

Innovation and Evaluation in Vocational Rehabilitation and Employment Programs



**12th Annual Summit Meeting on Performance
Management Excellence**

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Learn, Innovate,
Improve



My objectives

Familiarize you with a novel framework for technical assistance and evaluation that can empower collaboration between agency staff and researchers

Encourage you to consider engaging in more **eevidence-driven and **E**evidence building and activities at your agencies**

Challenges in public policy

Government investments in employment programs have had, at best, modest sustained impacts

Is it that the interventions do not work, implementation is poor, both, or something else?

Despite good intentions, neither researchers nor administrators have delivered needed actionable evidence

- While researchers are prepared for rigorous analysis, they do not always ask the right questions or design appropriate solutions
- Administrators and providers know which challenges are pressing, but sometimes do not have the time or resources for analysis

Learn, Innovate, Improve (LI²) is a collaborative approach for evaluation

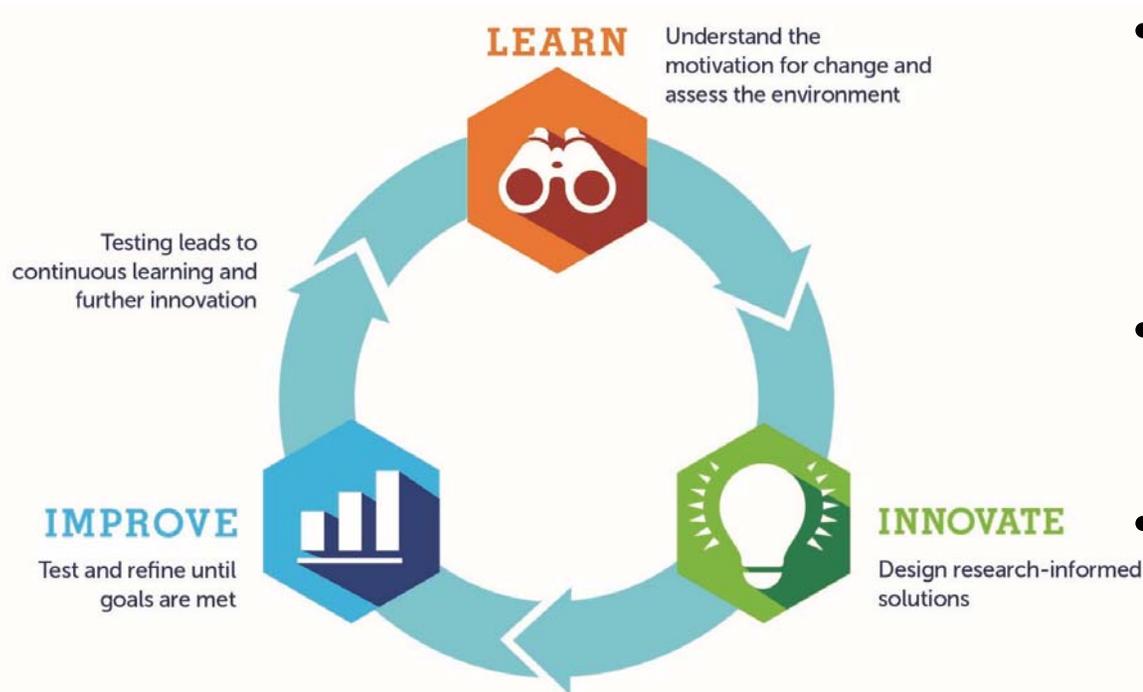
Developed by Mathematica in partnership with the Administration for Children and Families in the U.S. Department of Health and Human Services

Goal is to change the way researchers and practitioners work together

- Provides a framework for using research and analytics
- Practitioners and LI² facilitators engage in activities to co-create solutions to improve outcomes

Builds capacity among agency staff for research-driven decision making

A framework for change



- **Learn**
 - Clarify the motivation for change
 - Assess the environment's readiness for change
- **Innovate**
 - Co-create science-informed solutions
- **Improve**
 - Iteratively test and refine implementation
 - Scale up and test for impact



Learn phase

Objectives

- **Identify problems**
- **Clarify the motivation for change**
- **Assess the environment for change**

Ingredients

- **Individual and group brainstorming activities**
- **Front-line staff and administrators do the brainstorming**
- **Activities are short**
- **Use post-its, poster boards, and markers instead of laptops, reports, and PowerPoint presentations**

Results

- **Common understanding of the motivation for change**
- **Identification of opportunities for improvement**
- **Awareness of the barriers to change**



Innovate phase

Objectives

- **Explore and co-create evidence-informed solutions that draw on science, existing research, and practice wisdom**

Ingredients

- **The right mix of people: authority figures, seasoned staff, and frontline staff**
- **Draw upon both research and practice wisdom**
- **A creative space that provides room for failure**
- **A menu of approachable activities**

Result: a roadmap for change

- **Specifies your approach in detail**
- **Names desired changes within people and measurable outcomes**
- **Considers factors that may help or hinder success**
- **Provides an ongoing tool for implementation**



Improve phase

Objectives

- **Test and refine strategies on a small scale**
- **Determine the conditions for successful implementation**
- **Use data for everyday decisions and continuous quality improvement**
- **Build evidence for everyday decision making + Evidence for the field**

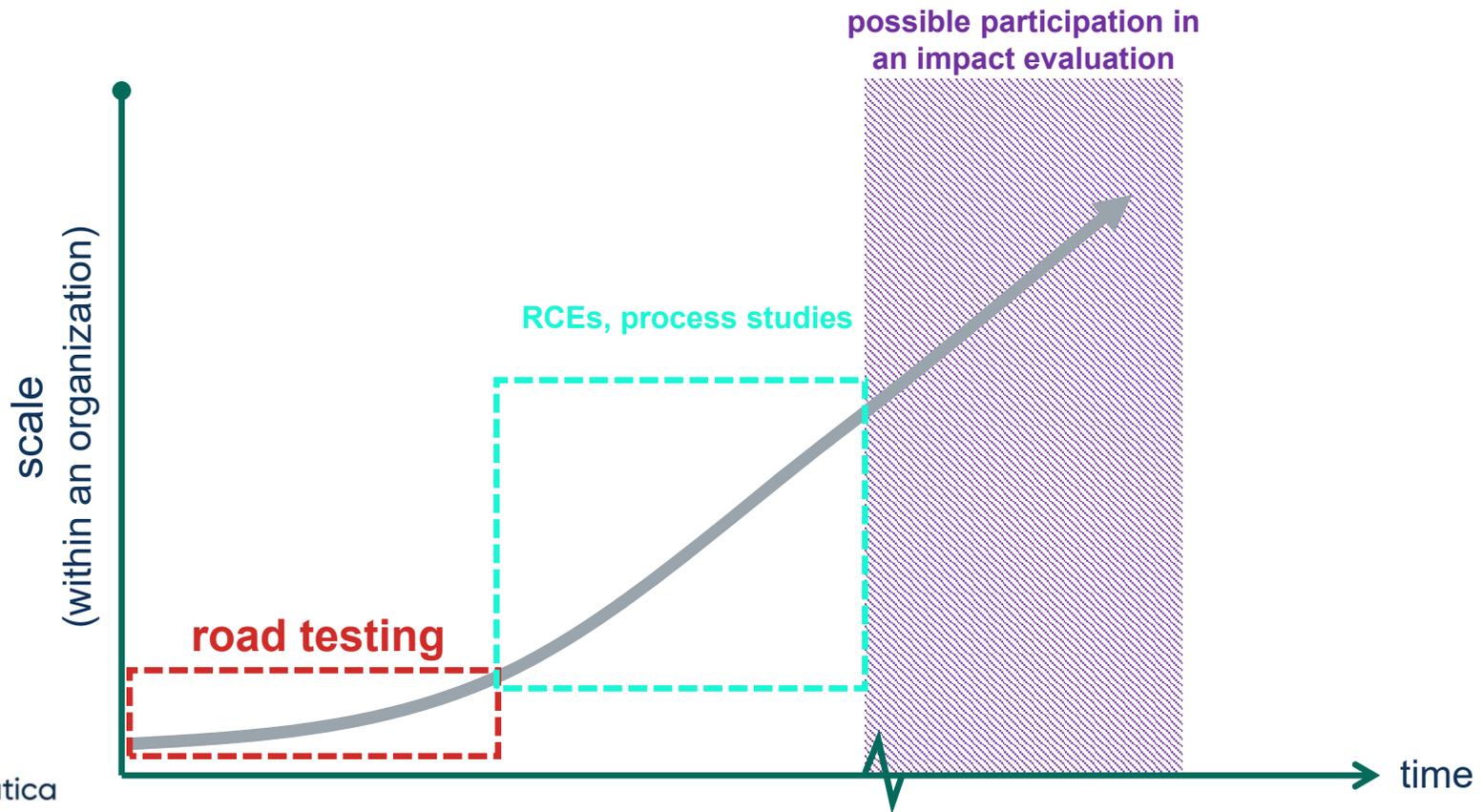
A menu of methods

- **Rough-and-ready prototyping**
- **Road testing**
- **Rapid cycle evaluation**
- **Descriptive or process analysis**
- **Evaluate for impact**

Results

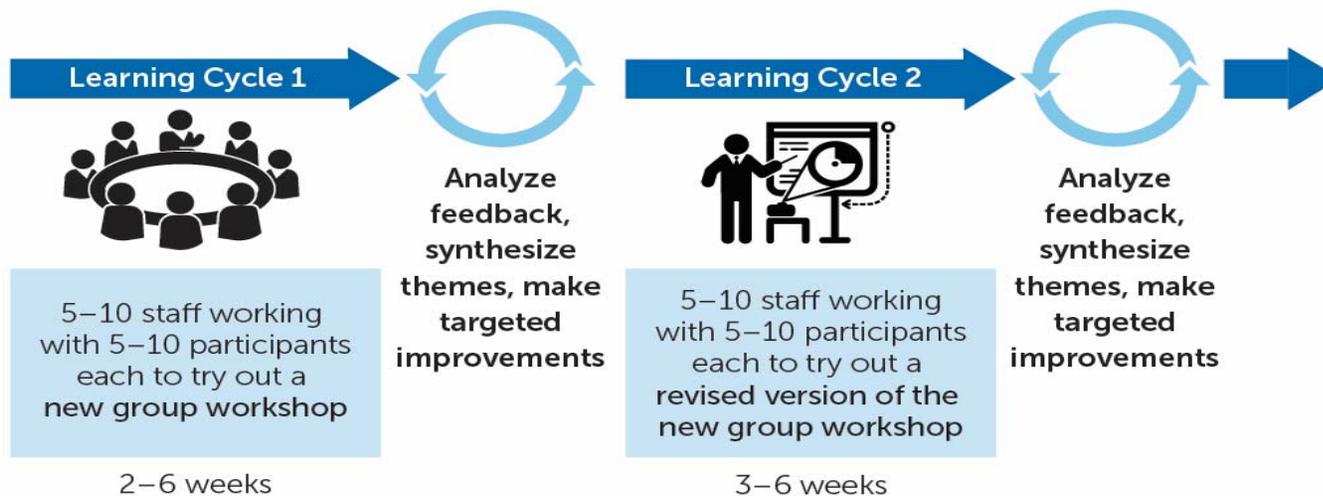
- **Identify promising practices and necessary adjustments to strengthen your program**
- **Generate (increasingly more) reliable evidence about what works, for whom, and under what circumstances**
- **More informed decision-making**

Improve: Building the on-ramp to rigorous evaluation



Improve: Road testing

An iterative, rapid prototyping process that involves multiple cycles of testing, refining, and strengthening the design and implementation of a strategy prior to scaling



What sets LI² apart?

Framework informed by field of human behavior

Systematic process anchored by analytic methods

Co-creation at the core

Emphasis on *using* and *building* evidence

- Builds **e**vidence for practitioners' everyday decision-making
- Builds **E**vidence for the field

Explicit efforts to build local capacity

Allows gradual scalability and sustainability

Examples of LI² in action

Colorado Works Innovation Initiative

- Persistent problem of mediocre engagement in the Colorado Works (TANF) program
- Colorado saw the potential for county offices to serve as incubators of innovative practices
- Invited all 64 counties to participate, 19 did
- LI² provided an accessible framework to shape program improvement across a learning community

LI² in action with state VR agencies

Vermont Division of Vocational Rehabilitation's Linking Learning to Careers program

- Vermont's Division of Vocational Rehabilitation is implementing an RSA-funded demonstration on work-based learning experiences (WBLEs) for transition-age students
- Goal of the demonstration is to improve student's post-secondary employment and education outcomes

LI² offers a technical assistance framework to support WBLE implementation

- Stepwise rollout across all 12 districts (three at a time)
- Full day in-person training for Learn and Innovate steps
- Conference calls to develop and implement roadmaps for Innovate step
- First Innovate cycle will take two to six weeks; subsequent cycles as needed

Questions?



Pathways to Careers: Approach to examining program effectiveness



Policy context

Policy context

- In recent years, federal policies have emphasized employment for people with disabilities



EMPLOYMENT FIRST:
Maximizing **Success** and
Improving Employment **Outcomes**
for **Special Populations**

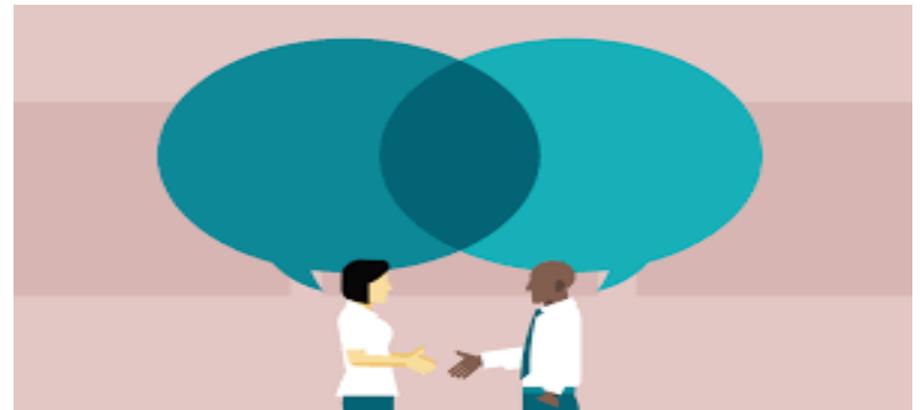


Customized employment (CE)

- The Workforce Innovation and Opportunity Act (WIOA) modified the definition of supported employment to include CE
- “Competitive integrated employment for an individual with a significant disability, that is based on an individualized determination of the strengths, needs, and interests of the individual with a significant disability, is designed to meet the specific abilities of the individual with a significant disability and the business needs of the employer.”

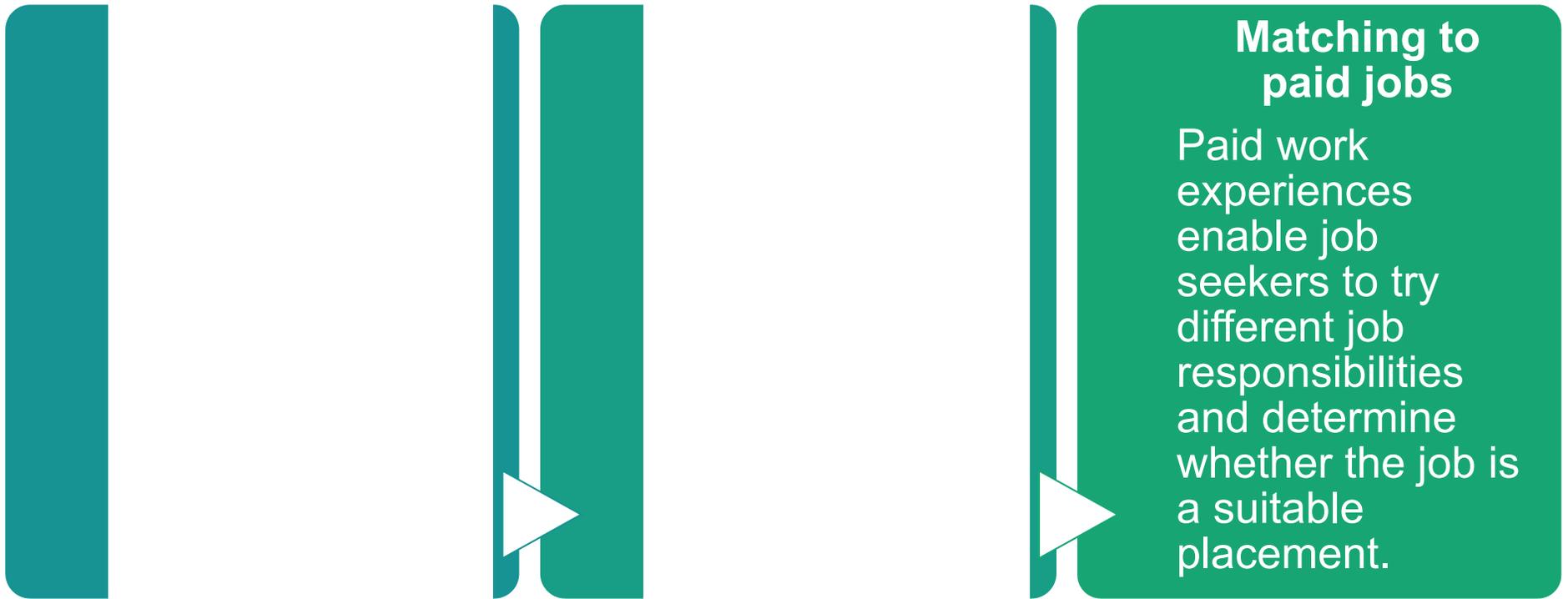
The relationship between the job seeker and employer is personalized so that the **needs of both are met through negotiation** of the worker’s job duties and flexible work arrangements

(Workforce Innovation and Opportunity Act, 2014 Amendments to the Rehab Act (H.R. 803 Section 7 (7) (29 U.S.C. 705)).



Customized employment aims to remove barriers to employment

- Builds flexibility into job descriptions and work settings





Approach to implementing CE

Pathways to Careers

- **CE model that states and providers can implement to help people with disabilities access employment. The service components include:**

Discovery is a strengths-based assessment of Pathways participants that reveals each person's job-related interests, skills, and conditions for employment success.

Customized internship and job development is carried out by Pathways staff who outreach to employers to identify customized internship and employment opportunities for participants.

Expanded Discovery includes paid internships that enable participants to try different job responsibilities to determine whether the job is a suitable match for them. Pathways, rather than the employer, provides salary, benefits, and initial employment supports.

Naturally-referenced employment supports are provided to both employers and participants to enhance the effectiveness of the natural training and supports that employers provide in the workplace.

Post employment support is provided after a participant has accepted a job to address concerns the participant or employer may have about the participant's success in the job.

Pathways to Careers (Cont'd)

Fully implemented in four sites:



Eligibility in the Utah site:

- Diagnosis of autism spectrum disorder or intellectual or developmental disability (I/DD)
- Age 18 or older
- Reside in Davis County, Utah



Approach to assessing program effectiveness

Motivation: Need for evidence on CE approaches

- **We examined service receipt and employment outcomes of participants in the Utah site 5 years after they enrolled**
 - Pathways study design did not include a control group
- **We examined outcomes among a group of VR clients with similar disability and demographic characteristics**
- **Limitations**
 - Populations are distinct and the service models have different philosophies
 - Programs differ in how they administer services and collect data
 - VR agencies that are under order of selection are not able to serve all people who are eligible for VR services

Data sources

- **We used two data sources for the analysis**
 - Pathways administrative data from the Utah site through June 2018
 - RSA-911 case service record reports from 2014, 2015, and 2016
- **Data sources differ in how primary disability is captured**
 - Pathways data include up to four types of disabilities for each participant
 - The RSA-911 data include up to two primary impairments and the cause for each

Methods



1. We identified a comparison group of VR clients who were similar to Davis County Pathways participants on five characteristics and the year in which they applied to the programs: age, gender, race, education level, and cause of disability.



2. We excluded VR comparison group members who dropped out of VR before their eligibility was determined or before they had an IPE.



3. We limited our analysis to the employment experiences for Pathways participants that had a duration of 90 days or longer to be consistent with how employment outcomes at closure are coded in the RSA-911 data.



4. We calculated average employment rates, hours worked, hourly wages, and weekly earnings for the matched 89 Pathways participants and 8,537 VR clients.

Limitations

- **Timing of when data are recorded differ:**
 - The Pathways data capture information on each participant enrolled from 2012 – 2016
 - The RSA-911 data capture information on cases that were closed in 2014, 2015, and 2016
 - Data were not available for people who were still receiving VR services
- **Earnings data for VR clients are limited**
 - Earnings information available for those whose cases closed in 2014; the 2015 and 2016 files did not include earnings information

Findings

Service receipt (Pathways)

Table 1. Service receipt of Pathways participants through June 30, 2018

Pathways services	Pathways participants
 Discovery (percentage) Number of Discovery activities (mean among those that took part in Discovery)	100 15.3
 Internship (percentage) Number of internships (expanded Discovery) (mean among those that had an internship)	89.9 2.2

Source: Pioneer Adult Rehabilitation Center administrative data.

Note: The sample includes 89 Utah Pathways participants who were matched to 8,537 vocational rehabilitation clients.

Service receipt (matched VR clients)

Table 2. Service receipt of matched sample of VR clients through June 30, 2018

VR services	VR clients	
	(1) All	(2) Closed with a CIE outcome
 Number of VR clients receiving services	8,537	1,923
Customized or supported employment	35.5%	47.7
 Short-term on-the-job supports	20.9%	29.7
Other employment services	58.5%	73.3
Training	29.4%	28.7
Other services	88.5%	91.2

Sources: RSA-911 case service record data from 2014, 2015, and 2016.

Notes: Sample includes (1) 8,537 VR clients served by general or combined VR agencies with cases closed in 2014, 2015, or 2016 and (2) the subset of 1,923 VR clients who closed with a competitive integrated employment outcome.

CIE = Competitive integrated employment

VR = vocational rehabilitation.

Employment and earnings outcomes (Pathways and VR clients)

Table 3. Employment and earnings outcomes for a matched sample of Pathways participants and VR clients

VR services 	Pathways participants (N = 89)	VR clients (N = 8,537)	Difference
Percentage with a CIE outcome of 90 or more days duration	49.4	58.0	-8.6
Job characteristics of those with a CIE outcome of 90 or more days duration			
Sample size	44	5,290	
Weekly hours worked	27.7	21.3	6.4**
Hourly wage	\$10.0	\$8.8	\$1.2**
Weekly earnings	\$274.0	\$175.0	\$99.0**
Percentage with monthly SGA-level earnings	42.1	13.3	33.4**

Sources: Pioneer Adult Rehabilitation Center administrative data and RSA-911 case service record data from 2014, 2015, and 2016.

Notes: The sample includes 89 Utah Pathways participants and 8,537 matched VR clients served by general or combined VR agencies with cases closed in 2014, 2015, or 2016. Wages and earnings are in 2018 dollars.

** Significantly different from zero at the .05 and .10 level.

CIE = Competitive integrated employment

SGA = substantial gainful activity; VR = vocational rehabilitation.

Implications

- **Study assessed CE service use in the context of Pathways and VR agencies**
 - Both Pathways and VR succeed in helping similar shares of clients achieve employment
 - Among those who worked and compared to a similar group of VR clients:
 - Pathways participants worked more hours and had higher earnings
 - More likely to have earnings higher than the SSA's threshold for substantial work
- **Comparisons should be interpreted with caution due to:**
 - Differences in populations served
 - Differences in program philosophies and resources
 - Differences in how data are recorded
- **Examining outcomes of Pathways and similar VR clients can deepen the field's understanding of CE strategies**

Implications (*Cont'd*)

- **Constructing a comparison group to examine outcomes among similar populations of interest**
 - More rigorous approach to monitor and evaluate program outcomes
- **Availability of RSA-911 data has recently expanded**
 - VR staff can monitor and evaluate program outcomes in real time
 - Applying insights can prompt improvements in service delivery

Questions?

Acknowledgements and disclaimer

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- The opinions and conclusions expressed are solely those of the authors and do not represent the views of SourceAmerica.
- Purvi Sevak, Noelle Denny-Brown, and Marisa Shenk
- Full report “Customized Employment: Translating Policy Into Practice Through SourceAmerica Pathways to Careers” (Sevak, Denny-Brown, and Shenk) and Fact Sheet can be accessed here:

<https://www.mathematica-mpr.com/our-publications-and-findings/projects/pathways-to-careers-program-evaluation>



Using Natural Language Processing to Analyze Case Notes

Natural language processing (NLP)

Natural language processing is a technology to use computers to systematically process large amounts of text

NLP combines machine learning approach to analyze text

Inductive approach to develop algorithms that uncover rules, meaning, and patterns, as opposed to human-imposed instructions

Mathematica has used this technique to process and organize text fields

Job and occupation titles, disability type, electronic health records, and grant applications

Using NLP for case note analysis

Problem: As an evaluator, I typically can't use case note data effectively

Large number of records

Too much information for qualitative analyses

Have to settle for counts of case note events, ignoring the rich, personalized information that notes contain

Question: Can NLP be used to analyze case note data?

Specifically, can we use NLP to categorize case notes into RSA-911 service categories?

Analytical approach and results

Data analysts reviewed and analyzed data

13,822 records (3,150 duplicates)

6,766 with labels (from 1 to 8 labels)

3,906 without labels

Required significant human input

Organizing and cleaning data, understanding structure, inputting abbreviations, accounting for emails

We were unable to successfully use NLP to analyze the case note data

The signal and the noise could not be distinguished

Why are case note data difficult?

Case note data are messy

No consistent order or expectations

Counselors have leeway as to what to enter to help them manage cases

Data contain range of information, including brief notes, detailed notes, copies of emails, check ins with providers, and documentation of no shows and left messages

NLP didn't work in this case because of..

Ambiguity and overlap with label definitions (e.g., job exploration and career counseling)

Counselor inconsistency in their use of labels

Counselors variation in how they approached their notes

Abbreviations, spelling errors, and acronyms

Hence, there was no consistent logic on which to base the analysis

When might NLP be used?

NLP is optimal when:

Text data are uniform

Assigning labels that are distinct

Data are of at least moderate quality

Potential uses for VR agency data:

Categorizing goals and services associated with individualized plans for employment

Categorizing purchased services associated with clients

Research and evaluation resources

Pathways <http://www.sourceamerica.org/pathways-careers>

VR Program Evaluation Coach www.vrevalcoach.com

Performance management [briefs](#)

Youth RRTC <http://vrpracticesandyouth.org/>

Learn, Innovate, Improve <https://www.mathematica-mpr.com/toolkits/li-squared>

Funding

Purvi Sevak

NIDILRR: RRTC on VR Practices for Youth and Young Adults

Noelle Denny-Brown

SourceAmerica: Research, Modeling, Demonstration Design and Evaluation of Projects to Create Employment Opportunities for People with Severe Disabilities

Todd Honeycutt

RSA: Transition Work-Based Learning Demonstration

Questions?

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