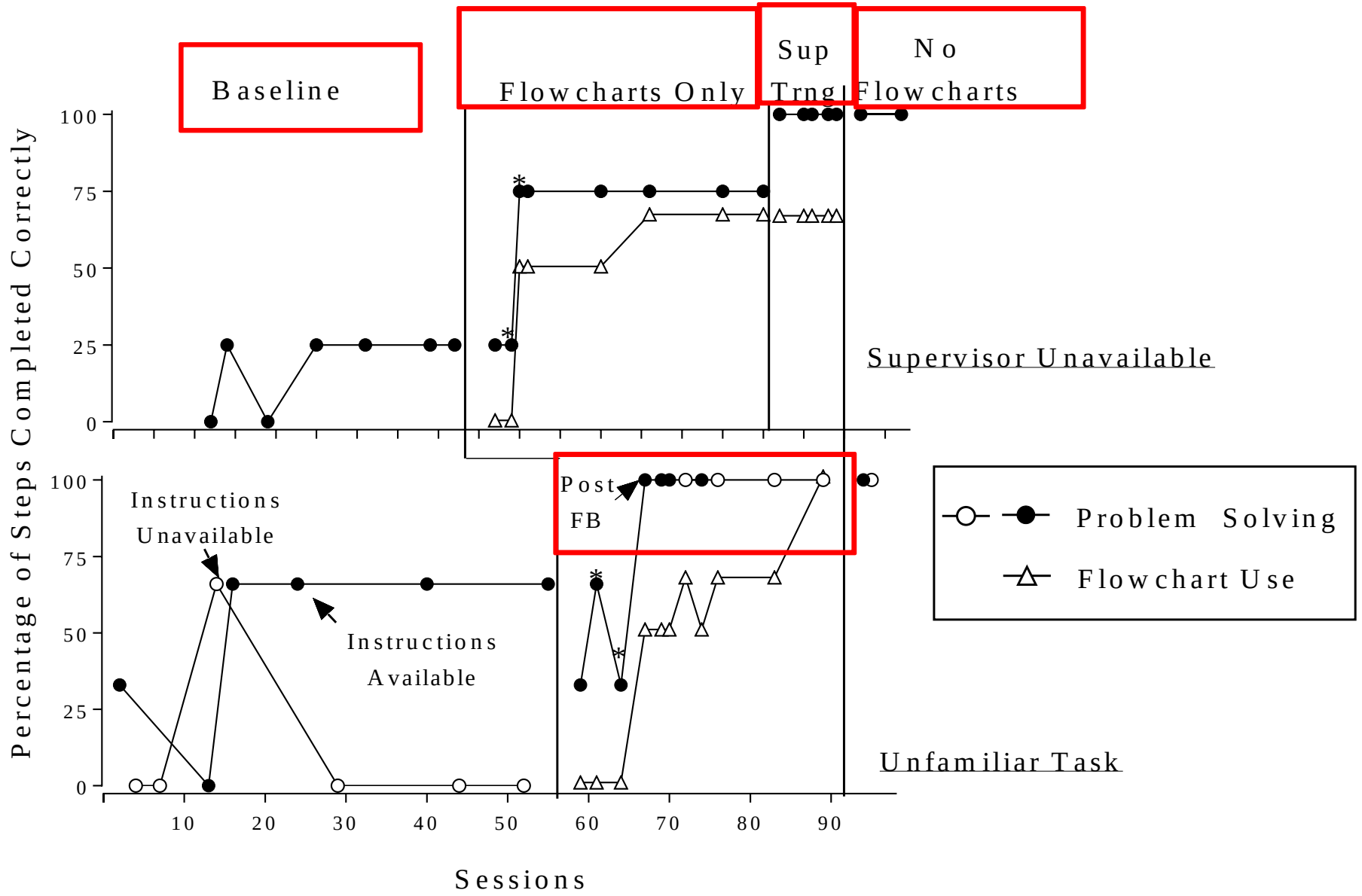
Materials Needed
Flowcharts Only
Problem Solving
Flowchart Use
Task Completion
Sessions

Blake


Baseline
Flowcharts Only
Sup Trng
No Flowcharts
Supervisor Unavailable
Unfamiliar Task
Post FB
Instructions Unavailable
Instructions Available
Problem Solving
Flowchart Use
Percentage of Steps Completed Correctly
Sessions
100
75
50
25
0
10
20
30
40
50
60
70
80
90

In Summary…..

- Youth with ASD are inadequately prepared and supported
- Transition to work is HUGE
  - Success requires large number/variety of skills
- Behavior analysts have much to offer in this area!
- Start EARLY!
- Don’t forget about the “soft skills”

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QUESTIONS?

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