The Job Matching Process

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April 28, 2015
<table>
<thead>
<tr>
<th>Month</th>
<th>Trainings available @ ohioemploymentfirst.org website</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 30, 2014</td>
<td>Task analysis for job coaches</td>
</tr>
<tr>
<td>July 21, 2014</td>
<td>Worksite Analysis for job coaches</td>
</tr>
<tr>
<td>August 28, 2014</td>
<td>Tablet Computers and Smartphones as workplace supports</td>
</tr>
<tr>
<td>September 23, 2014</td>
<td>The Role of the Occupational Therapist in supporting employment</td>
</tr>
<tr>
<td>October 27, 2014</td>
<td>The Role of Rehab Engineering and the Assistive Technology Center in supporting employment</td>
</tr>
<tr>
<td>November 20, 2014</td>
<td>Video Resumes and Professional Portfolios: Presenting Job Seekers in the best light</td>
</tr>
<tr>
<td>January 26, 2015</td>
<td>Augmentative Communication Devices as employment supports.</td>
</tr>
<tr>
<td>February 26, 2015</td>
<td>Employment supports for those with IDD and Autism.</td>
</tr>
<tr>
<td>March 16, 2015</td>
<td>Employment supports for those with Physical or Sensory involvement.</td>
</tr>
<tr>
<td>April 28, 2015</td>
<td>The Job Matching Process</td>
</tr>
</tbody>
</table>
Mobile technology as employment supports: The opportunities and challenges of smartphone and tablets.

Dennis Cleary, MS, OTD, OTR/L
The Ohio State University
Division of Occupational Therapy
Objectives

1. Examine the job matching process from the perspectives of the client, job coach, employer, job developer, and VR professional

2. Review the kinds of supports that are available to help streamline the job matching process

3. Demonstrate how to use a systematic job matching process

4. Present best practices in job matching
Background

• About 3% (9 million people) of the American population lives with an intellectual disability (ID)\(^1\)
• Birth – 21, IDEA

<table>
<thead>
<tr>
<th>Postsecondary Outcomes</th>
<th>Intellectual Disabilities</th>
<th>All Disabilities</th>
<th>General Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>29%</td>
<td>60%</td>
<td>67%</td>
</tr>
<tr>
<td>Employment</td>
<td>39%</td>
<td>60%</td>
<td>66%</td>
</tr>
</tbody>
</table>

• Total lifetime costs (healthcare, support services, lost productivity) ≥ $1 million per individual with ID\(^2\)

\(^1\) Administration on Intellectual and Developmental Disabilities, 2012
\(^2\) Newman et al., 2011; Bureau of Labor Statistics, 2012
\(^3\) Centers for Disease Control and Prevention, 2006
Importance of Employment

- Work is a fundamental human occupation
- Strongly linked to identity\(^1\), SES\(^2\), QoL\(^3\), and health\(^4\)
- Provides sociocognitive structure to view the world\(^5\)
- Federal contractors must employ 7\(^%\)^\(^6\)
- Most employment services fail to meet the needs of those in transition\(^7\)

\(^1\) Corcoran, 2004
\(^2\) Butterworth et al., 2012
\(^3\) Eggleton et al., 1999
\(^4\) Petrovski & Gleeson, 1997
\(^5\) Daston, Riehle, & Rutkowski, 2012
\(^6\) Final Rule on Section 503 of the Rehabilitation Act of 1973
\(^7\) Wehman, 2006; Wehman & Scott, 2013
High Level of Support

Low

Segregated

Environment

Integrated

Reasonable Accommodations

Project SEARCH

Customized Employment

Supported Employment

Sheltered Workshops

High

Level of Support

Low
Research Program

Current Practices in Job Matching

Vocational Fit Assessment
Study #1 Research Questions

1. What are the current practices in job matching?

2. What are the outcomes of JM/JP practices?

3. What tools do professionals use to inform JM/JP decisions?
Mixed-Methods Sequential Explanatory Design

**Phase**

- QUANTITATIVE and Narrative Data Collection
  - Procedure:
    - Web-based cross-sectional survey ($N = 192$)
  - Product:
    - Numeric data
    - Narrative data

- QUANTITATIVE Data Analysis
  - Procedure:
    - Data screening and cleaning
    - Univariate analyses
    - Frequencies
    - Purposefully selected key stakeholders
    - Develop focus group protocol
  - Product:
    - Descriptive statistics
    - Focus groups ($k = 4$)
    - Focus group protocol

- Qualitative Data Collection
  - Procedure:
    - Focus groups conducted with 4 key stakeholder groups
    - Audio-video recording
    - Triangulation of observers
    - Textual data transcribed from focus group recordings
  - Product:
    - Codes and themes
    - Thematic structure

- Qualitative Data Analysis
  - Procedure:
    - Coding
    - Case comparison
    - Thematic analysis
    - Constant comparison
    - Interpretation and explanation of quantitative and qualitative findings
  - Product:
    - Development of visual model
    - Discussion
    - Implications

- Integration of Quantitative and Qualitative Findings
Survey Participants
• N = 192; 42.6% response rate
• 97% aged 25-65
• 90% White, 7% Black, 2% Hispanic
• 84% Female; 16% Male
• Years of experience μ = 10.73, σ = 8.37

Focus Group (k=4) Participants
• Professionals (n=7) 5 women; 36-64; all White
• College students (n=6) all men; 18-24; all White
• High-school students #1 (n=5) 4 women; 18-24; 1 Black, 1 Hispanic, 3 White
• High-school students #2 (n=2) 2 men; 18-24; 1 Black, 1 White
Study #1 Integrated Findings

Job Matching is a Collaborative Process

Stakeholders Involved in Job Matching

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>90.0%</td>
</tr>
<tr>
<td>Employer</td>
<td>60.0%</td>
</tr>
<tr>
<td>Caregiver/Parent</td>
<td>40.0%</td>
</tr>
<tr>
<td>Advocate</td>
<td>30.0%</td>
</tr>
<tr>
<td>Teacher</td>
<td>30.0%</td>
</tr>
<tr>
<td>SE Administrator</td>
<td>20.0%</td>
</tr>
<tr>
<td>Related Services</td>
<td>20.0%</td>
</tr>
<tr>
<td>Voc. Rehab.</td>
<td>20.0%</td>
</tr>
<tr>
<td>CRP</td>
<td>10.0%</td>
</tr>
<tr>
<td>Job Developer</td>
<td>10.0%</td>
</tr>
<tr>
<td>Job Coach</td>
<td>10.0%</td>
</tr>
<tr>
<td>Dev. Disabilities</td>
<td>10.0%</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>10.0%</td>
</tr>
<tr>
<td>Social Security</td>
<td>10.0%</td>
</tr>
</tbody>
</table>
Study #1 Integrated Findings

Job Matching is a Collaborative Process

“meeting is held with the intern's team to include [sic] the Project SEARCH team, relatives, friends and supportive people in the intern's life.”

“In my opinion the process that works best is what works best for the individual and that is usually a team approach that includes the job seeker, family members, friends, community folks, including employers and the providers that know the job seeker well and can provide input.”
Study #1 Integrated Findings

Key Stakeholders Consider Many Types of Data When Job Matching
Study #1 Integrated Findings

Key Stakeholders Consider Many Types of Data When Job Matching

“Job training evaluations, feedback from managers, coworkers, and parents…to have a comprehensive understanding of the individual's skills in order to match the person with a disability to a particular job, work evaluations, assessment of transferrable skills…level of independence, mode of transportation, willingness to work part-time or full-time, and level of motivation.”
Study #1 Integrated Findings

Current Practices in Job Matching are Variable and Lack Consistency

Consistency of Job Matching Practices

Consistency (1=not consistent; 10=very consistent)
Study #1 Integrated Findings

Current Practices in Job Matching are Variable and Lack Consistency

“trial and error is used most often! Job developers try their best to find open positions that might match a person’s interest and skill set and hope that the team agrees.”

“We use discovery first to get to know the individual job seeker. We then use warm contacts, cold contacts and the job bank to search for appropriate positions. We offer a Summer Program to high school students to expose them to work. We offer Project SEARCH!”
Study #1 Integrated Findings

Outcomes of the Job Matching Process are Poorly Defined

“community employment”

“We have great outcomes. At least 60% each year with some sites getting 100%. Of those employed there is a high percentage of long term stability,” “on the average, we have been over 80% successful,” “85% hire rate…long term, about 80% retentions [sic] rate.”
Study #1 Integrated Findings

Outcomes of the Job Matching Process are Poorly Defined

“This process has equipped students with the job readiness skills need [sic] to successfully and actively pursue employment opportunity [sic] after post-secondary completion.”

“individuals have learned employability skills.”

“help them get a work placement that they like and can learn several skills that can be generalized to future employment.”
Study #1 Discussion

- In the absence of adequate job matching resources, we strongly recommend that transition teams employ best practices including:
  a) proactive interdisciplinary and interagency teaming, collaboration, and community outreach
  b) data-based decision making
  c) defining acceptable, person-centered outcomes
  d) working to increase the consistency of transition planning practices.
Study #1 Discussion

• “Job matching is the collaborative, data-based decision-making process used by transition teams to determine the best fit between an individual’s abilities and preferences and the job’s environmental and occupational demands.”

• A systematic procedure for making job matching decisions is needed to decrease the variability of job matching practices may be capable of enhancing outcomes.

• Limitations include descriptive statistics that limit inference and few key stakeholder perspectives.

1 Persch, Cleary, Rutkowski, Malone, Darragh, & Case-Smith, 2015
### Defining the Domain

- Where do youth & young adults with disabilities work?

#### National Longitudinal Transition Study 2 (NLTS2)

<table>
<thead>
<tr>
<th>Type of Work</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(412) Retail sales workers</td>
<td>125</td>
<td>2.2</td>
<td>9.2</td>
<td>53.3</td>
</tr>
<tr>
<td>(413) Sales representatives, services</td>
<td>1</td>
<td>0.0</td>
<td>0.1</td>
<td>53.4</td>
</tr>
<tr>
<td>(414) Sales representatives, wholesale and manufacturing</td>
<td>4</td>
<td>0.1</td>
<td>0.3</td>
<td>53.7</td>
</tr>
<tr>
<td>(419) Other sales and related workers</td>
<td>16</td>
<td>0.3</td>
<td>1.2</td>
<td>54.9</td>
</tr>
<tr>
<td>(431) Supervisors, Office and administrative support workers</td>
<td>4</td>
<td>0.1</td>
<td>0.3</td>
<td>55.2</td>
</tr>
<tr>
<td>(433) Financial clerks</td>
<td>7</td>
<td>0.1</td>
<td>0.5</td>
<td>55.7</td>
</tr>
<tr>
<td>(434) Information and record clerks</td>
<td>79</td>
<td>1.4</td>
<td>5.8</td>
<td>61.5</td>
</tr>
</tbody>
</table>
Categories of Jobs

- Retail
- Food Service
- Clerical
- Custodial
- Trades
- Manufacturing
O*Net provides comprehensive information on key characteristics of workers and occupations.
Summary Report for:
41-2031.00 - Retail Salespersons

merchandise, such as furniture, motor vehicles, appliances, or apparel to consumers.

Sample of reported job titles: Sales Associate, Sales Consultant, Sales Clerk, Sales Person, Customer Assistant, Clerk, Sales Representative, Design Consultant, Salesman, Bridal Consultant

Tasks
- Greet customers and ascertain what each customer wants or needs.
- Describe merchandise and explain use, operation, and care of merchandise to customers.
- Recommend, select, and help locate or obtain merchandise based on customer needs and desires.
- Compute sales prices, total purchases and receive and process cash or credit payment.
- Answer questions regarding the store and its merchandise.
- Prepare sales slips or sales contracts.
- Maintain knowledge of current sales and promotions, policies regarding payment and exchanges, and security practices.
- Maintain records related to sales.
- Demonstrate use or operation of merchandise.
- Place special orders or call other stores to find desired items.
Harvested O*Net identified task and work context items

= 2,970 items
Study #2 Findings

126 VFA Common Item Stems

126 items → 10 subscales, 86 items

- Cognitive Abilities (k=7)
- Communication Skills (k=6)
- Abilities (k=8)
- Interpersonal Skills (k=6)
- Abilities (k=8)
- Work Structure (k=7)
- Computer Skills (k=16)
- Higher Task-Related Abilities (k=10)
- Lower Task-Related Abilities (k=7)
- Physical Abilities (k=10)
- Self-Determination (k=11)

126 items → 10 subscales, 86 items
### Study #2 Findings

<table>
<thead>
<tr>
<th>Category</th>
<th>VFA-W</th>
<th>Ordinal $\alpha$</th>
<th>VFA-J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Abilities $(k=7)$</td>
<td>0.893</td>
<td></td>
<td>0.749</td>
</tr>
<tr>
<td>Communication Skills $(k=6)$</td>
<td>0.899</td>
<td></td>
<td>0.808</td>
</tr>
<tr>
<td>Computer Skills $(k=16)$</td>
<td>0.989</td>
<td></td>
<td>0.990</td>
</tr>
<tr>
<td>Higher Task-Related Abilities $(k=8)$</td>
<td>0.915</td>
<td></td>
<td>0.828</td>
</tr>
<tr>
<td>Interpersonal Skills $(k=6)$</td>
<td>0.870</td>
<td></td>
<td>0.817</td>
</tr>
<tr>
<td>Lower Task-Related Abilities $(k=8)$</td>
<td>0.946</td>
<td></td>
<td>0.842</td>
</tr>
<tr>
<td>Physical Abilities $(k=10)$</td>
<td>0.919</td>
<td></td>
<td>0.838</td>
</tr>
<tr>
<td>Safety $(k=7)$</td>
<td>0.870</td>
<td></td>
<td>0.860</td>
</tr>
<tr>
<td>Self-Determination $(k=11)$</td>
<td>0.954</td>
<td></td>
<td>0.922</td>
</tr>
<tr>
<td>Work Structure $(k=7)$</td>
<td>0.864</td>
<td></td>
<td>0.691</td>
</tr>
</tbody>
</table>
Novel Approach to Job Matching

- Systematic
- Data – driven
- Analytical

Instructional Prompt + Common Item Stem + Customized Rating Scale

VFA – Worker
• To what degree does the worker demonstrate the ability to communicate face-to-face with other people?
  - High Ability
  - Some Ability
  - Low Ability

VFA – Job
• To what degree does the job demand the ability to communicate face-to-face with other people?
  - High Demand
  - Some Demand
  - Low Demand
Vocational Fit Assessment (VFA)

- 4+ yr. - iterative, instrument development process
- 70% of individuals with disabilities = 153 jobs
  - 153 jobs = 2,970 work tasks (i.e., items)
    - 18 months, item optimization
      - Resulted in 126 item assessment

- Items reflect the work of people with disabilities

- Purposes of the VFA:
  a) assess individual abilities
  b) assess job demands
  c) identify pros and cons of each potential job match
  d) identify areas of need, suitable for intervention
How does this work?
Clinical Scenario

• Kelly, a VR professional, needs to match a new client (Brutus) to the most appropriate job.

• Kelly knows that it is best practice to use a formal assessment to inform this decision.

• The **Vocational Fit Assessment** is designed for just this type of situation!

• As she supports Brutus’ work in the community, Kelly completes the VFA.
How should we convey this information to decision makers?
<table>
<thead>
<tr>
<th>Item</th>
<th>Individual</th>
<th>Retail</th>
<th>Office</th>
<th>Cook</th>
<th>Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Comp. Score</td>
<td>.</td>
<td>85%</td>
<td>73%</td>
<td>43%</td>
<td>67%</td>
</tr>
</tbody>
</table>
Vocational Fit Graphs for Brutus

OT Dept. Front Desk (406)

- Pro: 35
- Con: 9
- Area of Intervention: 18
- Pro: 5

RPAC Fitness (Wellness)

- Pro: 10
- Con: 18
- Area of Intervention: 6
- Pro: 13

Pro  Pro  Area of Intervention  Con  Con
Best Practice Clinical Scenario

• Kelly is preparing for Brutus’ employment planning meeting. This year, she is using the VFA to help inform the job matching process.

• She has assessed possible employment settings
Kelly brings the results of the VFA to the IEP meeting.
• What does the team determine?
Study #3 Research Questions

Validation of the VFA job matching algorithm

1. Do stakeholders support matches when demands and abilities are high?

2. Do stakeholders oppose matches when demands are high and abilities are low?
Simulation Scenario

1. VFA-J: Job has high demand for ability to communicate face-to-face.
2. VFA-W: Worker has low ability to communicate face-to-face.

Would you support or oppose matching this person to this job?
Comparative Algorithm Simulations

• Professionals challenged to integrate data on individual abilities and job demands.

• 3 pilot studies
  • $\frac{246}{335} = 73.4\%$ success rate
  • $\frac{185}{185} = 100\%$ success rate
  • $\frac{291}{360} = 80.8\%$ success rate

• Basic logic of the VFA matching algorithm strongly supported
Content Validity

• Expert (n=18) with average of 16.4 (σ=11) years of experience judged contextual relevance of VFA items:
  • 71% completely appropriate
  • 18.9% mostly appropriate
  • 6.9% somewhat appropriate
  • 3.2% not appropriate
Clinical Utility

- Professionals \((n=30)\) familiar with the VFA considered potential acceptability, practicability, appropriateness, and relevance.

- The vast majority of professionals thought that the VFA would be a relevant, appropriate, and effective tool for job matching.

- Similarly, most thought that the VFA would be of practical use and acceptable to other key stakeholders.
Benefits

- Systematically *informs* best match of individual & job

- Integrates the worker *AND* the job

- Emphasizes strengths and abilities, not limitations

- Identifies areas for *intervention*

- *Ease* of administration
Demonstration
Acknowledgements

Stacy Collins, Project Manager

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Dennis Cleary, OTD, MS, OTR/L
Maria Eismann, S/OT
Amy Grooms, S/OT
Questions?

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