Understanding the competencies needed to customize jobs: A competency model for customized employment

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Abstract.
BACKGROUND: Customized employment (CE) has been shown to be a viable employment option for individuals with disabilities [1, 2], but to implement CE solutions, service providers need expanded capabilities that they may not have.
OBJECTIVE: The specific purpose of this research was to develop a CE competency model embodying the knowledge, skills, abilities and other characteristics necessary to provide CE solutions.
METHOD: Using a job analysis approach, data collection activities included interviews with subject matter experts (SMEs) and a series of iterative SME panel reviews to develop task, knowledge, skills and ability lists. Next, competencies were developed using a Q-sort methodology. The CE competency model was then verified to ensure its accuracy, completeness, and relevancy through SME ratings.
RESULTS: The final model contained 31 tasks grouped into four CE components, and 84 KSAOs grouped into nine competencies.
CONCLUSION: The CE competency model has a number of strengths that will make it a useful tool for the vocational rehabilitation field. Future research should seek to identify, develop or obtain objective measures of CE outcomes and test the relationship between the CE competency model and CE outcomes.

Keywords: Customized employment, job analysis, competency model

1. Introduction

1.1. The concept of customized employment

The Office of Disability Employment Policy (ODEP) published the concept of "customized employment" in June of 2002 [3]. Since that time, customized employment (CE) has been shown to be a viable employment option for individuals with disabilities [1, 2]. CE is both a concept and a process, and differs from supported employment and other employment strategies in several ways. First, the process is based on the skills, talents, and interests of the individual with disabilities rather than the needs of the local labor market [4]. Second, the process results in a new, unique position that is created just for the individual with disabilities through either negotiation with an employer or through self-employment [1, 5, 6]. As such, a greater knowledge of employers, business, and workforce needs are needed by service providers. Third, it is a strategy aimed at benefitting both the individual with disabilities and the employer. As stated on the ODEP website, "Customized Employment is a flexible process designed to personalize the employment relationship between a job seeker and an employer in a way that meets the needs of both"

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[3]. Fourth, the process may include enhancing the individual's contribution or value to an employer by equipping the individual with materials, equipment, or skills that align with the individual's interests and the needs of the employer's customers to increase the employer's profits (i.e., resource ownership) [1]. Fifth, CE encourages the use of natural supports already provided by the employer or available in an employment setting, such as new employee training courses, peer mentoring, and supervisory supports [7, 8]. Lastly, as a concept, CE can only be successful if the individual is treated as an individual who is free to make choices about his or her life's direction; is afforded respect and dignity; is assumed to have competencies that, if not readily obvious, can be discovered; is given access in natural settings with minimal intrusion; and is provided with high quality employment opportunities and services.

1.1.1. An individualized process

CE consists of four process components: Discovery; Job Search Planning; Job Development and Negotiation; and Post-Employment Support. Typically, the employment specialist leads the individual and the CE support team[1] through the first component, Discovery, to determine the individual's interests, skills, and preferences related to potential employment. That information is used to develop a plan, determine a list of potential employers, and conduct an analysis of benefits during the Job Search Planning component. Once a potential employer is identified, the individual and the employer, in the third component, negotiate 1) a customized job, 2) the provision of supports, and 3) the terms of employment that will meet the needs of the individual and the employer. In the case of self-employment, the individual and the agency providing CE services, construct a customized self-employment situation, such as a small business, negotiate the provision of supports to help make the business a success, and tailor the business operations to meet the need of the individual [6]. The process concludes in the fourth component, Post-Employment Support, by setting up on-going post-employment supports and monitoring the employment relationship to ensure satisfaction by both the individual and the employer. In the case of self-employment, the fourth component consists of on-going post-business startup

supports, and monitoring to ensure satisfaction and business success for the individual.

The four components do not necessarily occur in serial fashion: some components can occur contemporaneously with others. It is the individual with disabilities who determines whether or not to continue to the next component in the process.

1.1.2. Variation in customized employment

While there is an overarching approach to CE, the process will vary to some degree each time it is implemented to accommodate the individual's desires and aspirations, and the employer's specific work needs and requirements. Variation may occur in the number of components that are completed and the way the components are performed. The steps or tasks within a component may not be performed in the same sequence with each individual, and some of the tasks may not need to be performed at all. Still, the overall process is coherent and logical where each step or task builds logically on all previous steps or tasks.

In addition to variation in the number of components and the steps within each, the number of individuals involved in the process may vary as well. In some settings, CE services are provided by an individual employment specialist. In other cases, a team may provide the services and the components may be divided among the team members. The structure of a team in terms of the types of individuals involved and the roles of those individuals may vary by service provider and even within a service provider to accommodate the needs of the individual with disabilities.

The flexibility of CE has enabled it to be used in a variety of situations. For example, CE has been adapted for use in the context of high school age youth with various developmental and physical disabilities with great success. More recently, this so-called "Individualized Career Planning Model" was extended to youth with psychiatric disabilities with promising results [9]. It has been used successfully with unemployed methadone patients [10], and is being seen as a possible strategy for retaining the knowledge and experience of older workers by matching (and possibly carving and negotiating) worker skills and desires with business or organizational needs [11].

In a retrospective look at CE, Callahan, Griffin and Hammis [12] noted that CE "can be described as a set of techniques to make supported employment more powerful". They also noted that CE, coupled with other efforts, such as the "Employment First" initiative conducted by the state of Washington,

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[1]The CE Support Team is a group of multiple partners, including the employment specialist, who all jointly take some responsibility for the individual's needs; however, the individual is the ultimate decision-maker.

remains a significant force and strategy for providing people with disabilities competitive employment or self-employment.

1.2. ODEP's knowledge development and translation initiative

Those providing CE services must have a range of competencies that enable them, in collaboration with the individual with disabilities and the employer, to complete the components of CE. Because CE has a greater emphasis on identifying and understanding the needs of employers and negotiating with employers, service providers need the accompanying skill sets to be successful. Such skills, however, are likely to be outside the traditional skills and training of vocational rehabilitation providers and employment specialists. Evidence that service providers may lack the skills needed to successfully implement CE was found in an evaluation of ODEP's customized employment initiative [2]. Beyond a number of positive findings, the evaluation noted areas where the program fell short, and attributed the shortcomings, in part, to staff lacking the skills or training necessary for completing all the components of customized employment. A summary report of CE grants noted that increasing and maintaining staff competencies was one of the keys to creating sustainable programs and organizations [13].

Recognizing the gap, ODEP sought to identify the full range of knowledge, skills, abilities, and other characteristics (KSAOs) that are needed by service provider personnel to implement CE successfully[2]. To carry out this task, ODEP contracted with the team of Economic Systems and ICF International in October 2008 to develop a CE competency model. A competency is composed of a combination of KSAOs and describes a functional capability to perform a work requirement [14–16]. This article focuses on the research approach taken to identify the competencies and KSAOs needed for CE and the outcomes of the research, which included a standard set of CE tasks in addition to the competencies and KSAOs.

1.3. Approach to KSAO development

1.3.1. Job analysis

To identify the KSAOs required to implement CE, we conducted a job analysis of CE. Job analysis is a systematic process of gathering, studying, and structuring information about a job's duties and tasks, internal and external relationships, required equipment, responsibilities, personal qualifications necessary for performing the job, and the conditions under which work is performed. Our job analysis process was consistent with well-established professional guidance set forth in the Uniform Guidelines on Employee Selection Procedures [17]; the Principles for the Validation of Personnel Selection Procedures [18]; and the Standards for Educational and Psychological Testing [19]. It is important that we adhered to the professional guidance because they provide the standards generally recognized by both professionals and the court system should the KSAOs be used in employment decisions.

Because CE is a process, not a job, and may involve multiple people in a variety of job positions, we had to consider the job requirements of a variety of jobs at a number of organizations. The goal of the job analysis was to determine all the KSAOs required to implement all of the tasks related to CE, regardless of the job title or the degree to which each job was central to the implementation of the process. As such, the resulting critical KSAOs may be manifested in a range of jobs (rather than in a single job) that support CE in organizations that implement CE.

1.3.2. Expert involvement

Job analysis typically relies heavily on subject matter experts and our approach for analyzing CE was no exception. This expert involvement was critical to the CE job analysis for two reasons. First, because CE is an emerging concept and process, there is not much published literature on the topic. Second, having subject matter experts identify and verify the KSAOs increases the defensibility of the resulting competency model as valid. Given the small number of individuals considered experts in CE, we sought to include as many of them as possible.

2. Method

2.1. Participants

We asked ODEP for the names of experts who were either CE researchers, CE trainers, or SMEs who have provided CE services to job seekers for at least six months. ODEP provided the names of 15 experts whose experiences with CE varied; most were national trainers

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[2]This task was one of several tasks related to education, outreach, and training activities under ODEP's knowledge development and translation initiative.

Table 1
Geographic location and years of CE experience of experts

Geographic location	Years of CE experience*
Indianapolis, Indiana	*
Detroit, Michigan	*
Marietta, Georgia	*
Madison, Wisconsin	3
Frederick, Maryland	5
Athens, Georgia	6
Juneau, Alaska	6
New York City, New York	6
Bethlehem, Pennsylvania	6
Wheaton, Maryland	6
Atlanta, Georgia	7
Boston, Massachusetts	7
Indianapolis, Indiana	7
Juneau, Alaska	7
Athens, Georgia	7
Florence, Montana	8
Gautier, Mississippi	9
Rockville, Maryland	9
Smyrna, Georgia	10
Smyrna, Georgia	10
Missoula, Montana	11
Middleton, Ohio	11
Gautier, Mississippi	12
Boston, Massachusetts	15
Detroit, Michigan	16
Louisville, Kentucky	23

*We were not able to ascertain the number of years of experience for all consultants.

of CE or had provided CE services as part of the ODEP-funded grant initiatives.

We contacted each of the 15 experts to explain the project, inquire about their interest and willingness to participate, and ask if they could suggest any other experts that they thought should be included in the project. Any names suggested were first given to ODEP for approval prior to any contact with them. Through this process, we identified 28 experts. Of the 28 experts identified, 26 agreed to participate. Table 1 indicates the geographic location and years of CE experience for each expert. The experts were compensated for their time at their usual consultant rates.

2.2. Literature review

We began developing the KSAOs by reviewing CE background materials provided by ODEP. We also searched the academic literature for additional articles and information on CE. Research-based search engines (for example, EBSCOhost) were used, searching keywords such as customized employment, workforce needs, vocational rehabilitation, and workers with disabilities and employers, to locate articles. We also searched the Department of Labor's Occupational Information Network (O*NET) for information about the tasks and KSAOs involved in job titles that might be similar to those involved in CE. Based on the literature review, we developed a draft list of tasks and KSAOs associated with conducting the CE process.

2.3. Data collection

Our job analysis of CE was conducted between February and May of 2009. The data collection activities that occurred as part of the job analysis included interviews with SMEs and a series of iterative SME panel reviews.

2.3.1. Job analysis interviews
Eleven experts were interviewed between February and March of 2009 using a set of pre-determined questions covering the following areas:

- Characteristics of their organization
- The organization's experience with CE
- How CE is implemented in their organization
- The activities they perform during each component of CE
- General questions about training, experience, funding, and challenges.

Each interview lasted between one and two hours. Using the information gathered during the interviews, we revised our list of the tasks involved in each component of CE, and further identified, for each of the tasks, the KSAOs that would be needed to perform the task.

2.3.2. Expert panel reviews
Following the interviews, we began a series of expert panel reviews of the draft tasks and KSAOs. Nine of the 26 experts had been deliberately excluded from the expert panel reviews to provide fresh, unbiased ratings during the model verification step as explained below. We divided the remaining 17 experts into four groups. One group at a time received the draft task and KSAO lists. Each group provided written feedback on the lists, and then their feedback was discussed in a conference call with as many of the experts in that group as possible. Based on the written feedback and follow-up discussion, changes were made to the task and KSAO lists. Then the revised lists were sent to the next group of experts. This process continued until all four groups of experts had reviewed the tasks and KSAOs.

Table 2
Task and KSAO importance rating scales

Task importance rating question and scale
How important is this task for the successful implementation of CE by the employment specialist?
1. Not important
2. Somewhat important
3. Moderately important
4. Very important
5. Extremely important
KSAO importance rating question and scale
How important is this KSAO for the successful implementation of CE for the employment specialist?
1. Not important: employment specialist could still fulfill role successfully without this KSAO
2. Somewhat important
3. Moderately important: employment specialist might not fulfill role successfully without this KSAO
4. Very important
5. Extremely important: employment specialist could definitely not fulfill role successfully without this KSAO

2.4. Competency development

To develop the CE competencies, we used a Q-sort methodology, a technique in which individuals sort items into categories based on similarity [20]. The objective of the Q-sort in this study was to group KSAOs that were similar in nature and content.

Two project team members independently conducted the Q-sort, and then met to discuss their findings. In general, there was considerable overlap between the two sets of groupings and any conflicting groupings were reconciled through discussion. After reaching agreement on the KSAO groupings, the two project team members labeled the groupings/competencies based on the content of the KSAOs. Two senior project team members further distilled the competency list by combining some competencies and redefining others, creating a draft competency model of CE.

2.5. Model verification

We conducted a verification of the CE competency model to ensure its accuracy, completeness, and relevancy by administering a survey to all 26 of the subject matter experts. Nine of the 26 experts were not involved in the earlier steps so they could provide fresh, unbiased ratings of the model (i.e., naïve raters) as previously noted. Twenty of the 26 experts completed and returned the survey and of those 20, seven were naïve raters. Two of the 20 experts who completed the validation survey worked together, resulting in 19 sets of ratings.

The verification survey contained introductory paragraphs describing the nature of the CE process, a list of the 31 tasks grouped into four CE components, and a list of 84 KSAOs grouped into nine competencies. The survey was sent via email to all of the SMEs; however, to ensure the experts understood the survey and had the same framework in mind when making the ratings, we conducted conference calls with the experts to verbally explain the instructions and rating scales and to answer questions about the survey.

2.5.1. Task and KSAO ratings

In the survey, the experts rated the importance of the tasks and KSAOs using the five-point scales presented in Table 2. There was also a "Not at all relevant" rating option if the task or KSAO was deemed unnecessary for CE.

2.5.2. KSAO to CE component linkages

The project team identified linkages indicating those KSAOs needed for each of the four components of CE and presented the linkages in a matrix format as part of the verification survey. The experts were asked to delete or add linkages as needed rather than generate all the linkages to decrease the time required to complete the survey.

2.6. Data analysis of verification survey

We calculated descriptive statistics including the mean, standard deviation, and minimum and maximum ratings for each task and KSAO importance rating. We also calculated frequency distributions for each of the five possible ratings ("Not Important" through "Extremely Important") as well as for the "Not at all relevant" rating for the task and KSAO ratings. We set a threshold of 3.0 for the importance ratings, so that any task or KSAO with an average rating of less than "Moderately Important" was excluded from the final version of the model.

3. Results

3.1. Task results

Analysis of the mean task ratings revealed that none of the 31 tasks had a mean rating below the cutoff of 3.0 ("Moderately Important"). All of the 31 tasks were retained for the model. The majority of the tasks had mean ratings that fell between "Very Important" and "Extremely Important." Only five of the 31 tasks had mean ratings between "Moderately Important" and "Very Important." Table 3 displays the mean and standard deviation for the 31 task ratings[3].

3.2. KSAO results

All but one of the KSAOs had a mean rating of 3.0 or higher. The KSAO, "Skill in creating photographic images", had a mean rating of 2.78 so it was deleted from the CE competency model, making a total of 83 KSAOs. The KSAO, "Treats others with respect and dignity", had the highest mean importance rating at 4.84. Table 4 displays the 83 KSAO ratings by competency[4]. The KSAOs are listed in descending order of importance within each competency. Table 4 also shows the KSAO to CE Component linkages that were agreed upon by more than half of the expert reviewers (that is, at least 10 of the 19 sets of ratings indicated the linkage). Each of the 83 KSAOs was linked to a CE Component. All of the original linkages that were presented to the experts were retained and 12 more KSAO-CE component linkages were added using this criterion.

3.3. Competency results

Table 5 displays the competency importance scores and the percent of the total that each competency accounts for. "Having a Positive and Open Approach to Life" was found to be the most important competency. Planning and Organizing appeared to be the least important competency compared to the other competencies.

It had the smallest number of KSAOs and none of its KSAOs had a mean higher than 4.37.

3.4. Comparison of raters

Comparison of the importance ratings of the experienced raters (i.e., those who participated in earlier steps of the development) with the naïve raters (i.e., those who had not previously participated) suggests that the naïve raters tended to rate the tasks, and to a lesser extent, the KSAOs as higher in importance than the experienced raters. To determine the size of the difference between the experienced and naïve groups' ratings, we calculated Cohen's d using the mean importance rating of the experienced raters and the mean importance rating of the naïve raters for each task and KSAO. Of the 31 tasks, 14 had moderate effect sizes (Cohen's d between 0.50 and 0.80) and seven had large effect sizes (Cohen's d of 0.80 or higher). In all instances, the naïve group rated the tasks higher in importance compared to the experienced group. For the KSAOs, only two KSAOs had large effect sizes and 17 had moderate effect sizes. In all but two of these cases, the naïve group rated the KSAOs higher compared to the experienced group.

We investigated these results further to determine whether any changes to the model were merited. Although there were a number of moderate and large effects, the naïve and experienced raters tended to agree that the KSAOs were important. The disagreement between the groups was on the extent of importance (that is, whether the task or KSAO was moderately, very, or extremely important). Because ratings for both groups were concentrated on the upper end of the scale (that is, 3.0 and above), no changes were made to the model based on these findings.

4. Discussion

4.1. Strengths of the model

The CE competency model, shown in Fig. 1, has a number of strengths that will make it a useful tool for the vocational rehabilitation field. The model represents best practice in the area of CE as it was distilled from the input of numerous experts. It is comprehensive. It outlines both the tasks that are involved in each component of the CE process and the specific KSAOs needed to perform those tasks.

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[3]Table 3 provides abbreviated descriptions of the tasks. Full descriptions are provided in the Customized Employment Competency Model guide available on ODEP's website at http://www.dol.gov/odep/pdf/2011cecm.pdf

[4]Table 4 provides abbreviated descriptions of the KSAOs. Full descriptions are provided in the Customized Employment Competency Model guide available on ODEP's website at http://www.dol.gov/odep/pdf/2011cecm.pdf

Table 3
CE Task importance ratings by component

Component	Task		Mean	Standard deviation
Discovery	1	Explain the CE process to the job seeker and family.	4.17	1.15
	2	Anticipate, discuss, & set-up financial supports to implement and maintain the CE process.	3.47	1.18
	3	Complete forms/paperwork necessary to intake the job seeker.	3.44	1.29
	4	Identify a profile template for recording job seeker information.	4.06	1.21
	5	Identify and involve a support team.	4.41	0.62
	6	Begin the Discovery process with the job seeker.	4.83	0.38
	7	Observe the job seeker perform activities in a variety of settings.	4.59	0.71
	8	Participate with the job seeker in a novel or unfamiliar activity.	4.50	0.92
	9	Interview people who know the job seeker well.	4.56	0.81
	10	Review job seeker's files and other records to learn about the job seeker.	3.11	1.28
	11	Integrate the information gathered and complete the personal profile.	4.67	0.59
Job Search Planning	12	Obtain a preliminary review of the personal profile from the job seeker.	4.44	1.04
	13	Conduct a customized employment plan development meeting with the job seeker and the CE support team.	4.67	0.77
	14	Develop a plan for employment development activities with the job seeker.	4.94	0.24
	15	Develop a plan with the job seeker for disclosure of the disability.	4.76	0.56
	16	Develop a strength-based portfolio or resume with the job seeker.	4.38	1.15
Job Development & Negotiation	17	Present the job seeker, and CE as needed, to the employer.	4.89	0.32
	18	Set up informational interviews with potential employers.	4.22	1.17
	19	Conduct informational interviews and participate in tours of businesses.	4.89	0.32
	20	Determine potential needs of an employer.	4.89	0.32
	21	Identify& enter social networks to develop social capital for the job seeker.	4.56	0.98
	22	Develop, with the job seeker, a formal or informal customized employment proposal.	4.82	0.53
	23	Contact the employer to schedule a customized job development meeting.	4.67	1.03
	24	Conduct a customized job development meeting with the employer and job seeker.	4.78	0.55
	25	Analyze how to maximize naturally occurring supports.	4.78	0.55
Post-Employment Support	26	Assist job seeker in reporting benefits and monitoring impact of employment on benefits.	3.88	0.93
	27	Maintain close contact with the employee and employers during post-employment job training.	4.72	0.57
	28	Prepare and maintain employment records.	3.56	1.15
	29	Renegotiate, as needed, with the employer regarding tasks, additional responsibilities, promotion and career advancement, increased wages, or support provided.	4.72	0.46
	30	Support problem resolution processes by coaching the employer and the employee.	4.72	0.46
	31	Maintain close contact with clients and employers during the tenure of employment.	4.47	0.62

Most importantly, it provides a shared framework or common definition for CE within the field. In providing this shared framework, the model helps to differentiate CE from supported employment and other employment strategies by highlighting the need for persons providing CE services to see things from a different vantage point than that typical of vocational rehabilitation personnel or supported employment job developers.

4.2. Future research

The research presented here represents the first steps in identifying the full range of KSAOs needed by CE service provider personnel. As such, the model is in need of additional research to gather evidence of its validity with key outcomes (i.e., criterion-related validity). Future research should seek to identify, develop or obtain objective measures of CE outcomes and the CE competency model so the relationship between the model and the outcomes can be tested. These measures may be at the organizational level or the individual level or both.

The model identifies 83 KSAOs. While it is possible for one individual service provider to possess all 83 KSAOs and complete all four components of the process, often it will be a team of service providers that

Table 4
CE KSAO importance and component linkage ratings

Competency	KSAO	Mean	s.d.	All components	Discovery	Job search planning	Job development & negotiation	Post-employment support
Positive and Open Approach to Life	Takes initiative	4.68	0.58	●				
	Ability to work independently	4.53	0.61	●				
	Is persistent	4.53	0.61	●				
	Is open	4.53	0.61	●				
	Desires to work in community	4.53	0.70	●				
	Is flexible	4.53	0.51	●				
	Is optimistic	4.47	0.61		✓	✓	✓	
	Stays calm in crisis situations	4.26	0.65	●				
	Ability to react quickly in situations	4.17	0.79	●				
	Ability to receive criticism or negative feedback	4.00	0.88			✓	✓	
	Ability to tolerate frustration	4.00	0.75	●				
	Desires to help others	3.89	0.81	●				
Customized Job Development	Skill in interpreting how the job seeker's complexities impact work skills	4.79	0.54		✓	✓	✓	
	Skill in applying knowledge learned about the job seeker	4.74	0.45			✓	✓	✓
	Knowledge of support strategies	4.68	0.48	●				
	Ability to combine pieces of information	4.42	0.61		✓		✓	
	Knowledge of systematic instruction appropriate for people with disabilities	4.39	0.92		✓			✓
	Skill in teaching others	4.37	0.68					✓
	Ability to break down a process into individual components	4.32	0.89				✓	✓
	Ability to translate behaviors and skills into general capabilities	4.26	0.81		✓			
	Knowledge of local transportation networks	4.05	0.85		✓	✓	✓	
	Ability to direct others toward the completion of a goal	4.00	0.84			✓	✓	✓
	Ability to set goals individually or in conjunction with others	3.89	0.88	●				
	Skill in researching information	3.68	0.89				✓	
CE Components and Process	Knowledge of customized employment job development strategies	4.79	0.42			✓	✓	✓
	Knowledge of the CE process and activities	4.74	0.45	●				
	Knowledge of person-centered, strength-based planning techniques	4.63	0.60		✓	✓		
	Knowledge of the intent, purpose and potential outcomes of CE	4.47	0.77		✓	✓	✓	
	Skill in identifying long-term support and funding requirements	3.89	0.68		✓			
	Knowledge of resources on benefit planning	3.84	0.76		✓		✓	✓
	Knowledge of various types of portfolios and resumes	3.79	1.08		✓	✓	✓	
	Knowledge of available funding and resources	3.74	0.56	●				
	Knowledge of various income support and benefits	3.67	1.08		✓		✓	✓

Table 4
(*continued*)

Competency	KSAO	Mean	s.d.	All components	Discovery	Job search planning	Job development & negotiation	Post-employment support
	Knowledge of documentation required by organization or state governing bodies	3.37	1.21	•				
	Knowledge of state and local agencies that serve people with disabilities	3.35	0.79		✓		✓	✓
Respecting and Relating to Others	Treats others with respect and dignity	4.84	0.37	•				
	Has a world view that all people can work	4.74	0.56	•				
	Skill in being aware of and understanding others' reactions	4.33	0.59	•				
	Skill in interacting socially with others	4.32	0.67	•				
	Ability to work as part of a team	4.32	0.75	•				
	Ability to build and maintain relationships with others	4.32	0.67	•				
	Is culturally sensitive	4.32	0.67		✓		✓	✓
	Is curious or interested in learning about others	4.26	0.81	•				
	Values connecting with people	4.11	0.88	•				
	Ability to put others at ease	3.79	0.92		✓		✓	
Business and Employment Practices	Ability to identify unmet workplace needs	4.47	0.61				✓	
	Is professional or displays professional character	4.47	0.61				✓	
	Ability to imagine how a job or process will look after it is rearranged	4.37	0.76				✓	
	Skill in determining how a system, business or job should work	4.32	0.75				✓	
	Knowledge of work flow and work processes	3.95	0.91				✓	
	Skill in monitoring and assessing performance of oneself and others	3.95	0.78				✓	✓
	Ability to facilitate a meeting or discussion	3.94	1.00			✓	✓	
	Knowledge of standard business practices	3.79	0.79			✓	✓	
	Knowledge of personnel recruitment, selection, and training	3.63	0.9	•				
	Skill in using computer word-processing and presentation software	3.11	1.05		✓	✓	✓	
Business Networking	Knowledge of strategies for making connections with potential employers	4.58	0.61			✓	✓	
	Skill in negotiating a win-win solution	4.58	0.61				✓	✓
	Ability to build networks of social contacts	4.32	0.67		✓	✓	✓	
	Knowledge of local community and employers near job seeker's home	4.11	0.88			✓	✓	
	Ability to coordinate actions in relation to others' actions	4.00	0.94		✓		✓	✓
	Skill in persuading others to change their minds or behavior	3.95	0.78				✓	✓

Table 4
(*continued*)

Competency	KSAO	Mean	s.d.	All components	Discovery	Job search planning	Job development & negotiation	Post-employment support
	Knowledge of self-employment, resource acquisition strategies and micro-enterprise centers	3.84	0.96		✓	✓	✓	
	Knowledge of economic trends locally and nationally	3.17	0.92		✓	✓	✓	
Collecting, Interpreting and Using Information	Ability to observe, identify, and interpret relevant information	4.63	0.50	•				
	Ability to generate a number of ideas about a topic	4.47	0.61			✓	✓	
	Ability to tell when something is wrong or is likely to go wrong	4.47	0.51				✓	✓
	Ability to use logic and reasoning to identify strengths and weaknesses	4.39	0.61	•				
	Ability to come up with unusual or clever ideas	4.32	0.75			✓	✓	✓
	Skill in updating and integrating new information and knowledge	4.21	0.79	•				
	Skill in systematic inquiry	4.11	0.76		✓		✓	
Communicating with Others	Skill in active listening	4.53	0.51	•				
	Skill in communicating verbally	4.33	0.69	•				
	Ability to comprehend written material	4.11	0.83		✓			✓
	Ability to present information logically and in an organized manner	4.11	0.81		✓	✓	✓	
	Skill in communicating with people with disabilities	3.95	0.85	•				
	Skill in written communication	3.74	1.19	•				
	Ability to speak in front of a group of people	3.63	0.96		✓	✓	✓	
Planning and Organizing	Ability to manage a variety of job demands	4.37	0.76	•				
	Ability to set priorities and manage competing demands	4.32	0.67	•				
	Ability to look beyond the immediate details to see the bigger picture	4.21	0.79	•				
	Ability to organize steps into a logical sequence	4.16	0.90			✓	✓	
	Is detail-oriented and thorough	4.00	1.05			✓	✓	
	Skill in maintaining and keeping records	3.37	1.07		✓		✓	✓

work with the individual with the disability to develop a customized employment opportunity. The composition of service providers and roles within the team can vary substantially from one organization to another and even from one case to another within organizations. This variation made it difficult to identify KSAOs by role in the current research. Future research should identify the most effective team structures and use those teams as examples to define team roles. The 83 KSAOs could then be mapped to each team role, making it more likely for organizations to find service providers who meet a subset of the KSAOs to fill a particular role.

4.3. Implications

The development of the model has several implications for the vocational rehabilitation field, individual employment specialists, provider organizations, and individuals with disabilities. For the field of vocational rehabilitation, the model is a useful tool for setting and implementing standards for CE services. By representing the important tasks to be performed, the model inherently defines standards for performance and outlines what the process should generally include. The model represents the agreement and synthesis of best

Table 5
CE competency importance scores

Competency	Sum of mean KSAO importance ratings	Percent of total
Positive and Open Approach to Life	52.11	15.01%
Customized Job Development	51.60	14.86%
CE Components and Process	44.28	12.75%
Respecting and Relating to Others	43.33	12.48%
Business and Employment Practices	40.00	11.52%
Business Networking	32.54	9.37%
Collecting, Interpreting and Using Information	30.61	8.81%
Communicating with Others	28.39	8.18%
Planning and Organizing	24.42	7.03%
Total	347.27	100.00%

practices across practitioners. However, because CE is person-centered, driven by the particular interests, strengths, and conditions for success of each individual, it will differ slightly for each person for whom it is implemented. Flexibility can be maintained within the standards by not dictating a specific flow to the tasks or exactly how each task must be carried out. Yet, at the same time, the consistency of CE services across service providers can be increased if service providers follow the tasks specified in the model.

For individual employment specialists, the model implies the need for new skills. As noted previously, this model shows the need for skills that are not needed for implementing supported employment or other employment strategies. CE takes a different approach and requires different KSAOs such as "Skill in determining how a system, business, or job should work to identify operational improvements as potential negotiating points for a customized position," "Knowledge of self-employment and resource acquisition strategies and micro-enterprise centers," and "Skill in negotiating a win-win solution." This model informs the employment specialist what KSAOs s/he will need to be successful so the employment specialist can then take steps to acquire those KSAOs.

The model also has implications for provider organizations. As stated, the model defines the KSAOs needed to successfully implement this employment strategy. Any provider organization seeking to use this employment strategy needs to have staff on hand with these
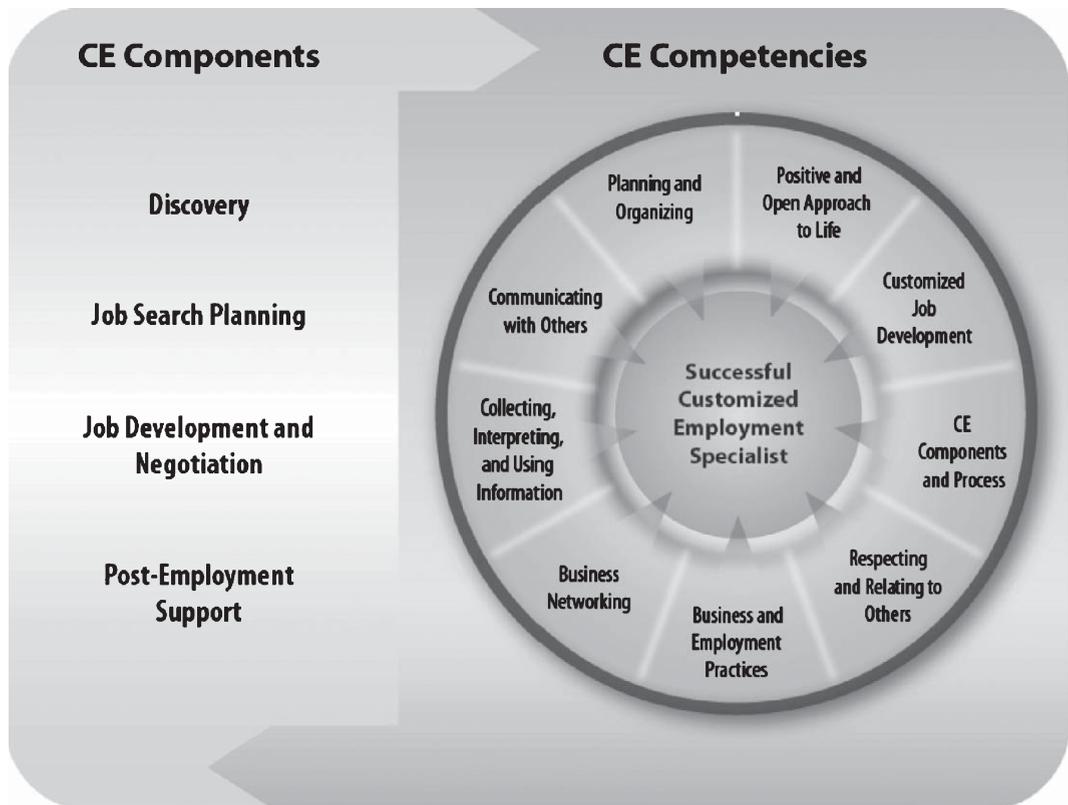

Fig. 1. The CE competency model.

skill sets. Thus, provider organizations should use the model in their recruitment and selection efforts.

Beyond recruitment and selection, the model also gives provider organizations a roadmap for training and managing their workforce. Organizations implementing CE can use the model to identify the KSAOs that may be lacking or weak within their workforce and then target training efforts to build those skills in their current workforce. Gaps in KSAOs could also be filled by hiring individuals with the missing KSAOs and building teams capable of supporting CE.

Lastly, the model has implications for individuals with disabilities. Organizations or employment specialists who use CE as an employment strategy for their clients and use the model to guide their training and development efforts will likely provide better service, and ideally more successful opportunities, to their clients. In addition, the use of the model will likely increase the number of providers and specialists with the necessary capabilities, making the CE employment strategy available to more individuals with disabilities. It will also make that service more consistent across individuals. By having the right skills and the right understanding of the process, the ultimate outcome will be increased opportunities for employment for individuals with disabilities.

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