Project Career: An individualized postsecondary approach to promoting independence, functioning, and employment success among students with traumatic brain injuries

Deborah Minton[a,*], Eileen Elias[b], Phillip Rumrill[a], Deborah J. Hendricks[c], Karen Jacobs[d],
Anne Leopold[b], Amanda Nardone[d], Elaine Sampson[c], Marcia Scherer[e], Aundrea Gee Cormier[a],
Aiyana Taylor[b] and Caitlin DeLatte[b]
[a]*Kent State University, Kent, OH, USA*
[b]*JBS International, Inc., North Bethesda, MD, USA*
[c]*West Virginia University, Morgantown, WV, USA*
[d]*Boston University, Boston, MA, USA*
[d]*University of Rochester, Rochester, NY, USA*

Abstract.

BACKGROUND: Project Career is a five-year interdisciplinary demonstration project funded by NIDILRR. It provides technology-driven supports, merging Cognitive Support Technology (CST) evidence-based practices and rehabilitation counseling, to improve postsecondary and employment outcomes for veteran and civilian undergraduate students with traumatic brain injury (TBI).

GOAL: Provide a technology-driven individualized support program to improve career and employment outcomes for students with TBI.

OBJECTIVES: Project staff provide assessments of students' needs relative to assistive technology, academic achievement, and career preparation; provide CST training to 150 students; match students with mentors; provide vocational case management; deliver job development and placement assistance; and maintain an electronic portal regarding accommodation and career resources.

METHODS: Participating students receive cognitive support technology training, academic enrichment, and career preparatory assistance from trained professionals at three implementation sites. Staff address cognitive challenges using the 'Matching Person with Technology' assessment to accommodate CST use (iPad and selected applications (apps)). JBS International (JBS) provides the project's evaluation.

RESULTS: To date, 117 students participate with 63% report improved life quality and 75% report improved academic performance.

CONCLUSION: Project Career provides a national model based on best practices for enabling postsecondary students with TBI to attain academic, employment, and career goals.

Keywords: Traumatic brain injury, postsecondary, cognitive support technology, vocational rehabilitation counseling, mentor

*Address for correspondence: Deborah Minton, Kent State University, Kent, OH, USA. E-mail: dminton@kent.edu.

1. Introduction

An estimated 1.7 million people in the United States currently live with traumatic brain injuries (TBIs) caused by a variety of events, including car crashes, falls, military combat, sports, and recreational activities [1, 2]. The World Health Organization describes TBI as a global health crisis that is "involved in nearly half of all traumatic deaths" [3]. It also states that individuals with TBI may need continuing assistance when adapting to life changes, including the impact of the personal injury (both physically and cognitively), potential loss of social supports, and lack of understanding in school and the workplace [4–7]. On the basis of hospital reports from 2001 to 2014, the Centers for Disease Control and Prevention (CDC) determined that individuals between ages 15 and 24 and those ages 65 and older are most likely to experience a TBI [8]. The CDC also reported in 2015 that the incidence of TBI among people between ages 16 and 25 have increased by almost 60 percent since 2001; these are mostly recreational-related injuries [8]. In addition, a record number of military service members have experienced a TBI during the past two decades. The Defense and Veterans Brain Injury Center reported in 2016 that more than 339,000 members of the armed services sustained TBIs between 2000 and the third quarter of 2015, with many occurring in military combat [9].

Regardless of how mild or severe the injury, TBI may have a permanent impact on the individual's functioning. In addition to cognitive challenges, an individual's interlinked biopsychosocial functions, the interactions between an individual's biological, psychological, and social factors, may also be impaired by a TBI [10]. A 2008 study found that college students with TBI reported fatigue, headaches, and blurry vision, among other symptoms at a higher rate than other students reported [11, 12]. Students with TBI also reported changes in their emotional responses, including rapid or extreme mood changes, anger, anxiety, and depression; these strong emotions may become barriers to their continued education [4, 6, 13–15]. Functional challenges like those listed above affect not just individuals with TBIs, but also their loved ones [10]. Another complicating factor is that brain injuries are unique to the individual. While impairments vary by person, but most individuals who have sustained a TBI experience one or more of the following: impaired memory, inability to prioritize thoughts, difficulty concentrating; lack of awareness of impairments and needs; problems making decisions and planning; organizing; and memory impairments [11]. These key skills are vital to succeeding in the classroom and in the workplace [6, 16].

The increased frequency of brain trauma occurring in contemporary postsecondary student and veteran populations has life-altering impacts. Students with TBI attending higher education institutions face many challenges that other students without TBI may not during the transition from high school or the military into academia and from academia to employment. The complications young adults (ages 16–25) with TBI face include dealing with the impact of the injury at a time when they are learning new skills, completing academic requirements, and making career plans [16, 17]. Veterans with TBI face similar experiences as they return to civilian life and update their skills by continuing their education [18]. Individuals with TBI who successfully transition to postsecondary education continue to deal with their injury and face more cognitive, emotional, psychological, and social challenges than their uninjured counterparts; the culmination of these disparities include lower grades and higher dropout rates [6, 15].

Recognizing that education is a major pathway to employment and higher salaries, it is essential that individuals who have incurred a TBI receive accommodations to remove barriers. Accommodations enable these individuals to effectively manage and complete academic requirements or job tasks as well as become active and productive members of their community. Unfortunately, biased public perceptions and negative attitudes may affect accommodation requests. Students with TBIs attending postsecondary institutions, whether technical schools, 2-year community colleges, or 4-year universities, must confront perceived stigma from others by providing them with information about the injury and its impact to receive needed accommodations [19, 20]. TBI tends to be an invisible disability. Others may attribute displays of behaviors such as disinhibition, excessive self-disclosure, or aggression to the individual's personality instead of a brain injury, failing to acknowledge the emotional challenges of the TBI [12, 13]. Almost 80 percent of students with TBI report having difficulties in academia, less than half take advantage of accessibility services and only about 20 percent were aware of other community supports [11].

As early as 1962, researchers documented the negative impact of TBI on processing information and returning to school or work noting these individuals

had difficulty with organization and memory, but did little more than report the phenomena [11, 14]. Continuing into the 2000s, little had changed, and employment outcomes for individuals with disabilities, especially those with TBIs, remained bleak [18, 21]. By 2012, few if any evidence-based practices supported the cognitive and service needs of individuals with TBIs in order for achieving academic and/or employment success. There was a lack of research on best practices to help individuals with TBI obtain skills and supports to adapt to changes in academic, employment, and life situations for all levels of brain injury severity. Employment barriers during the job interview process and in the workplace include challenges with organizing, short-term memory problems, and inability to respond to and interact with coworkers and supervisors [11, 21]. Project Career is designed to respond to these challenges based on findings that 75 percent of individuals returning to work after experiencing a TBI lose their job within 90 days due to inadequate or limited supports [2]; and that many individuals with TBIs drop out of postsecondary education programs. Project Career, an interdisciplinary demonstration initiative, focuses its objectives on improving the academic and employment successes of undergraduate veterans and civilians with a TBI attending colleges and universities.

2. Overview of Project Career

Focusing on the needs of undergraduate students with TBIs, Project Career was funded as a 5-year development grant in 2013 through the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) with the objective of demonstrating effective practices to address academic and employment success. Project Career aims to improve the academic and long-term employment outcomes that presently affect postsecondary students with TBI. Now in its fourth year, it is operating at three program sites: Boston University in Massachusetts, Kent State University in Ohio, and West Virginia University. Each site is supported by Technology and Employment Coordinators (TECs) who are responsible for both recruiting and supporting 10 students each year for a total of 150 participants across the three sites during this 5-year project. To participate, a student must have had a TBI, be experiencing cognitive challenges that are due to the TBI, and be an undergraduate student enrolled in 2-year or 4-year academic institutions.

Civilian and veteran students have consistently identified two prominent barriers at the time of applying to Project Career for support:

- Limited access to individualized supports to accommodate cognitive and academic limitations; and
- Lack of career-related services to prepare for and maintain employment.

Project Career brings together the best practices of rehabilitation counseling – technology in the form of an iPad and apps and the use of the Matching Person with Technology (MPT) evidence-based tool, which ensures the best fit between students and technology – to enhance opportunities [22–24]. Dr. Marcia Scherer created the MPT, which is an assessment used to identify appropriate assistive technologies to meet the needs of an individual with a disability, including TBI. In support of the individual's use of technology, the MPT identifies the individual's technology needs and preferences, as well as ensuring that the ever-changing technology addresses the student's biopsychosocial challenges. To ensure that the changing accommodation needs of an individual are met, the technology is monitored through continual assessments and adapted as needed. Reassessment also occurs when an app is added, removed, or no longer needed [17].

Continued MPT assessment at 6 and 12 months provides TECs with information to identify the most appropriate technology when multiple options exist. Reassessments ascertain the most appropriate technology when multiple options exist. MPT reassessments identify changes in functional needs that may require adaptation of the technology. When a student achieves his or her first successful outcome, the technology used is identified. Although the initiative does not collect participants' medical information, nearly 55 percent of Project Career participants self-reported at project intake that their TBIs were severe at the time of injury. Through counseling sessions, TECs recognize, when students' challenges in and out of the classroom are not being addressed. They use rehabilitation counseling techniques (e.g., information and referral; assessments; counseling and guidance; vocational training or other postsecondary education; supports for job search and placement assistance; coaching; supported employment; tips on developing employer relationships and addressing job-related challenges) in conjunction with the CST to promote academic and employment successes.

Assistive technology (AT) is defined as any item, piece of equipment, or product system – whether acquired commercially or off the shelf, modified or customized – that is used to increase, maintain, or improve functional capabilities. CST is a class of AT to help with cognitive functioning. This technology improves functioning affected by the TBI by assisting with cognitive challenges including memory, attention, concentration, and planning [25]. When the CST does not meet the student's functional needs, the student typically stops using the CST. One student reported that the TEC followed up to make sure they were able to use the technology.

> *Help from the coordinator wasn't needed as I already knew how to use FaceTime and Skype. FaceTime works better. Was already familiar with iPad since I had an Apple phone and the use of an iPad as well.*

In addition to the TEC, students are provided with the option to work with a mentor. For Project Career, a mentor is defined as a person who has knowledge about the academic experience and/or understands the student's chosen career field. A peer, faculty member, or professional working in a student's field of interest may provide mentorship. Mentors serve as a career guide and provide support beyond that given by TECs. Participants that have a mentor report that these relationships provide opportunities that may not otherwise have been available.

> *My mentor understands me and recognizes that I need help. He doesn't see me as a problem, he sees me as a human being.*

> *I think the mentoring part of Project Career has been the most beneficial thing for me. Even though I have work experience and I've been in the Marines, I really did not know much about the field of computer science or anyone currently working in the field. My mentor talked with me on the phone for over 2 hours the first time and as a result, I completely changed the classes I'm taking this summer to better fit what I actually want to do for a career. If it wasn't for him, I would have wasted a lot of time on programming classes that wouldn't have ultimately helped me that much. I really encourage some of the younger students who may be more hesitant to work with an experienced mentor. My mentor has so much experience and has had a lot of different jobs, so I feel like I'm learning a lot from him and now have a better sense of what I want to do.*

Mentorship takes different forms depending on the venue and type of mentor. Some students are paired with their mentors by the TECs based on mutual interests, whereas others independently select their mentor. This relationship is an important connection, providing support, encouragement, professional networking, and assistance with identifying opportunities inside and outside the classroom [26].

> *My mentor got me a job in an environmental company where he works.*

> *One mentor connected a Project Career participant studying engineering with a contact at NASA. The student has gone on to secure two separate internships with the organization and now is applying for a full-time position.*

The use of technology in combination with on-on-one assistance from the Project's TECs and academic/career mentors is showing positive results. Students are completing academic pursuits, applying for and obtaining part-time and summer employment, obtaining experiential learning opportunities such as internships in their field of study, enhancing career readiness, and attaining their career goals. In their progress assessments, students shared the importance of working with their TECs. The TECs' provide comprehensive individualized services including information and referral; assessments; counseling and guidance; vocational training; support for technology selection and use; job searches, placement, and coaching; assistance with developing employer and co-worker relationships; and help with addressing job-related challenges. TECs follow up with participants – often through technology-based communications – to find out their general well-being and whether they are using their stress management techniques, keeping on track, exploring new opportunities, solving daily problems, addressing financial aid issues, and responding to general life stressors.

TECs also assist with identifying and achieving career goals. They help students create and update their resumes, identify potential references, and develop cover letters to obtain full- or part-time jobs or apply for internships.

> *Through trial and error, a student learned that audio apps help her as she is an audio learner."*

> *"The coordinator and I communicate well on what apps I use with frequency. I believe this allows her to better understand what helps me the most.*

TECs connect students with campus accessibility services, commonly referred to as student accessibility services (SAS). It is critical for students with TBI to work regularly with the campus SAS office, yet researchers have found that fewer than half of these students reported using this service. The project's evaluation has found that veteran students with TBIs were less likely than their civilian counterparts to request classroom accommodations [15]. To receive an accommodation, college students must provide documentation to the SAS office regarding their disability. SAS staff assists with obtaining needed accommodations and notifying students' professors. Currently, 82 percent of Project Career's civilian students and 66 percent of its veteran students have registered with their campus SAS programs [6, 15, 16, 27].

TECs also provide information about state vocational rehabilitation agency opportunities and other employment support resources. Although it has been reported that as few as 20 percent of students reported being aware of community, institutional, state, and federal support programs that could assist them, 35 percent of civilian students and nearly 40 percent of veteran students have taken advantage of these programs [1, 4–6].

> *I have looked up the career services number multiple times on my iPad, which I wouldn't have without my coordinator. I have applied for jobs, made my resume, cover letter, etc. All on my iPad and have been received tremendous amounts of help that I would have not otherwise gotten without having ready access to the information at hand. The process of having to go to a computer for me is just such a difficult thing; having this iPad from my coordinator has helped me majorly.*

The multisite Project Career program not only assists participating students, but also identifies best practices when working with other undergraduate students with TBI. Quantitative and qualitative evaluations provided by JBS International show that the program's unique integrated components have provided positive results.[1]

---

[1] Based in the Washington, DC, metro area, JBS International provides international, national, and state-based health policy, evaluation, research, and technical assistance support.

3. Methods

3.1. Participants

Project Career students are enrolled at the participating sites as well as other 2- and 4-year academic colleges and universities within their geographic region. The goal of the grant is to provide 150 participants with individualized technology and vocational assistance over its 5-year period (10 students recruited per year of the grant at each site). As of March 2017, 117 students have enrolled in Project Career, attending 27 different academic institutions. While twelve dropped out of the program and school, the remaining 105 students continue to succeed in achieving their goals. Students enrolled in the project must have a documented TBI and be enrolled in a 2- or 4-year college or university academic program. Participants range in age from 18 to 52 years old. The majority ($n = 68$; 58%) identifying as male and 42% as female ($n = 49$). Thirty-three (28.4%) of Project Career students are veterans [5].

At the time of enrollment in Project Career, slightly more than half (54.1 percent) of students reported that their disability made it difficult to perform academic and job tasks. Students described challenges including distractibility, fatigue, difficulty organizing and managing time, issues with memory, lack of attention to detail, lack of tact, self-consciousness, and feeling overwhelmed [5]. The TECs at each site provide technology training, on-on-one vocational rehabilitation assistance and assist these students with identifying resources on and off campus.

3.2. Data collection

Project Career follows a formal protocol, which is overseen by the TECs. This protocol begins with an intake assessment, where the TECs gather basic demographic and medical documentation to determine if the individual qualifies for program services. If the student is eligible, a baseline assessment is performed, which compiles employment-related attitudinal and behavioral measures that assess the student's employability, maturity, career decidedness, career self-efficacy, acceptance and perception of disability, and employment history.

Each person is given a MPT assessment, which measures attitudes and feelings toward technology, current supports and self-ratings of abilities in areas of reading skills, comprehension, hearing, seeing, schedule and time management, etc. [23, 24]. Other

vocational assessments may be completed, based on the student's academic goals and needs.

When the initial assessment is completed, the student may receive any/all of the following support services:

- CST in the form of an iPad and apps targeted to the individual's needs and capabilities;
- Hands-on training in the use of the CST;
- Mentoring program (either electronic or in-person) based on a peer support model;
- Individualized case management services;
- Assistance in securing a field-based internship and employment after graduation;
- Resource directed job placement and accommodation support focused on technology transfer, self-advocacy, and professional networking.

Every 6 months, students are reevaluated using the baseline and the MPT assessments. The Assistive Technology Frequency assessment is also used to collect information on the number of hours the CST is used and the usefulness and helpfulness of the apps. Students are eligible for 12-months post-graduation and are to complete a post-graduation survey, which assesses income, hours worked, and employment satisfaction. This survey is 12-months prior to the student's graduation from the project.

The TECs at each site record case notes after each student meeting (in-person or virtual), phone conversations, and email exchanges. Case notes include information about topics discussed, challenges experienced, needed services and supports, provided services and support, outcome, and general observations.

4. Evaluation findings

Since the beginning of Project Career, TECs have recruited participants through SAS offices and provided these offices with information about local professionals and agencies that work with individuals with TBI. As Project Career has grown, the program has received referrals from college administrators, professors, parents, counselors, case managers, and students.

Of the 105 students 27 students have graduated from their degree programs. Of these graduates, 17 are employed in full-time positions, 4 are employed part-time and 6 have continued their education. Sixteen of the graduates continue to receive TEC support and mentoring services [5]. The positive impact of Project Career is evident in all facets of the program including personal/social characteristics, technology use, mentorship, and careers.

4.1. Personal/social characteristics

As students become familiar with using individualized technology accommodations, their MPT assessment scores decrease over time, indicating that these students are becoming increasingly positive and independent and are participating more in their communities. After 6 months in the program, they indicate improved satisfaction in personal care and household activities, overall health, freedom to move in the community, participation in desired activities, emotional attainment, employment status/potential, family and intimate relationships, autonomy and self-determination, fitting in and belonging, feeling connected, and emotional well-being. Students report that their CST devices and support apps help them achieve their goals (34.9 percent) and improve their quality of life (32.1 percent) [5].

4.2. Perspectives on technology use

Technology offers many advantages. For example, some students report that using iPads and apps makes them appear like everyone else, even "cool," which results in students feeling less stigmatized by their TBI. Because the iPad and apps are less expensive than specialized technologies, they are a cost-effective assistive device. At enrollment, most students had used technology (e.g., computers, smartphones, tablets) and did not have difficulty using the iPad or apps provided. Project Career has identified a significant difference in the overall experiences with current technology use between students' scores at baseline and those at 6 months follow up ($p = 0.029$, $\eta^2 = 0.008$), indicating that, over time, students with TBIs develop more positive experiences with technology use. Scores also showed a statistically significant difference in perspective on technologies between baseline and 12 months follow up ($p = 0.001$, $\eta^2 = 0.363$), indicating that, over time, participants have more positive perspectives on technologies. Students indicated that they used Project Career-purchased apps about 2.01 hours per day. These students also reported that 63.7 percent of the time they used a specific app always, nearly always, or about half of the time when they were outside their home. Overall, students also reported that the apps moderately or a lot improved their

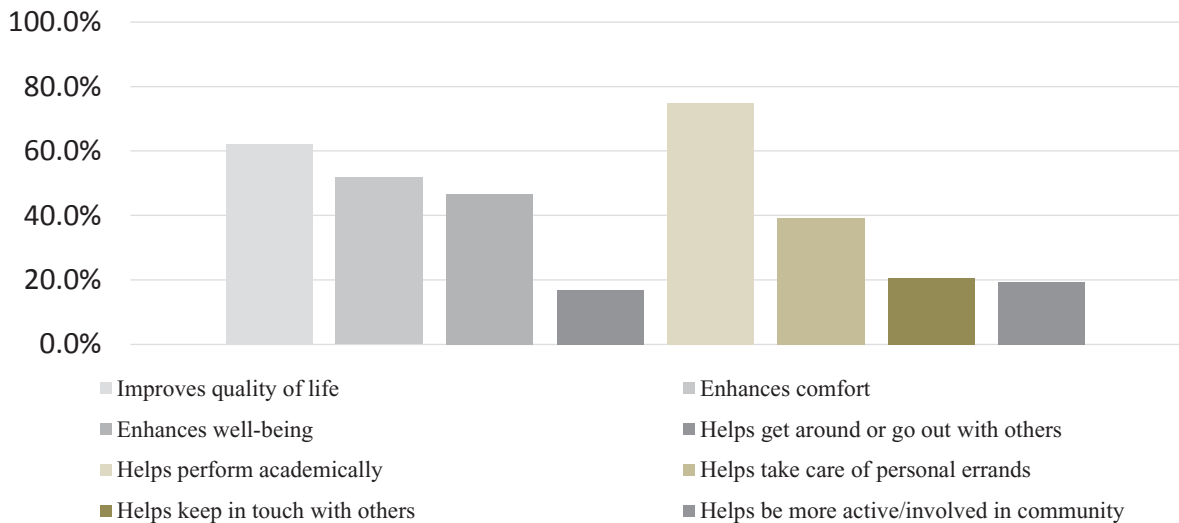## Participating students who report that an app had a moderate or significant impact

Fig. 1. Participants reported that an app had "a moderate" or "significant" impact on aspects of their life.

quality of time (62.2%) and academic performance (74.9%) [5] (Fig. 1).

4.3. Mentorship

It is well documented that individuals with disabilities, including those with a brain injury, are underrepresented in the work world [1, 18, 28]. One approach to increasing opportunities and positive outcomes is mentorship [26, 29]. Mentoring increases educational and employment prospects [19]. Most Project Career participants have a mentor. When entering the program, 88.8 percent reported that they wanted a mentor; as of March 2017, of the 105 participating students, 34 have mentors currently.

4.4. Career

Although Project Career students report multiple barriers, the majority fall into two categories: (1) limited access to individualized supports to overcome cognitive limitations and (2) a lack of career-related services to prepare for and maintain employment. On average, MPT assessment scores for encountering career barriers tend to increase over time and scores for barriers hindering career progress tend to decrease over time [5].

The individualized assistance provided by TECs and others, such as mentors and public and private support services, contributes to breaking down career barriers. For example, a student can seek an internship 45 miles from her home because she receives transportation assistance from a state vocational rehabilitation (VR) agency. On average, students' scores increase over time, suggesting improvements in students' career decision-making self-efficacy.

After noticing a student's pattern of applying for, obtaining, and then resigning from multiple positions in the food industry that were not a part of his field of study, the TEC asked about his employment choices. Although the student reported that he received job leads within his field of study (business and finance), he was applying only for positions related to his previous experience in the food industry. The TEC followed up and discovered that the student was applying for positions where he could fill out job applications in person. After clarifying his career interests, he began to apply for positions with business and finance, most of which required online applications, with assistance. Within 2 months and 1 week before graduation, the participant was hired by a regional bank.

5. New directions

Recognizing the positive impact of the program, developers of Project Career expanded the program in

2016 through the launch of the four-category **S**tudent, **T**echnology, **A**ccommodations, and **R**esources (STAR) portal (projectcareertbi.org/index.html). The STAR portal is available to the public and does not require affiliation or participation in Project Career. Accessed through smartphones, tablets, or computers, the portal offers up-to-date findings and tools, information, and other materials for current participants and others with TBI, their family members, active duty service members, veterans, health rehabilitation providers, employers, advocates, and other stakeholders. The goal is to provide assistance and resources to increasingly more individuals, especially students with TBI in postsecondary programs.

6. Conclusion

This demonstration project has achieved positive outcomes. Although academic and vocational challenges are an inherent part of having a TBI, the educational and vocational outlook for those with this disability is no longer bleak. Now in its fourth year, Project Career demonstrates the connection between postsecondary education and improved employment goals and opportunities. Project Career has combined the use of state-of-the-art technology in the form of iPads, the customized selection of apps to meet specific student challenges, and individualized assistance from TECs, demonstrating positive results using vocational rehabilitation best practices. Students can also work with mentors to connect with others in their field of interest. TECs work with students to establish their goals; identify educational and vocational opportunities, including internships and summer and part-time employment to gain experience and build their resumes; and realize their career dreams, including full-time employment.

As a demonstration project, Project Career is not a research initiative and therefore does not have a control or comparison group within the project's design. It does not have control over the use of the iPad or apps. There is not a limit or specified amount of time that students must use a CST, though students are asked to self-report on app usage [14]. Project challenges that a future research based initiative could address include increasing the current project's relatively low proportion of participants who are members of racial and ethnic minority groups, and having standard implementation of interventions across the project's sites (e.g., the mentoring

component). It is important to note that findings from this non-random sample of participants demonstrate the impact of its interventions on American college students with TBI. Future research will identify how its interventions generalize to the broader population of these students. The next step in support of having this initiative become evidence-based is securing funding for a control-group research project.

Acknowledgments

Conflict of interest

None to report.

References

[1] Rumrill P, Wehman P, Cimera R, Kaya C, Dillard C, Fong C. Vocational rehabilitation services and outcomes for transition-age youth with traumatic brain injuries. Work 2016;31(4):288-95.

[2] Toriello PJ, Bishop B, Rumrill PD. New directions in rehabilitation counseling. Lake of the Ozarks, MO: Aspen Professional Services; 2012.

[3] Basso A, Previgliano I, Servadei F. Section 3.10: Traumatic brain injury. In World Health Organization. [cited 2017 March 27] Neurological disorders: Public health challenges; 2006; [pp. 164–175]. Available from: http://www.who.int/mental_health/neurology/neurological_disorders_report_web.pdf?uu=1

[4] Bootes K, Chapparo C. Difficulties with multitasking on return to work after TBI: A critical case study. Work 2010; 36:207-16.

[5] Leopold A. Project career data report. Bethesda, MD: JBS International; 2017.

[6] National Association of State Head Injury Administrators. Traumatic brain injury facts: Vocational rehabilitation and employment services. National Association of State Head Injury Administrators; 2006. [cited 2017 March 27] Available from: http://www.nashia.org/

[7] Wehman P, Targett P, West M, Kregel J. Productive work and employment for persons with traumatic brain injury: What

have we learned after 20 years? Journal of Head Trauma Rehabilitation 2005;20(2):115-27.

[8] Centers for Disease Control and Prevention. Nonfatal traumatic brain injuries related to sports and recreation activities among persons aged ≤ 19 years—United States, 2001–2009. MMWR 2011;60(39):1337-42. [Cited 2017 March 27] Available from: https://www.cdc.gov/mmwr/pdf/wk/mm6039.pdf

[9] Defense and Veterans Brain Injury Center. DoD worldwide numbers for TBI. Defense and Veterans Brain Injury Center; 2016. [Cited 2017 April 25]. Available from: http://dvbic.dcoe.mil/dod-worldwide-numbers-tbi

[10] Toriello P, Keferl J. A renaissance of consumer autonomy: Moving from self-determination theory to therapy. In: P.J. Toriello, M.L. Bishop, & P.D. Rumrill, editors. New directions in rehabilitation counseling: Creative responses to professional, clinical, and educational challenges. Linn Creek, MO: Aspen Professional Services; 2012. pp. 1-24.

[11] Kennedy MRT, Krause MO, Turksta LS. An electronic survey about college experience after traumatic brain injury. NeuroRehabilitation 2008;23:511-20.

[12] Ruoff J. The student with a brain injury: Achieving goals for higher education [Internet]. Brainline.org; 2008 [Cited 2017 April 14]. Available from: http://www.brainline.org/content/2008/10/student-brain-injury-achieving-goals-higher-education.html

[13] TBI Model Systems. Emotional problems after traumatic brain injury [Internet]. TBI Model Systems; 2010 [Cited 2017 April 14]. Available from: http://www.msktc.org/tbi/model-system-centers

[14] Todis B, Glang A. Redefining success: Results of a qualitative study of postsecondary transition outcomes for youth with traumatic brain injury. Journal of Head Trauma Rehabilitation 2008;23(4):252-63.

[15] Todis B, Glang A, Bullis M, Ettel D, Hood D. Longitudinal investigation of the post-high school transition experiences of adolescents with traumatic brain injury. Journal of Head Trauma Rehabilitation 2011;26(2):138-49.

[16] Wehman P. Life beyond the classroom. Fifth ed. Baltimore, MD: Paul H. Brookes Publishing Co; 2013.

[17] Wehman P, Chen C, West M, Cifu G. Transition planning for youth with traumatic brain injury: Findings from the National Longitudinal Transition Survey-2. NeuroRehabilitation 2014;34(2):365-72.

[18] Rumrill P, Elias E, Hendricks, Jacobs K, Leopold A, Nardone A, McMahon B, et al. Promoting cognitive support technology use and employment success among postsecondary students with traumatic brain injuries. Journal of Vocational Rehabilitation 2016;45:53-61.

[19] Bowen JM. Classroom interventions for students with traumatic brain injuries [Internet]. Brainline.org; 2008 [Cited 2017 April 12]. Available from: http://www.brainline.org/content/2008/07/classroom-interventions-students-traumatic-brain-injuries_pageall.html

[20] Kelly J, Amerson E, Barth J. Mild traumatic brain injury: Lessons learned from clinical sports, and combat concussions. Rehabilitation Research and Practices [Internet]. 2012 [Cited 2017 April 12] Article ID 371970. Available from: https://www.hindawi.com/journals/rerp/2012/371970/

[21] Brainline.org. TBI research review: Return to work after traumatic brain injury. 2008 [Cited 2017 April 28]. Available from: http://www.brainline.org/content/2008/10/tbi-research-review-return-work-after-traumatic-brain-injury_pageall.html

[22] Scherer M, Jutai J, Fuhrer M, Demers L, DeRuyter F. A framework for modelling the selection of assistive technology devices (ATDs). Disability and Rehabilitation: Assistive Technology 2007;2(1):1-8.

[23] Scherer M. Matching Person and Technology: Purpose [Internet]. 2016 [Cited 2017 April 28]. Available from: http://www.matchingpersonandtechnology.com/purpose.html.

[24] Scherer M. Matching person and technology. Webster, NY: Institute for Matching Person & Technology; 1998.

[25] Hendricks D, Sampson E, Rumrill P, Leopold A, Elias E, Jacobs K, Stauffer C, et al. Activities and interim outcomes of a multi-site development project to promote cognitive support technology use and employment success among postsecondary students with traumatic brain injuries. NeuroRehabilitation 2015;(37):449-58.

[26] American Psychological Association. Disability mentoring program [Internet]. 2015 [Cited 2017 March 15]. Available from: http://www.apa.org/pi/disability/resources/mentoring/

[27] Griffin C, Stein M. Self-perception of disability and prospects for employment among U.S. veterans. Work 2015;50:49-58.

[28] Bureau of Labor Statistics. Persons with a disability: Labor force characteristics summary for 2015 [Internet]. 2016 [Cited 2017 April 14]. Available from: https://www.bls.gov/news.release/disabl.nr0.htm

[29] Stumbo N, Martin J, Nordstrom D, Rolfe T, Burgstahler S, Whitney J, Misquez E, et al. Evidence-based practices in mentoring students with disabilities: Four case studies. Journal of Science Education for Students with Disabilities 2010;14(1):33-54.