Strategies to Engage Youths with Intellectual and Developmental Disabilities in Careers in Technology

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Introduction

Transitioning from secondary education into adulthood is one of the most significant milestones for transition-age youth with intellectual and developmental disabilities (IDD; Wehman, Chan, Ditchman, & Kang, 2014). Youth with IDD are at significantly higher risk for poor post-school employment outcomes than their peers (Edgin et al., 2014; Newman et al., 2011; Shattuck et al., 2012). Findings from the National Longitudinal Transition Study-2 (NLTS2) indicate that only 37.2% of young adults with autism spectrum disorder (ASD) report working at the time of the study interview, among the minority of all adult-aged autistic people (NLTS2, 2011). Moreover, youth with IDD from racial and ethnic minority backgrounds who face multiple intersecting identities (e.g., race/ethnicity, gender, disability, and poverty) are at risk for experiencing even greater stigma and employment difficulties (Furth, Laughs & Eibach, 2008; Rosenthal et al., 2006; Vera et al., 2017). Understanding effective strategies that foster motivation and transition/VR engagement is essential for promoting successful transition outcomes for this population.

There is a robust demand for science, technology, engineering, mathematics, and medicine (STEMM) workers (Cardoso et al., 2013; U.S. Congress Joint Economic Committee, 2012; van den Hurket et al., 2019). According to the U.S. Congress Joint Economic Committee (2012), the technology and science premium is about 26% higher than other types of workers after controlling for factors that affect wages, such as age, gender, race, location, industry, and union status. Assisting students from racial and ethnic minority backgrounds to develop career interests in science and technology and pursue postsecondary education in technology fields will increase their opportunities for equity and equal employment.

The Technology Early Career Preparation Intervention (TECH-Prep) is focused on increasing the participation of youths of color with IDD in careers in technology. The goals of the TECH-Prep program are to increase students’ career awareness, interests, self-efficacy, outcomes expectancy, goal persistence, and post-school outcomes. The present study assesses the initial impact of the Careers in Technology Program (TECH-Prep) via a qualitative method on a small sample of participants (n=4) who have completed the program and their parents (n=7) who participated in the initial interview process. The focus of these interviews was to determine the impact of their involvement on career engagement, outcome expectations, and career directions, thereby providing additional data relative to the quantitative methods.

Methods

Four individuals who completed the TECH-Prep program were asked to participate in semi-structured interviews. A family member (i.e., a parent) was asked to accompany the youth to provide additional insight. The interview questions were developed following the guidelines set forth by McCracken (1988) and Morgan (1998). Each interview lasted approximately one hour. Interviews were digitally recorded, and the audio recordings were transcribed for analytical use by the researchers. Consistent with reflexive thematic analytical methods, members of the research team reviewed extant data on the youth and their families, SCCT survey components, current employment, current education) prior to conducting the interviews to enhance understanding of the youth and their families’ experiences in the TECH-Prep program. Two researchers analyzed the qualitative data from each interview and organized the responses into main themes and subcategories. A third researcher reviewed the findings of the two researchers and contributed to the composite themes and subcategories of the data.

Results

Several themes emerged regarding the program’s impact on youths’ employment engagement, career direction, and transition outcome expectations.

Role of Local Education Agencies (LEAs)

Public schools play a significant role in the youths’ transition process. Schools are the gateway for the students to access a variety of services out in the community, such as TECH prep. Most students identified school staff (e.g., special education teacher, school principal) as the bridge to opportunities and services both in and outside of school. The youths either graduated from or will graduate from the school district’s transition programs between ages 18 and 22. Parents report relying heavily on these transition programs for recommendations regarding the family’s post-secondary options.

Benefits of early exposure to work-readiness training

The youths and parents reported the benefits of receiving the TECH prep intervention early. They perceived the benefit as compounding as youths receive similar work readiness training (i.e., soft skills training) and lessons across other transition programs.

Rural: The Technology Early Career Preparation Intervention (TECH-Prep) and Implications

Participants stated that the components of TECH prep intervention that worked well were those that capitalized on youths’ unique strengths. Most youths identify as visual learners. Participants report their preference for visual learning as associated with having autism and/or ADHD. The TECH prep curriculum intentionally included multiple videos and visual graphics to accompany lessons and activities. Participants report the benefits of visually getting exposure to real-life employment situations.

Interviewees also reported that the youths have exceptional memory and recall ability. Parents reported that their youths could recall interactive activities such as role plays and practice interviews, sometimes months, even years, down the road and utilize the learned skills. Youths also shared feeling less anxious and more secure talking with potential employers due to having practiced mock interviews and role-play activities.

Impression Management

Researchers identified impression management as a benefit of TECH prep intervention. Students learn about impression management and strategies for better impression management at work. Interviewees reported the program’s impact on youths’ abilities to make good initial impressions with employers. Participants performed better at initial interviews after practicing introducing themselves, asking questions and not overcompensating with other communication skills. How youths with disabilities present themselves at the initial interview is critical to securing the job and setting the tone for the relationship and expectations.

Work-based learning experiences

The TECH prep program participants complete a summer internship at a software technology company as a capstone. Students work in teams on weekly projects and present their products to the staff for feedback. This allows youths to practice developing interpersonal and teamwork skills in an authentic work setting during the internship. The parents also reported seeing youths grow confident as they contributed to team projects and built a peer community. The participants reported that this confidence contributed to the youths’ willingness to explore different career pathways in the future.

Implications

Across the interviews, youths reported being more open to exploring new opportunities following TECH PREP. Participants currently enrolled in high school are open to exploring post-secondary education and employment opportunities. Students shared their desire to learn a new language, explore college programs, choose a major in STEMM, and explore different career pathways.

Results (Cont’d)

Employment outcomes

Two youths enrolled in high school are not currently working. Both are involved in clubs and other extracurricular activities. The other two participants are currently employed in competitive integrated employment, part-time. One participant maintains a Janitorial job. The other participant works at a college library and is also a part-time college student studying accounting. The two working students are currently earning minimum wage.

Results from the study indicate that the program had a meaningful impact on the career engagement and outlook of the youth in the program. Although not all participants were intending to pursue a technology career, all reported an increase in confidence in their ability to work, communicate their disability and accommodation needs, and self-advocate for their needs with an employer. The participants identified the group activities as contributing to their increased comfort in exploring employment in technology fields and interacting with co-workers and supervisors. The capstone component of the program, a paid internship, provided them with valuable work experience that helped them determine whether to pursue a career in technology or explore other career options.

Research implications

The use of pre-ETS services to promote the engagement of youth with disabilities in vocational rehabilitation and subsequent employment presents opportunities for further scholarship. Development and investigation of these services are crucial to identify and replicate evidence-based practices that maximize the benefits of these services for youth with disabilities. Further research on TECH-Prep, as well as other efforts to provide support to youth in the transition to adult life, is needed to continue developing services that are effective in engaging youth and their families.

Policy implications

Improving transition and employment outcomes for young adults with IDD has been the focus of several education and legislative mandates (IDEA, 1990; WIOA, 2014). These mandates place a strong emphasis on postsecondary education and competitive employment for transition-age youth with disabilities and require state VR agencies and local education agencies (LEAs) to collaborate to address their needs. The results from this study add evidence to research finding that school-based transition services have a significant impact on post-school outcomes (Shogren et al., 2017). The findings from this study also indicate opportunities and persistence, the program graduates are experiencing challenges in independently obtaining meaningful careers in STEMM.

Practice implications

There is empirical support from the literature that early work experiences during high school represent one of the most significant predictors of post-school success and adult IDD (Carter et al., 2011, 2012; Carter et al., 2018). For students with career interests in science and technology, constructs of the Social-Cognitive Career Theory (SCCT) are strong predictors of career technology interest, goal persistence, and employment of minority youth with disabilities (Cardoso et al., 2013). The results support the importance of paid work experience, early exposure to work readiness skills training, and peer support and community building in completing VR services and developing interests in career pathways for this population.