

Employment Interventions for Youth With Disabilities: A Review of Transition Practices and Partners

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Michele A. Schutz, MEd¹, and Erik W. Carter, PhD¹

Abstract

The employment process for youth with disabilities often begins in high school. Although connecting youth to work is a recommended practice, the literature lacks a review of available interventions. This scoping review examined the practices and partners represented in 42 intervention studies addressing employment outcomes for transition-age youth (14–22 years old) with disabilities. These interventions varied widely, with a total of 25 components addressing employment preparation, job placement, other supports for youth, supports for other stakeholders, and collaborative/organizational strategies. Although families and employers participated in these interventions, the most prominent players were school staff and agency providers. We offer recommendations for research and practice around strengthening employment practices and engaging multiple stakeholders in preparing youth with disabilities for work.

Keywords

employment, interventions, transition services, scoping review, stakeholder involvement

The field of secondary transition has long strived to improve the postsecondary employment outcomes of youth with disabilities. Numerous follow-up studies spanning several decades have examined the vocational outcomes of youth with disabilities and the factors that predict employment in the early years after graduation (e.g., Bullis, Yovanoff, et al., 2002; Gaylord-Ross et al., 1988). Across these studies, researchers have identified how the instruction, knowledge, and experiences gained during high school can contribute to employment success for youth with disabilities. Such findings have been used to inform interventions, or strategies, that support youth with disabilities within the employment process.

Despite long-standing efforts to address employment gaps and prepare youth to work, individuals with disabilities continue to experience much lower rates of employment than their peers without disabilities. According to data from the 2017 American Community Survey, only 36.3% of working-age adults with disabilities were employed, compared with 74.8% of adults without disabilities (Winsor et al., 2019). According to the U.S. Bureau of Labor Statistics (2018), individuals with disabilities were more likely to work part-time. Even among individuals with disabilities who do find jobs, many work minimal hours, work in segregated settings, have jobs that do not align with their skills or interests, or receive low wages, benefits, or advancement opportunities (e.g., Honeycutt et al., 2017).

Much work is still needed to elevate the employment outcomes of youth with disabilities.

The transition through high school to adulthood is an ideal time for improving employment outcomes for individuals with disabilities. The Individuals with Disabilities Education Improvement Act (2004) mandates that schools provide youth with disabilities transition services and supports to ensure they are prepared for postsecondary education, independent living, and *employment*. Nonetheless, the persistent pattern of poor employment outcomes for youth with disabilities suggests that prevailing instruction and supports may not be sufficient for youth to successfully obtain and sustain integrated work. Although the literature has highlighted an array of instructional practices that are useful for teaching employment skills to youth (e.g., Gilson et al., 2017), other considerations beyond instruction may also be essential to connecting youth to employment. For example, in a recently updated review of secondary transition predictors of postsecondary success, Mazzotti and colleagues (2021) highlighted the importance of promoting

¹Vanderbilt University, Nashville, TN, USA

Corresponding Author:

Michele A. Schutz, Department of Special Education, Vanderbilt University, One Magnolia Circle, Peabody College, Nashville, TN 37203, USA.

Email: maperch1816@gmail.com

skill development that is tangential to employment (e.g., self-determination and self-advocacy, independent living skills, academic skills); providing youth with access to opportunities within and outside of the school building that predict employment (e.g., inclusion in general education, career counseling, work-based learning opportunities, paid jobs during high school); and facilitating parent expectations for youth to work. The literature also suggests that interventions should address other youth and family needs supporting employment, such as individualized case management and supports that consider culture and socioeconomic status (Trainor et al., 2020).

Given the wide range of considerations that may be relevant for interventions that address employment outcomes for youth with disabilities, educators would benefit from knowing about all the potential practices for supporting youth in the employment process. Surprisingly, no scoping review has specifically focused on examining all available interventions for transition-age youth with disabilities that are designed to lead to employment. A review of intervention packages regarding the employment process for youth is important for two primary reasons. First, such a review could identify the constellation of available interventions for addressing early employment outcomes. A comprehensive map of the full range of available employment interventions and the components they incorporate could guide the decisions of transition planning teams as they strive to prepare students for work. It could also identify intervention components that are underutilized in the field.

Second, a review of employment interventions could pinpoint the ways in which various transition partners contribute to employment outcomes. The transition literature emphasizes the importance of multiple stakeholders collaborating to support youth with disabilities transitioning to adulthood (Mazzotti et al., 2021). Educators often struggle to connect youth to employment in the absence of strong partners who can help facilitate skill development, work opportunities, and connections necessary for youth to access meaningful employment. Yet, the contributions of an array of stakeholders can be critical. For example, the Workforce Innovation and Opportunity Act of 2014 requires vocational rehabilitation agencies to allocate funding for the provision of pre-employment transition services (pre-ETS) to youth with disabilities ages 14 to 22. Thus, providers are tasked with supporting transition-age individuals in identifying employment opportunities, helping them apply for work, and facilitating on-the-job supports. Families can provide input on the interests, preferences, strengths, and needs of their children as they relate to potential career pathways; these are insights that educators and providers may not have. Employers have unique perspectives into the needs of businesses, and their willingness to hire and keep youth with disabilities as employees is ultimately essential to the

success of any employment intervention. Yet, the diversity of ways in which school staff, agency providers, families, and employers have contributed to employment interventions has not been summarized within the literature. Transition planning teams would benefit from knowing how specific stakeholders have contributed to employment interventions in collaboration with schools.

This purpose of this article is to provide an overview of the core components and primary partners within transition interventions focused on connecting youth with disabilities to work. Unlike a traditional meta-analysis, our focus was not on examining the efficacy of this large collection of diverse interventions. Instead, the current scoping review provides a fuller map of all available intervention approaches and the individuals who delivered them. We addressed two research questions:

Research Question 1 (RQ1): What intervention approaches have been used to promote employment outcomes for youth with disabilities?

Research Question 2 (RQ2): In what ways have families, schools, agencies, employers, and other stakeholders contributed within these interventions?

Method

Inclusion Criteria

We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension guidelines for scoping reviews (PRISMA-ScR; Tricco et al., 2018) to map studies describing relevant employment interventions. Given that the literature on employment interventions is found in both published and unpublished reports, we included both peer-reviewed articles and gray literature in our search. This required distinguishing reports from studies. *Reports* refer to each separate publication (e.g., journal article, project report), and *studies* refer to each independent evaluation of a particular intervention. A single study was sometimes described in multiple reports; likewise, a single report sometimes described multiple studies. We selected reports for review based on four inclusion criteria. First, all reports were published in English. Second, at least half of participants (a) were between the ages of 14 and 22 (i.e., the ages at which most states mandate schools to provide transition services) and (b) had a disability. Third, all studies examined the impact of an employment intervention. We excluded studies that retrospectively examined employment for youth who had previously received school or agency services (i.e., predictor studies). Fourth, all studies reported on the employment status of youth (i.e., employed or not employed) at any time point after the intervention.

Search Procedures and Screening

We carried out a comprehensive search to identify all reports meeting the inclusion criteria and published at any time prior to June 2020. We searched the full ProQuest system (95 databases inclusive of PsychINFO and ERIC) using terms associated with disability, age span of interest, intervention, and research design. Figure 1 displays all search terms and PRISMA-ScR screening procedures. We also completed a hand search of all issues of two journals focused on employment and transition-age youth with disabilities: *Career Development and Transition for Exceptional Individuals* and *Journal of Vocational Rehabilitation*. The initial search resulted in 3,821 unique reports. In the first round of screening, we read the titles and abstracts using inclusion criteria to eliminate retrospective studies and those in which more than half of youth were out of the age range or lacked disabilities. In the second round of screening, we read the full text of reports retained from the first round ($n = 97$) and kept reports that met inclusion criteria ($n = 41$). In addition, we screened 29 reports identified through ancestral and forward searches, adding five reports to the review ($n = 46$).

The first author served as the first coder. To assess interrater reliability for screening and coding of reports, a doctoral student served as a second coder. We adopted search conventions used in other published reviews (e.g., Gilson et al., 2017), which involved conducting interrater reliability on a randomly selected subset of articles throughout the screening and coding process. We calculated interrater reliability by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. During the first round of screening, the second coder reviewed a random sample of 763 reports (20.0%); interrater reliability was 99.8%. During the second round, the second coder reviewed the full text of 26 reports (20.6%). Interrater reliability was 100%. Given that reliability was exceptionally high during each round, we did not increase the sample of reports double-coded beyond 20%.

Coding of Studies

To address our research questions, we coded the following aspects of each study: (a) general study characteristics, (b) intervention components, and (c) stakeholder involvement. We coded multiple reports that reflected the same study (e.g., several different reports addressed the same evaluation of the Structured Training Employment Transitional Services intervention package, just at different time points). When reports addressed more than one study, we reviewed each study separately (e.g., the Mamun et al., 2019, report on PROMISE [Promoting the Readiness of Minors in Supplemental Security Income] addressed six different studies). This ensured that each study was represented only once in our review.

Our review of general study characteristics focused on participant characteristics and settings. *Participant characteristics* included mean age, sex/gender, race/ethnicity, disability category (i.e., intellectual and developmental disabilities [IDD], learning disability, emotional/behavioral disability, physical/visual/hearing disability, other), and pre-treatment variables (e.g., receipt of educational services, previous work experiences). *Setting characteristics* included intervention locale (i.e., urban, suburban, rural), geographic location, and environment (e.g., K–12 school, agency office, workplace).

We defined *intervention components* as distinct practices or strategies used as part of overarching intervention packages described in each study. We identified these 25 components, refining our list as each new study was found and coded. See Table 1 for a list of components and their descriptions. We used a directed approach to content analysis with both inductive and deductive category development (Hsieh & Shannon, 2005). We defined intervention components by drawing upon reviews of evidence-based transition practices and predictors of employment (e.g., Mazzotti et al., 2021; Rowe et al., 2021), as well as developing new components that emerged as we coded studies in our review. After identifying each component reflected in the study, we then noted which individuals implemented the component. Options included agency provider, school staff member, employer, family member, and researcher. More than one implementer could be coded. When no information was provided, we coded the implementer as not reported. Three of the 25 intervention components did not lend themselves to a particular implementer: coordination of services, compilation of resources, and interagency collaboration.

We characterized *stakeholder involvement* as the ways in which school staff, agency providers, families, and employers were involved in interventions and their evaluations. For each study, we coded whether each group (a) informed the intervention (i.e., assisted implementers in developing components of the intervention); (b) participated in the intervention (i.e., assisted with implementing intervention components or received support as a result of the intervention); (c) contributed views on social validity (i.e., provided information on the goals, procedures, or outcomes of the intervention); or (d) contributed data on youths' employment outcomes.

We calculated interrater reliability among two independent coders for 12 studies (21.4%). Reliability averaged 88.4% (range, 82.5%–95.0%) across studies. To address disagreements, we reviewed the original study and came to consensus for the final analysis.

Results

We reviewed 46 reports: 34 reports from peer-reviewed journal articles, eight reports from private or government agencies, three dissertations or theses, and one conference

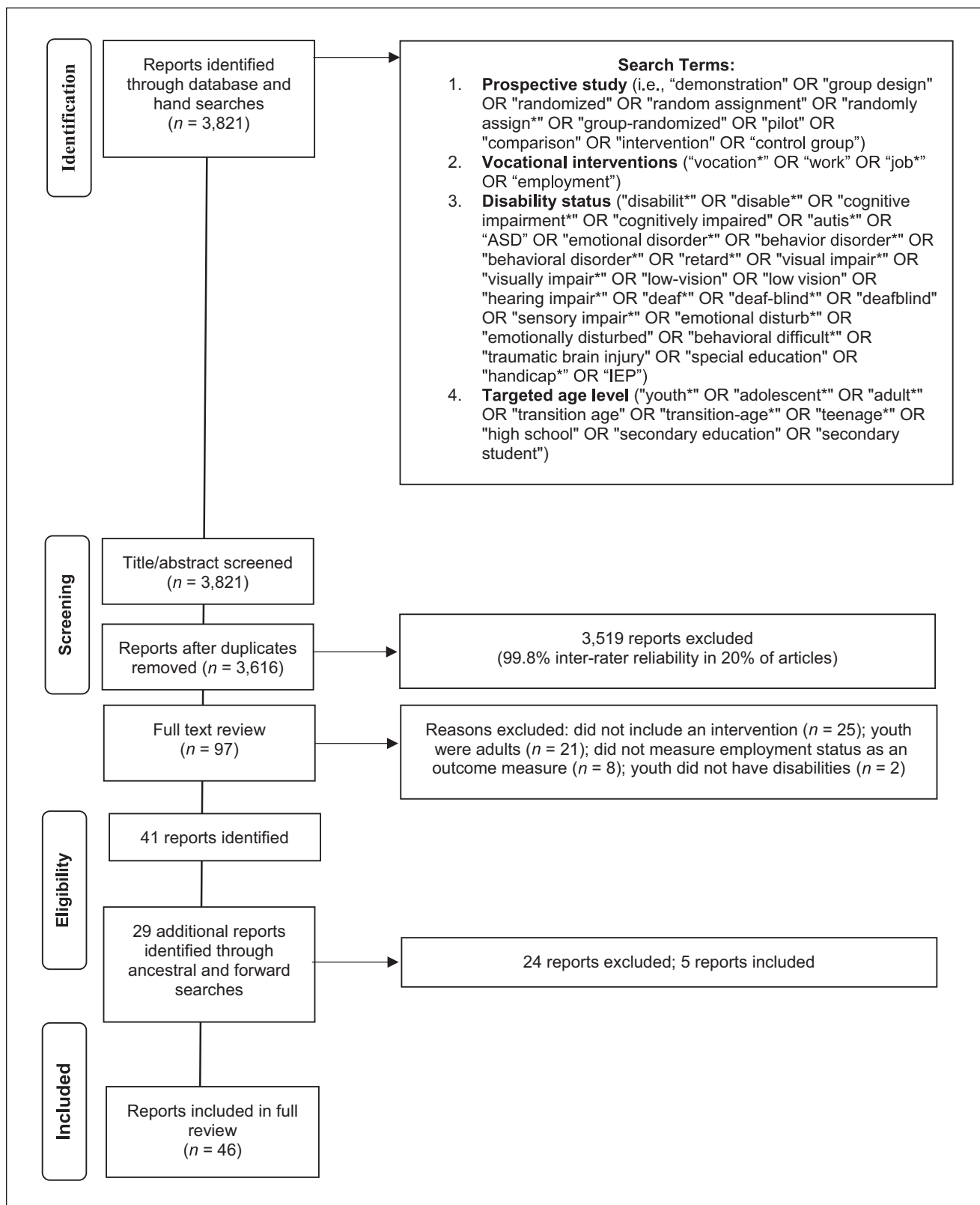


Figure 1. PRISMA diagram.

Table 1. Intervention Components and Descriptions.

Component	Description	n (%) ^a
<i>Employment preparation</i>		
1. Individualized planning	Youth's individual strengths, weaknesses, preferences, support needs, or goals were identified and used.	36 (85.7)
2. Skills assessment	Youth's skills were assessed through formal or informal measures.	32 (76.2)
3. Career exploration	Youth received support in understanding the value of working and identifying different career pathways.	19 (45.2)
4. Job development	Youth received support in identifying job opportunities or applying to jobs (e.g., developing a resume, mock interviews, completing applications).	36 (85.7)
5. Employment skills training	Youth received instruction on employment-related skills (e.g., "soft" skills, social skills, job-specific tasks).	35 (83.3)
6. Work-based learning	Youth received unpaid opportunities to learn in a workplace or simulated work setting (e.g., worksite tours, job shadowing, volunteering, job try-outs, unpaid internships, apprenticeships).	22 (52.4)
<i>Job placement and support</i>		
7. Direct job placement	Youth was directly placed into a paid job or paid internship by intervention implementers.	31 (73.8)
8. On-the-job supports	Youth received training or supports at the workplace (e.g., job coaching, accommodations, environmental modifications).	31 (73.8)
9. Natural supports	Youth received opportunities to gain feedback or support from coworkers or supervisors at the workplace.	8 (19.1)
<i>Other supports for youth</i>		
10. Other skills training	Youth received instruction on academic, functional, or other skills not explicitly related to employment.	26 (61.9)
11. Transportation	Youth received transportation or supports for accessing transportation to worksite.	27 (64.3)
12. Benefits/financial counseling	Youth or family received resources or training regarding the impact of work on receipt of government benefits or other financial planning support.	17 (40.5)
13. Mentorship/peer support	Youth was explicitly connected to a mentor or peer for support outside of the workplace.	16 (38.1)
14. Financial assistance	Youth or family directly received money for education, services, or life necessities.	12 (28.6)
15. Related services	Youth received related services to support education or employment (e.g., behavior intervention services, social work services, physical therapy, speech therapy).	7 (16.7)
16. Housing supports	Youth or family received resources or counseling around housing or living supports.	11 (26.2)
17. Health supports	Youth or family received resources or direct services related to physical or mental health.	16 (38.1)
18. Postsecondary education supports	Youth received resources or counseling on postsecondary education options or supports for completing a postsecondary education program.	18 (42.9)
<i>Supports for other stakeholders</i>		
19. Supports for employers	Employer received training, resources, or support from intervention implementers related to working with youth with disabilities.	22 (52.4)
20. Supports for schools/agencies	School or agency staff received training related to supporting youth with disabilities.	25 (59.5)
21. Supports for families	Youth's family received training, resources, or supports related to supporting their youth around employment.	30 (71.4)
<i>Collaborative and organizational strategies</i>		
22. Coordination of services	An entity/person was charged with connecting youth to services from agencies, systems, or programs outside of the school.	31 (73.8)
23. Compilation of resources	Youth/stakeholders were provided with explicit access to organized information around employment (e.g., resource map, transition fair, support center, resource binder, or inventory).	15 (35.7)
24. Interagency collaboration	Explicit procedures or events were implemented to facilitate stakeholders from different groups to collaborate regarding youth employment.	33 (78.6)
25. Flexible programming	School staff or agency providers adjusted typical scheduling, requirements for completion, or placement options to allow for youth to access employment.	20 (47.6)

^aPercentage of studies in which component was implemented by at least one implementer.

paper. Reports spanned more than 40 years: eight were published from 1980 to 1989, five from 1990 to 1999, seven from 2000 to 2009, 25 from 2010 to 2019, and one after 2019. These 46 reports described 42 unique studies (i.e., evaluations of interventions). Online supplemental Table S1 provides an in-depth summary of all reports, including intervention descriptions, research designs, settings, and youth. In the sections that follow, we first present general study characteristics to provide overall context. We then answer our research questions by reviewing key intervention components (RQ1) and ways in which diverse stakeholders were involved (RQ2).

General Study Characteristics

Across these 42 studies, the total reported number of youth was 22,189 ($M = 528.3$ across studies, range = 5–3,024). Among studies reporting youth age, the mean was 17.1 years. Among studies reporting the educational status of youth, 84.7% were receiving K–12 school services at the time of the study; the rest had graduated or dropped out from school. Among studies reporting the sex/gender of youth, most were male (63.0%). Among studies reporting youth race/ethnicity, 32.0% were African American/Black, 30.7% were White, and 26.6% were Hispanic/Latinx. Among studies reporting youth disability types, 45.5% had IDD; 12.3% had emotional/behavioral disabilities or mental illness; 9.9% had learning disabilities; and 6.3% had physical, visual, or hearing disabilities. See Table S1 for youth characteristics by study.

Two thirds of studies (66.7%) were implemented in urban locales, 23.8% in suburban, and 16.7% in rural. Studies took place in the U.S. Northeast (26.2%), Midwest (21.4%), South (23.8%), and West (28.6%) regions, and 7.1% were outside the United States (7.1%). Aspects of these interventions were implemented across multiple environments, including workplace settings (54.8%), K–12 schools (38.1%), postsecondary education facilities (26.2%), agency facilities (19.0%), youths' homes (21.4%), residential or medical care facilities (16.7%), and virtual settings (23.8%). Among studies reporting intervention duration, the average was 17.03 months ($SD = 11.81$).

What Intervention Approaches Have Been Used to Promote Youth Employment Outcomes?

We identified 25 distinct intervention components across the 42 studies. Components and their definitions are organized in Table 1: employment preparation ($n = 6$); job placement and support ($n = 3$); other supports for youth ($n = 9$); supports for other stakeholders (i.e., employers, schools, agencies, or families, $n = 3$); and collaborative and organizational strategies used ($n = 4$). The median number of components in an intervention package within a single

study was 13.7. However, the number of components ranged from four to 22 across these studies. Table 2 summarizes the presence of each intervention component within each study.

The components used most frequently across studies related to employment preparation. Most interventions (85.7%) incorporated *individualized planning*, such as person-centered planning meetings or youth correspondence with assigned case managers. *Job development* was equally common (85.7%) and included support in conducting job searches and reaching out to potential employers, as well as assistance with completing job applications, developing resumes, and mock interviewing. Similarly, most studies (83.3%) incorporated *employment skills training* by providing instruction on job-specific tasks, social skills, or other soft skills. Among the less common intervention components were collateral supports to youth that were not directly related to employment. For example, *related services*, such as behavioral intervention consultation services for youth with autism or occupational therapy services addressing barriers to employment, were addressed in 16.7% of studies. Similarly, 26.2% of studies incorporated *housing supports* for youth and families and 38.1% addressed youth *health supports* as needed.

In What Ways Have Various Stakeholders Contributed Within These Interventions?

Informing the intervention. School staff, agency providers, families, and employers were involved in various ways across studies. Table 3 summarizes this stakeholder involvement by study. At least one stakeholder group *informed the intervention* in 61.9% of studies. More than half of studies (52.4%) drew upon the input of family members to inform the intervention, 40.5% relied on agency providers' input, 26.2% on school staff input, and 19.0% on employer input. For example, stakeholders attended person-centered planning meetings that identified necessary intervention components, participated on advisory boards steering intervention development, and engaged in community conversation events to generate ideas on expanding job opportunities. Mental health workers and law enforcement personnel were also involved in these tasks in a handful of studies.

Participating in the intervention. At least one stakeholder *participated in the intervention* across 92.9% of studies, while the remaining studies solely involved researchers or unspecified implementers. Agency providers—primarily vocational rehabilitation specialists—participated in the intervention in 76.2% of studies. School staff—mostly special educators—participated in the intervention in 59.5% of studies. Both groups directly implemented multiple intervention components primarily related to employment preparation (e.g., individualized planning, skills assessment,

Table 2. Intervention Components by Study.

Study	Employment preparation					Job placement and support					Other supports for youth					Supports for other stakeholders					Collaborative/organizational strategies				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Extended transition services																									
Izzo (1999); Izzo et al. (2000)	X	X	—	X	X	X	X	X	X	X	X	—	—	—	—	—	—	—	—	—	X	—	—	X	—
Project RENEW																									
Cheney et al. (1998); Malloy et al. (1998); Hagner et al. (1999)	X	—	—	X	X	X	—	X	—	—	—	X	X	X	X	X	X	X	—	—	X	X	—	X	X
Hagner et al. (2008)	X	—	—	X	X	X	—	X	—	—	—	X	X	X	X	X	X	X	—	—	X	X	—	X	X
Project SEARCH																									
Müller & VanGilder (2014)	—	X	X	X	X	X	X	—	X	X	X	—	—	—	—	—	—	—	X	X	—	—	—	X	X
Wehman et al. (2014, 2017)	X	X	X	X	X	X	X	X	—	—	X	—	—	—	—	—	—	—	X	X	—	—	—	X	X
Christensen et al. (2015)	X	X	X	X	X	X	X	—	—	—	X	—	—	—	—	—	—	—	X	X	—	—	—	X	X
Wehman et al. (2020)	X	X	X	X	X	X	X	X	X	X	X	—	—	—	—	—	—	—	X	X	—	—	—	X	X
PROMISE																									
Mamun et al. (2019; AK)	X	X	X	X	X	X	X	—	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mamun et al. (2019; ASPIRE); Ipsen et al. (2019a, 2019b)	X	X	X	X	X	X	X	—	X	X	X	X	X	X	X	X	X	X	—	X	X	X	X	X	X
Mamun et al. (2019; CA)	X	X	X	X	X	X	X	—	X	X	X	X	X	X	X	X	X	X	—	X	X	X	X	X	X
Mamun et al. (2019; MD)	X	X	X	X	X	X	X	—	X	X	X	X	X	X	X	X	X	X	—	X	X	X	X	X	X
Mamun et al. (2019; NY)	X	X	X	X	X	X	X	—	X	X	X	X	X	X	X	X	X	X	—	X	X	X	X	X	X
Mamun et al. (2019; WI); Hartman et al. (2019); Schlegelmilch et al. (2019)	X	X	X	X	X	X	X	—	X	X	X	X	X	X	X	X	X	X	—	X	X	X	X	X	X
STETS																									
Riccio & Price (1984); Bangser (1985); Kerachsky et al. (1985); Kerachsky & Thornton (1987)	—	X	—	X	X	—	X	X	X	X	X	—	X	—	—	—	—	—	X	—	X	X	—	—	—

(continued)

Table 2. (continued)

Study	Employment preparation					Job placement and support					Other supports for youth					Supports for other stakeholders					Collaborative/organizational strategies					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Summer work intervention package																										
Carter et al. (2009)	X	X	—	X	—	—	—	X	—	—	—	—	—	—	—	—	—	—	X	X	X	X	X	X	—	
Carter et al. (2011)	X	—	—	X	—	—	X	—	—	X	—	—	—	—	—	—	—	—	X	X	X	X	X	X	—	
TAKE CHARGE																										
Powers et al. (2012)	X	X	—	—	X	—	—	—	X	—	—	X	—	—	—	—	—	X	—	—	X	—	—	X	—	
Geenen et al. (2013)	X	X	—	—	X	—	—	—	X	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—	—	
Texas Statewide Youth Leadership Forum																										
Roberts (2013); Zhang et al. (2019)	X	X	—	—	—	—	—	—	X	—	—	X	—	—	—	—	—	—	—	—	—	X	—	X	—	
YTDP																										
Fraker et al. (2014; CO); Pike et al. (2010)	X	X	X	X	X	X	X	X	—	X	X	X	—	X	—	X	X	X	X	X	X	X	X	X	X	
Fraker et al. (2014; Erie, NY)	X	X	X	X	X	X	X	—	X	X	X	—	X	—	X	—	X	X	X	X	X	X	X	X	X	
Fraker et al. (2014; Bronx, NY)	X	X	X	X	X	X	X	—	X	X	X	—	X	—	X	—	X	X	X	X	X	X	X	X	X	
Fraker et al. (2014; WV)	X	X	—	X	X	—	X	—	X	X	X	—	X	—	X	—	X	X	X	X	X	X	X	X	X	
Fraker et al. (2014; FL); Fraker et al. (2018)	X	X	X	X	X	X	X	—	X	—	X	—	X	—	X	—	X	X	X	X	X	X	X	X	X	
Fraker et al. (2014; MD)	X	X	X	X	X	X	X	—	X	—	X	—	X	—	X	—	X	X	X	X	X	X	X	X	X	
Other																										
La Greca et al. (1983)	—	—	—	—	X	—	X	—	—	—	—	X	—	—	—	—	—	—	—	X	—	—	—	—		
Gitman (1987)	X	X	—	X	X	—	X	—	X	X	—	—	—	—	—	—	—	—	X	X	X	X	X	X		
Bernacchio & Fortinsky (1988)	X	X	—	X	X	X	—	—	X	X	—	X	—	—	—	—	—	—	X	X	X	X	X	X		
Edwards et al. (1988)	—	X	X	X	X	—	—	—	X	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Bullis et al. (1994)	X	X	—	X	X	—	X	X	—	—	—	—	—	—	X	—	—	—	X	—	—	—	—	—		
Luecking & Fabian (2000)	X	X	—	X	X	—	X	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Bullis, Moran et al. (2002)	X	X	—	X	X	—	X	—	—	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—		
Taylor et al. (2004)	—	—	—	X	X	—	X	X	X	—	—	—	—	—	—	—	—	X	X	X	X	X	X	X		
Hillier et al. (2007)	X	X	—	X	X	—	X	X	—	—	—	—	—	—	—	—	—	—	X	—	—	—	—	—		
Winsor et al. (2011)	X	X	—	X	X	—	X	X	—	X	X	—	—	—	—	—	—	—	X	X	X	X	X	X		
Balcazar et al. (2012)	X	X	X	X	X	X	X	—	X	X	—	X	—	X	—	—	—	—	—	X	X	X	X	X		
Duersch (2013)	—	—	—	X	—	—	—	—	X	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—		
Verhoef et al. (2013)	X	X	—	X	X	—	X	—	X	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—		
Lynas (2014)	X	X	X	X	X	X	X	—	X	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—		
Nochajski & Schweitzer (2014)	X	X	X	X	X	X	X	—	X	X	—	X	—	—	—	—	—	—	—	—	—	—	—	—		
Balcazar et al. (2018)	X	—	—	X	X	—	X	—	X	X	X	—	—	—	—	—	—	—	X	—	—	—	—	—		
McLaren et al. (2017)	X	—	—	X	—	—	X	—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—		

Note. Numbers in the top row refer to the intervention components defined in Table 1. Project RENEW = Rehabilitation, Empowerment, Natural Supports, Education, and Work; PROMISE = Promoting the Readiness of Minors in Supplemental Security Income; STETS = Structured Training and Employment Transitional Services; YTDP = Youth Transition Demonstration Project.

Table 3. Stakeholder Involvement by Study.

Study	Informed the intervention			Participated in the intervention			Contributed views on social validity			Contributed data on outcomes			
	A	E	F	A	E	F	A	E	F	A	E	F	S
<i>Extended transition services</i>													
Izzo (1999); Izzo et al. (2000)	—	—	—	X	—	X	—	—	—	X	—	X	—
<i>Project RENEW</i>													
Cheney et al. (1998); Malloy et al. (1998); Hagner et al. (1999)	X	—	X	X	X	X	—	—	—	—	—	—	—
Hagner et al. (2008)	X	—	X	—	—	—	X	—	—	—	—	—	—
<i>Project SEARCH</i>													
Müller & VanGilder (2014)	—	—	—	X	X	X	X	X	X	X	X	X	X
Wehman et al. (2014, 2017)	—	X	X	X	X	X	—	—	—	X	X	X	X
Christensen et al. (2015)	X	X	X	X	X	X	—	—	—	X	—	—	X
Wehman et al. (2020)	—	—	—	X	X	X	—	—	—	—	—	X	X
<i>PROMISE</i>													
Mamun et al. (2019; AK)	X	—	—	X	X	X	X	X	X	X	—	X	—
Mamun et al. (2019; ASPIRE); Ipsen et al. (2019a, 2019b)	X	—	X	X	X	X	X	X	X	—	—	X	—
Mamun et al. (2019; CA)	X	—	X	X	X	X	X	X	X	X	—	X	X
Mamun et al. (2019; MD)	X	—	X	X	X	X	—	—	—	X	—	X	X
Mamun et al. (2019; NY)	—	—	X	X	X	X	X	X	X	X	—	X	X
Mamun et al. (2019; WI); Hartman et al. (2019); Schlegelmilch et al. (2019)	X	—	X	X	—	X	X	X	X	—	—	X	—
<i>STETS</i>													
Riccio & Price (1984); Bangser (1985); Kerachsky et al. (1985); Kerachsky & Thornton (1987)	—	—	—	X	X	X	—	—	X	—	—	X	—
<i>Summer work intervention package</i>													
Carter et al. (2009)	X	X	X	X	X	X	X	X	X	X	—	X	X
Carter et al. (2011)	X	X	X	X	X	X	X	X	X	—	—	X	X
<i>TAKE CHARGE</i>													
Powers et al. (2012)	—	—	—	—	—	—	X	—	—	—	—	—	X
Geenen et al. (2013)	—	—	—	—	—	—	X	—	—	—	—	—	X
<i>Texas Statewide Youth Leadership Forum</i>													
Roberts (2013); Zhang et al. (2019)	—	—	—	—	—	—	—	—	—	—	—	X	—

(continued)

Table 3. (continued)

Study	Informed the intervention					Participated in the intervention					Contributed views on social validity					Contributed data on outcomes				
	A	E	F	S		A	E	F	S		A	E	F	S		A	E	F	S	
YTDP																				
Fraker et al. (2014; CO); Pike et al. (2010)	X	—	X	—	—	X	X	X	—	—	X	—	X	—	—	X	—	X	—	—
Fraker et al. (2014; Erie, NY)	X	—	X	—	—	X	X	X	X	—	X	—	X	—	—	X	—	X	—	—
Fraker et al. (2014; Bronx, NY)	X	—	X	—	—	X	X	X	—	—	X	—	X	—	—	X	—	X	—	—
Fraker et al. (2014; WV)	—	—	X	—	—	X	X	X	—	—	X	—	X	—	—	X	—	X	—	—
Fraker et al. (2014; FL); Fraker et al. (2018)	X	—	X	—	—	X	X	X	—	—	X	—	X	—	—	X	—	X	—	—
Fraker et al. (2014; MD)	—	—	—	—	—	—	X	X	—	—	X	—	X	—	—	—	—	X	—	—
Other ^a																				
La Greca et al. (1983)	—	—	—	—	—	—	X	—	—	—	—	—	—	—	—	—	—	—	—	X
Gittman (1987)	X	X	X	X	—	X	X	X	X	—	—	X	—	—	—	—	—	—	—	—
Bernacchio & Fortinsky (1988)	X	—	—	X	—	X	X	X	X	—	—	X	—	—	—	X	—	X	—	X
Edwards et al. (1988)	—	—	—	—	—	—	X	X	X	—	—	X	—	—	—	—	—	X	—	—
Bullis et al. (1994)	—	—	—	—	—	X	—	—	X	—	—	X	—	—	—	—	—	—	—	—
Luecking & Fabian (2000)	—	—	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Buillis et al. (2002)	—	—	X	—	—	X	—	—	X	—	X	—	—	—	—	—	—	—	—	X
Taylor et al. (2004)	—	—	—	—	—	X	X	—	—	—	X	—	—	—	—	—	—	—	—	—
Hillier et al. (2007)	—	X	X	—	—	—	X	X	X	—	—	—	—	—	—	—	X	—	—	—
Winsor et al. (2011)	X	X	—	—	—	X	X	X	X	—	X	—	X	—	—	X	—	—	—	—
Balcazar et al. (2012)	—	—	X	—	—	X	—	—	—	—	X	—	—	—	—	X	—	—	—	—
Duersch (2013)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Verhoef et al. (2013)	—	—	—	—	—	X	—	—	X	—	X	—	—	—	—	—	—	—	—	—
Lynas (2014)	—	—	X	—	X	X	X	—	—	—	—	—	—	—	—	—	—	—	—	—
Nochajski & Schweitzer (2014)	—	—	—	—	—	X	X	X	X	—	—	—	—	—	—	—	—	—	—	—
McLaren et al. (2017)	—	—	—	—	—	X	X	X	X	—	—	—	—	—	—	X	—	X	—	—
Balcazar et al. (2018)	—	X	—	—	—	X	X	X	X	—	—	—	—	—	—	X	—	—	—	X

Note. A = agency provider; E = employer; F = family member; S = school staff; Project RENEW = Rehabilitation, Empowerment, Natural Supports, Education, and Work; PROMISE = Promoting the Readiness of Minors in Supplemental Security Income; STETS = Structured Training and Employment Transitional Services; YTDP = Youth Transition Demonstration Project.

^aInterventions that do not fall within other categories (e.g., vocational skills training intervention, Gittman, 1987).

career exploration, employment skills training) and job placement and supports (e.g., direct job placement, job coaching). In addition, they (a) provided families with resources and training and (b) received training from researchers or others around connecting transition-age youth to jobs. Finally, agencies supported employers through trainings and visits to the workplace.

Family members—primarily parents or guardians—participated in the intervention in 76.2% of studies. Yet, in many studies, families solely received supports from researchers, school staff, or agency providers, such as regular contact regarding documentation of youth outcomes; training and resources on navigating the service system; counseling on monetary government benefits; family therapy; and referrals to health, housing, food, or bilingual supports. Only five studies (11.9%) described ways in which families more directly implemented intervention components with their youth, such as identifying potential positions or employers with work opportunities, supporting youth in applying to jobs, and providing transportation to work.

Employers participated in the intervention in 61.9% of studies. Their participation primarily consisted of receiving support, such as training from agency providers and researchers (e.g., disability sensitivity training, support for working with job coaches) or contacting researchers for assistance when problems arose for youth at work. Only a handful of studies—almost all of which used the Project SEARCH intervention model—described employers as supporting job development, providing employment skills training on the job, acting as natural supports in the workplace, or providing on-the-job accommodations and modifications. Finally, some intervention components were implemented by health care professionals, mental health workers, disability benefits specialists, parent centers, university centers, or community organizations.

Contributed views on social validity. More than two thirds (69.0%) of studies reported social validity data from at least one stakeholder group, including agency providers (47.6%), family members (42.9%), employers (23.8%), and school staff (16.7%). These studies measured stakeholder views on the extent to which intervention goals were important, roles were feasible, and outcomes were beneficial.

Contributed data on outcomes. More than three quarters (78.6%) of studies reported that at least one of the four stakeholder groups contributed data for outcome measures. More than half of studies (59.5%) reported that data were contributed by families, 38.1% by agency providers, 33.3% by school staff, and only 7.1% by employers. In many studies, family members and their youth reported employment outcomes through questionnaires or phone interviews. In others, school staff directly collected information on employment outcomes, or researchers used reports

provided by agency providers (e.g., Social Security data) to confirm participant data and increase reliability of participant or family-reported outcomes.

Discussion

Identifying salient employment practices and the roles stakeholders can play in this work for transition-age youth is crucial for addressing the employment gaps for individuals with disabilities. This scoping review mapped interventions used to promote employment and the involvement of stakeholders in these interventions. We synthesize key findings in these areas, address limitations of this review, and discuss important implications for research and practice.

Employment interventions for transition-age youth are quite complex, and they reflect both stagnation and progress over time. All interventions in this review involved more than one stakeholder and more than one third spanned multiple settings. Most intervention packages lasted a year or more, and even the shortest interventions included multiple components. The most common components related to employment preparation, and these were present across the four decades of interventions. Similarly, nearly three quarters of studies also implemented components related to job placement and supports. Yet, intervention approaches have also changed somewhat over time. Older studies (i.e., 1980 to 1990) tended to include sheltered jobs. While paid work was much more prevalent in more recent studies (i.e., after 2000), unpaid work-based learning was prevalent across all decades. While on-the-job supports were provided across all decades, natural supports were provided more infrequently across decades. These patterns suggest that although interventions have begun to focus more on connecting youth to paid work in the community, they continue to rely on unpaid work experiences and depend more on formal on-the-job supports (e.g., job coaches) than natural supports (e.g., coworker supports).

This review compiles a diverse collection of approaches for supporting youth around employment. Findings affirm that several considerations—beyond merely teaching employment skills and placing youth in jobs—may be relevant to ensure youth gain and maintain work. For example, all but two studies included other supports for youth that addressed needs not specific to job skills but necessary for youth to sustain work. These supports commonly related to other skills training (e.g., self-determination, independent living) and transportation. Yet, in more recent studies (i.e., after 2010), interventions often included postsecondary education supports and assistance developed in response to the emerging needs of youth and families (i.e., benefits counseling, health supports, housing supports). These patterns may suggest that, as more jobs have begun to require postsecondary education and additional postsecondary options have been developed for individuals with

disabilities, researchers have begun to focus on supporting youth in accessing and completing these programs. In addition, researchers have increasingly recognized the importance of addressing factors common to youth and families in marginalized groups (e.g., inadequate housing, poor health, financial need, parent unemployment) for youth to successfully engage in work. The complexity of these interventions and broad inclusion of many components suggest that several areas should be considered when addressing youth employment.

Most interventions involved multiple stakeholders in various combinations (e.g., school–agency partnership, agency–employer collaboration, school–family communication). Several studies included efforts for interagency collaboration and supports for specific stakeholder groups. This wide involvement of multiple partners reinforces calls for partnerships throughout the transition literature (e.g., Awsumb et al., 2020; Mazzotti et al., 2021). Yet, the extent to which agency providers, school staff, families, and employers were involved varied. Agency providers and school staff were the most involved, (a) directly implementing many practices related to employment preparation and job placement with youth and (b) providing supports to youth and families. Agencies provided supports to employers around hiring and supporting youth with disabilities, but schools generally did not play this same role.

Moreover, the participation of families and employers in employment interventions for youth should be extended. In the reviewed studies, families primarily provided information about their youth to other stakeholders or received supports, consistent with literature characterizing family involvement during transition planning as fairly passive (Landmark et al., 2013). Yet, in a handful of studies (e.g., Carter et al., 2009; Duersch, 2013), families were more active in connecting youth to work. Empowering families to undertake more active roles can help ensure that youth remain successful in employment even after they no longer receive school services (Hirano et al., 2016). Similarly, while employers were involved in most interventions, they primarily received training, resources, or supports from researchers or agencies around working with youth with disabilities. Their roles could be extended further (e.g., developing youth jobs, teaching skills on the job, acting as natural supports, providing on-the-job accommodations), as was done in some studies (e.g., Hillier et al., 2007; Wehman et al., 2017). Future interventions should capitalize on the active participation of families and employers in roles like these.

Limitations

A few limitations should be considered when interpreting findings from this review. First, we relied solely on information included in published reports. It may be that additional

information about the intervention and its implementers was omitted from these reports due to article page limits or editorial decisions. Moreover, we were unable to contact report authors given the 40-year span during which these studies were published. Second, the complexity of these multicomponent interventions was not always accompanied by extensive descriptions of those components within published reports. When categorizing the intervention components into the 25 distinct areas, we had to rely on component descriptions that were often quite brief. Although we were reliable in our coding, there may be important nuances in actual intervention delivery that are masked. Third, the roles of various stakeholders were usually described broadly in these studies and often as if their involvement was uniform across youth. It is likely that the nature of each stakeholder's involvement varied somewhat or even substantially for each of the youth with disabilities who received the intervention. While we were able to summarize what these stakeholders tended to do, we cannot characterize how much or how well they did it.

Implications for Future Research

The findings of this review suggest three major areas for future research regarding employment interventions for transition-age youth with disabilities. First, the roles of families should be further extended in future interventions. While more than three quarters of reviewed interventions involved families, such involvement was quite passive for most studies. In contrast, other studies demonstrated ways in which families could assume more active roles in connecting their youth to employment. Future studies should capitalize on families' knowledge of the community; their professional connections; and their personal relationships to identify potential jobs, communicate with employers, foster youth self-determination, and locate transportation options. Moreover, although most studies in this review reported the involvement of parents or guardians, future interventions could include siblings or other relatives with connections to job opportunities, transportation options, or other supports in the community.

Second, future studies should engage employers more actively. Most studies involved employers in passive ways, such as receiving training and contacting other stakeholders when problems with youth arose. Yet, a handful of studies, such as those adopting the Project SEARCH model, involved employers more directly in implementing intervention components. These roles included developing jobs for youth, training youth on the job, acting as natural supports in the workplace, and providing accommodations. None of these studies described explicit ways in which schools collaborated with employers. Previous literature has highlighted limited collaboration between schools and businesses (e.g., Kim & Dymond, 2010; Li et al., 2009).

Hence, future interventions should specifically address school-business collaboration to promote youth employment by connecting schools to employers, identifying job opportunities, and providing ongoing support to employers who have hired youth. Finally, employers could potentially inform interventions by determining the necessary work skills to assess, identifying the most salient employment skills to teach, and contributing to the development of jobs.

Third, future research should examine employment interventions used with youth with specific disability types and racial/ethnic backgrounds. More than half of studies included youth from multiple disability categories, making it difficult to discern which components were used with which students. Yet, some studies were specific to disability diagnoses (e.g., autism; Wehman et al., 2017) or challenges (e.g., emotional or behavioral difficulties; Carter et al., 2011). Moreover, more than one quarter of studies did not report any information on youth race/ethnicity. Future studies should highlight how the employment interventions used or stakeholders who contribute may vary by disability, racial/ethnic background, or needs of youth.

Implications for Practice

This review demonstrated a wide spectrum of practices that educators, agency providers, and others may use to plan for and support youth around employment. Studies incorporated practices related to employment preparation and job placement, as well as supports for schools and agencies. Nonetheless, interventions also included a variety of components that (a) addressed families' immediate needs and economic well-being and (b) were essential for youth to sustain employment. There is much to be considered when designing programs that facilitate employment for youth with disabilities (Mazzotti et al., 2021; Rowe et al., 2021), and this information is important for educators and providers who emphasize that they need guidance on how to prepare youth for employment (e.g., Awsumb et al., 2020; Carter et al., 2021).

Finally, the consistent involvement of multiple stakeholders within and across studies speaks to the importance of interagency partnerships for youth employment. Several studies in this review included ways in which interdisciplinary teams engaged in efforts to collaborate effectively, coordinate services, and share resources. Schools and agencies may consider ways to involve families and employers in providing direct support to youth with disabilities, such as (a) identifying job prospects, (b) providing or supporting access to transportation, (c) teaching work skills, and (d) providing supports on the job. The increased involvement of these stakeholders may lessen the burden of overwhelmed practitioners and facilitate a more seamless transition for youth from comprehensive school services to natural supports in postsecondary workplaces.

Conclusion

Interventions that have addressed the employment outcomes of transition-age youth with disabilities consist of a wide spectrum of supports. Components have addressed employment preparation, job placement, and other supports for youth. They have also addressed the needs of stakeholders supporting youth, such as families, schools, agencies, and employers. These stakeholders assumed several roles for informing interventions, implementing components, and contributing to data collection in these studies. In summary, supporting youth with disabilities throughout the employment process has involved a constellation of practices and partners.

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Supplemental Material

Supplemental material is available on the *Career Development and Transition for Exceptional Individuals* webpage with the online version of the article.

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