Job-Related Social Skills in Adults with Autism Spectrum Disorder: Recent Research on Assessment and Training at the University of Houston, Clear Lake

Dorothea C. Lerman, Ph.D., BCBA-D
Carolyn Grob & Channing Langlinais
“My son was diagnosed with Asperger syndrome as a child. He has graduated from High School. He failed success at additional education and also at any job placement with the department of rehabilitative services. He can drive locally; now at age 27, he would like to do something with his life but has not found anywhere he can succeed. His days are filled with staying at home watching two dogs, tv and video games. Are there any resources to help him toward a more socially productive life?” – Comment posted on podcast website, People’s Pharmacy 10/2/15
My Collaborators

- Carolyn Grob
- Channing Langlinais
- Courtney Laudont
- Trena Rouse
- Loukia Tsami
- Natalie Villante
- Bridgette White
- Dan Wright
Issues and Problems in Employment
Employment of Individuals with Disabilities

• Employment by disability (Shattuck, 2012)
  o 55% Autism Spectrum Disorder
  o 68% Intellectual Disabilities
  o 86% Speech Impairment
  o 93% Learning Disability

• Adults with ASD:
  o Earn less and work fewer hours (Burgess & Cimera, 2014)
  o Rely on other adults for support

• Outcomes flat/declined across 10 yrs; access to services had minimal impact (Taylor & Mailick, 2014)
Types of Employment Services

- Vocational Rehabilitative (VR) Services
  - Largest U.S. program to provide employment services
  - “State of the states report” (Burgess & Cimera, 2014)

- Sheltered Employment
  - “Train-then-place” approach
  - “Negative ‘value-added’” service (Cimera, 2011)

- Supported Employment
  - “Place-then-train” approach
  - Individual / group
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
Research on Vocational Interventions for Individuals with Autism

• Focus on those with more severe disabilities

• None target “soft skills” related to *job retention*

• Rely on indirect/correlation measures
Potential Targets for Vocational Assessment and Intervention
Potential Targets: What Should We Teach?

Some Examples

- Securing Employment
  - Identifying desirable vocations
  - 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

- Hygiene/Grooming
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

(e.g., 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
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• General Vocational Skills
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• Job-Specific Skills

• Job-Related Social Skills
  o Asking for assistance
  o Responding appropriately to feedback

• Hygiene/Grooming
How Do We Identify Targets? Assessment of Job-Related Social Skills
Assessing Job-Related Social Skills

- Caregiver or Staff Interviews/Checklists
  - Scale of Job-Related Social Skill Performance (SSSP; Bullis et al., 1993)

<table>
<thead>
<tr>
<th>Positive Social Behavior</th>
<th>Proficient</th>
<th>Somewhat Proficient</th>
<th>Fair</th>
<th>Somewhat Inadequate</th>
<th>Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ask for assistance from work supervisor if problems are encountered with work materials or tools?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. Ask for assistance from co-workers to complete a work task?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3. Ask work supervisor for clarification in completing a new job?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4. Ask work supervisor for assistance after encountering problems in his or her job?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Assessing Job-Related Social Skills

- Client Verbal Report (Self-report/Knowledge-based tests)
Assessing Job-Related Social Skills

Test for Interpersonal Competence for Employment (TICE; Bullis & Foss, 1986)

Number 25. If your supervisor gives you several instructions and you forget one, you should:

a. ask another worker for help.

b. ask him to repeat the instructions.

c. ask for a different job.

Repeat the item.

Number 26. If you are unhappy because your supervisor told you to do a new job, you should:

a. ask why you have to do it.

b. say you want to do your old job.

c. ask your supervisor to explain the new job.
Assessing Job-Related Social Skills

Scale of Job-Related Social Skill Knowledge
(SSSK; Bullis et al., 1993)

7. Mary’s boss corrected her for mistakes in her work. Mary was very concerned and wanted to keep the boss happy. She asked him several times during the day if her work was OK. Finally the boss got angry and said “Mary you’re really bothering me!”

| Effective 3 | • Apologize and explain to the boss that you were just checking to be sure that you did your work correctly. |
| Fair 2      | • Don’t say a word to the boss: just go back to work before s/he really gets angry. |
| Ineffective 1 | • Go back to work and let the boss know how upset you are by giving him/her dirty looks.  
• Become upset and cry to show the boss how sincere you are in working hard.  
• Become physically sick in response to the comment by the boss.  
• Wait till the boss turns around and give him/her the finger.  
• Complain loudly to your co-workers about the boss.  
• Get angry at the boss and yell at him/her because you were only trying to do your job properly. |
Assessing Job-Related Social Skills

Problems with Questionnaires and Tests

- May not correspond with actual performance
- Others’ knowledge may be limited
- Verbal report shown to be unreliable
Assessing Job-Related Social Skills

Barriers to Direct Assessment

- Limited access to job sites
- Restricted evocative situations
Assessing Job-Related Social Skills

• What About Analog???
Clinic-Based
Vocational Social Skills Assessment

- Goal: Assess skills efficiently under naturalistic conditions

- 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”

- Two 3-hour visits (10- to 15-min work sessions)
Clinic-Based Vocational Social Skills Assessment

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)
Clinic-Based
Vocational Social Skills Assessment

Response Measurement¹:

- Confirming statements
- Requests for help - task
- Requests for help - materials
- Response to corrective feedback
- Notification of task completion
- Inappropriate comments/behavior
- On-Task/Task Accuracy
- Monitoring time

¹Drawn from Butterworth & Strauch (1994); Ju, Zhang, & Pacha (2012); Montague & Lund (2009); Partington & Mueller (2015) and others
Clinic-Based Vocational Social Skills Assessment

Evocative Situations (min. three times per assessment):

- Clear Instructions
  - Complete instruction + demonstration
- Vague Instructions
  - “Sort this;” “Stock these shelves;” “alphabetize”
- Task component not in repertoire
  - Computer log-in; computer tasks
- Materials missing/broken, equipment malfunctions
  - Missing vacuum; run out of staples/napkins; shredder jams
- Supervisor corrects work
- Not enough work for time allocated
- Break
Pilot Clinic-Based
Vocational Social Skills Assessment

Additional Situations:
- Multiple tasks (w/ & w/o written list)
- Supervisor/peer present vs absent
- “Time pressure”
- Reinforcement for task completion
- Brief behavioral skills training

8 Participants
- 7 male, 1 female
- aged 16 – 32 years
- none employed
- 5 w/ previous volunteer or work experience

Representative Results:

Adam – age 20; ASD and ID; no prior job/volunteer experience

John – age 27; ASD; enrolled in college courses; volunteer experience
**Adam**

**Asking for Help (Task)**

- Timely: N/A
- Knock: N/A
- Wait: N/A
- Statement: N/A

**Asking for Help (Materials)**

- Timely: N/A
- Knock: N/A
- Wait: N/A
- Statement: N/A

**John**

**Asking for Help (Task)**

- Timely: 100
- Knock: N/A
- Wait: N/A
- Statement: N/A

**Asking for Help (Materials)**

- Timely: 100
- Knock: 0
- Wait: 75
- Statement: N/A
Representative Results: John

![Graph showing percentage of 10-s intervals across sessions.]

Session 1: Mean Percentage of 10-s Intervals

- **Alone**:%
- **Peer Present**:%

![Graph showing responses per minute (RPM) across sessions.]

Session 1: Responses Per Minute (RPM)

- **Time Pressure**: RPM
- **Peer Present**: RPM

![Graph showing percentage of 10-s intervals across sessions.]

Session 1: Mean Percentage of 10-s Intervals

- **Alone**:%
- **Peer Present**:%
General Findings for 8 Initial Participants:

- Inconsistently used confirming statements
- More likely to ask for help with materials than tasks
- Notified supervisor when finished
- Inconsistently corrected errors
- On-task for majority of intervals
- Engaged in little inappropriate behavior
Recent Refinements

- Additional response components
  - Eye contact
  - “What else can I do?”
  - Apologize for errors
  - “Full” vs “partial” credit for statements

- Variations of corrective feedback (vague/conflicting)

- Additional problem solving opportunities

Larry

Problem Solving

<table>
<thead>
<tr>
<th>Percentage of Opportunities</th>
<th>Search for Materials</th>
<th>Search for Supervisor</th>
<th>Complete Additional Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>25</td>
<td>100</td>
<td>75</td>
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</table>
Vocational Intervention
Current Intervention Approach
Grob, Lerman, Langlinais, & Villante (in progress)

- Behavioral Skills Training (BST)
- Stimulus (Text) Prompts
- Vocal Prompts
- Feedback
- Tangible reinforcement
Brief BST

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

- Continue until reach performance criterion (6 consecutive)

- “Test” by returning to relevant assessment situation(s)
Stimulus (Text) Prompts

• Used during BST & “tests”

• Text/pictures to cue participant

• Prompts faded if possible
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?
Have I done this task before?

Did the supervisor give an example?
BST “Booster”

• Return to BST if performance criterion not met during “tests”

• Continue “tests” once BST performance criterion met
Vocal Prompts

- Introduced during “tests” if performance criterion not met following BST booster

- “Supervisor” provides verbal prompt immediately prior to work session
Feedback

• Introduced during “tests” if performance criterion not met (or fails to maintain) with stimulus/response prompts

• “Supervisor” provides immediate feedback
  ▫ Descriptive Praise
  ▫ Correction
Tangible Reinforcement

- Introduced during “tests” if performance criterion not met (or fails to maintain) under prior conditions

- “Supervisor” provides immediate:
  - Tangible (e.g., $) + Descriptive Praise
  - Correction
Experimental Design

- Concurrent multiple baseline across skills/evocative situations
- Assess generalization across some skills
Additional Case Examples

- **Paul**: age 19; ASD; high school degree; volunteer experience
- **Steve**: age 27, ASD, A.A in Criminology & A.A.S. in Information Technology Security; no experience
- **Allison**: age 19, ASD, ADHD; volunteer experience
Paul

Percentage of Opportunities (Correct Responses)

Ask for Help (Task)

Ask for Help (Missing/More Materials)

Asking for Help (Broken Materials)
Paul

Notification of Task Completion

Response to Corrective Feedback

Percentage of Opportunities (Correct Responses)
Intervention Targets: Paul

- Ask for Task Model
  - Initial vague instructions

- Ask for Help (Materials)
  - Broken/missing materials

- Ask for Clear Feedback
  - Corrective feedback (vague)

- Apologize
  - Corrective feedback

- Make confirming statements
  - Initial clear instructions
  - Initial vague instructions
Paul

Ask for a Task Model
(Initial Vague Instructions)

Ask for Help
(Missing/Broken Materials)

Ask for Clear Feedback
(Corrective Task Feedback)

Apologize
(Corrective Task Feedback)
Paul

Confirming Statements
(Initial, Clear Instructions)

Percentage of Opportunities (Correct Responses)

Sessions

Baseline

Post-BST + Stimulus Prompt

Confirming Statements
(Initial, Vague Task Instructions)

Baseline

Sessions
Intervention Targets: Steve and Allison

• Ask for Task Model
  ▫ Initial vague instructions

• Apologize
  ▫ Corrective feedback

• Make Confirming Statements
  ▫ Initial clear instructions
  ▫ Initial vague instructions
  ▫ Corrective feedback
Steve

Confirming Statements
(Initial, Clear Instructions)
Post-BST/
Text Prompt Fade

Confirming Statements
(Corrective Task Feedback)

Confirming Statements
(Initial, Vague Task Instructions)

Percentage of Opportunities (Correct Responses)
Steve

Percentage of Opportunities (Correct Responses)

Ask for a Task Model
(Initial Vague Instructions)

Apoloogize
(Corrective Task Feedback)

Post-BST/
Text Prompt Fade

Baseline

YES
NO

YES
NO

Sessions

20 30 40 60 80 100

Steve
Intervention: Preliminary Conclusions

• Brief BST + stimulus prompts effective for 2 of 3 participants

• Additional components needed to promote maintenance for 1 participant
Intervention: Preliminary Conclusions

- Targeting multiple responses problematic?
- Social validity of responses and criterion?
- Next Steps...
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