The Open Journal of Occupational Therapy

Volume 9
Issue 4 *Fall 2021*

Article 9

October 2021

Bridge to the Future: A Career Exploration Frame of Reference for Students with Disabilities

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Recommended Citation

Chiang, C., & Howe, T. (2021). Bridge to the Future: A Career Exploration Frame of Reference for Students with Disabilities. *The Open Journal of Occupational Therapy, 9*(4), 1-13. https://doi.org/10.15453/2168-6408.1724

Bridge to the Future: A Career Exploration Frame of Reference for Students with Disabilities

Abstract

Exploring and facilitating the transition process from school to employment for young adults with intellectual and developmental disabilities (IDD), especially those still in the school system, has now become an important concern for researchers, educators, and service providers working in this area. The Bridge to the Future (BTTF) Frame of Reference offers a new approach to facilitate the school-to-work transition for secondary school students with IDD in a self-contained classroom setting by adopting the Social Cognitive Career Theory and Self-Determination Theory as its main theoretical foundation. The BTTF Frame of Reference was developed for use by the team of transdisciplinary school professionals. It aims to facilitate students' learning in the area of career exploration, goal setting, and work-related skills, as well as to improve students' self-efficacy and self-determination skills. The purpose of the BTTF Frame of Reference is to provide guidelines to teach students with IDD vocational skills as well as other life skills, including ADLs, IADLs, and community participation, and to increase students' readiness for transition through engaging them in career exploration activities.

Comments

The authors declare that they have no competing financial, professional, or personal interest that might have influenced the performance or presentation of the work described in this manuscript.

Keywords

secondary transition, school-to-work transition, career exploration

Cover Page Footnote

This manuscript is based on work conducted by Chia-Yang Chiang in partial fulfillment of the requirements for the OTD degree at the Steinhardt School of Culture, Education, and Human Development, New York University. We confirm that this work is original and has not been published, nor is it under consideration for publication elsewhere. Elements of this manuscript were presented as a poster at the American Occupational Therapy Conference in April 2018. Please address all correspondence concerning this manuscript to Chia-Yang Chiang at cyc334@nyu.edu

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DOI: 10.15453/2168-6408.1724

The transition from secondary school to adulthood can be challenging for students with intellectual and developmental disabilities (IDD). Compared to their typically developing peers, students with IDD are less likely to be employed. While more than 95% of high school students with IDD express expectations of getting a paid job after graduation (Wagner et al., 2007), only 44% of adults with IDD 21 to 64 years of age are in the labor force (Siperstein et al., 2013). In addition, adults with IDD who are employed are most likely to be underemployed, that is, not employed full-time and/or earning less than minimum wage (Siperstein et al., 2013). Subsequently, adults with IDD may change jobs continuously throughout their adulthood (Davidson, 2014). Exploring and facilitating the transition process for young adults with IDD, especially those still in the school system, has now become an important concern for researchers, educators, and service providers who believe that early intervention would improve future employment status for this population in their adult lives.

The Individual with Disabilities Education Improvement Act of 2004 (IDEA) requires public schools to develop transition plans, and to include goals that address vocational training and employment for students with disabilities by the time they reach 16 years of age. In the school system, students, parents, teachers, related service providers (e.g., occupational therapists, physical therapists, and speech therapists), and other key shareholders (e.g., job coaches) are expected to work together as a transition team to develop plans to prepare students for future employment. Under the guidelines of IDEA, it is understood that when students express their interest in employment, members from the school transition team should work with those students to help them get ready for work and plan their pathway to employment. The transition team should develop individually tailored activities to support and meet the students' employment goals.

Traditional Approach

Traditional transition service models used for vocational training and employment in school settings have typically been developed based on the career matching theory (Eisenman, 2003). This theory assumes that matching the characteristics of individuals (e.g., their needs, interests, values, or preferences) to work environments is likely to increase their experience of career satisfaction and success. According to the Holland career matching theory (1997), the most well-known, widely researched, and used theory in this area, most individuals display one of six personality types: realistic, investigative, artistic, social, enterprising, and conventional. Holland postulated that people who choose to work in an environment similar to their personality type are more likely to be successful and satisfied. For example, individuals with the "artistic" personality type are more likely to be successful and satisfied in artistic professions.

Because the typological framework is easy to understand, the career matching theory has been adopted in many high schools. It serves as a foundation for intervention to facilitate the secondary transition and to assess students using aptitude measurement, work samples, interest inventories, and behavior checklists. In addition, the transition services and supported employment programs provided by schools also embraced the practice to assist students with disabilities and match them to potential job placements.

However, such plans developed under the matching theory framework are often found to be inappropriate for students. Often, as students explore the duties of their jobs assigned by the supported employment program, their personal profile (e.g., interests, abilities, needs) changes. As a consequence, their job profile would need to be changed to match their evolving career aspirations (Beyer & Kilsby, 1997). An assessment of an individual's interests or skills at a single point in time simply does not

provide a valid profile for students, especially those with disabilities, during the school-to-work transition period. In addition, as the form of work changes with decreased stable structures and less predictable trajectories in work environments, the assumptions built into the way jobs are classified based on Holland's theory may not be entirely accurate. Moreover, because of technological advancements, the set of skills required to perform a given job may change over time. Therefore, supported employment programs that use matching theory as their foundation often end up using "trial and error" approaches, and the efficacy of the programs may not be reliable (Nützi et al., 2017; Persch et al., 2015).

Changes in work environments and work demands are particularly challenging for students with IDD. The forces of globalization and automation are adding new disruptive pressures that are reshaping the job market and making occupational prospects for students with IDD unpredictable. In addition to these uncertainties, students with IDD face barriers, such as limited career access, limited career information, and social discrimination, making it more challenging for these students to make career-related decisions. Thus, the paradigms in place for guiding and preparing students for their transition to adulthood must be supplemented with a new approach that highlights flexibility, employability, and lifelong learning. Using the social-cognitive perspective to understand students' career preparation and development during the transition has the potential for positive outcomes. That is, when working with students with IDD, instead of emphasizing only the development of students' interests, values, and abilities to match job requirements, therapists ought to pay more attention to improving individuals' self-efficacy during the transition planning process. Assisting students to raise the level of their belief in their own effectiveness and to strengthen persistence should be the new approach to facilitate transitions from school to adulthood.

Bridge to the Future Frame of Reference

The first author developed the Bridge to the Future (BTTF) Frame of Reference, which is used for secondary school students with mild to severe intellectual and developmental disabilities in a self-contained classroom setting. The BTTF Frame of Reference illustrates a new approach to facilitate the school-to-work transition for students with IDD by adopting the Social Cognitive Career Theory (SCCT) and Self-Determination Theory as its main theoretical foundation.

The BTTF Frame of Reference aims to facilitate students' learning in the area of career exploration, goal setting, and work-related skills, as well as to improve students' self-efficacy and self-determination skills. The purpose of this frame of reference is to provide guidelines to teach students with IDD vocational skills as well as other life skills, including activities of daily living, instrumental activities of daily living, and community participation, and to increase students' readiness for transition by engaging them in career exploration activities.

Theoretical Base

The SCCT (Lent et al., 1994) offers a different perspective for explaining and predicting the way individuals form career interests, set goals, and persist in their work environment. According to the SCCT, the development of academic and career interests and the formation of educational and vocational choices are based on one's self-efficacy beliefs, outcome expectations, and personal goals, and are influenced by personal characteristics and contextual affordances (Lent et al., 1994, 2013). Departing from Holland's career matching theory, the SCCT suggests that the individual is an active agent in the process of seeking employment and that the employment itself is no longer simply an end-product but can also be considered as a means.

Career Self-Management (CSM; Lent & Brown, 2013), the latest model of the SCCT, illustrates the applications of the SCCT. The CSM focuses on a wide range of adaptive behaviors that people employ to adjust to and thrive in education and work environments across the career life span. These adaptive behaviors (see Table 1), adopted from the developmental framework, allow individuals to take part in their own career development, adaptation, and renewal, and include career exploration, decision-making, job searching, and so forth.

Table 1

Adaptive Career Behaviors for Children and Adolescents

Developmental period Primary life role	List of adaptive behaviors
Growth (Age: birth–14) Child, student	• Developing basic self-regulation skills • Developing positive work habits and attitudes • Developing social skills • Developing time management skills • Developing goal-setting, decision-making, and problem-solving skills • Developing subject-specific academic skills • Developing extracurricular (RIASEC) skills • Developing preliminary work-relevant interests and values • Forming provisional vocational aspirations and self-concept, typically without a specific plan
Exploration (Age: 15–24) Adolescent, student	• Continuation and elaboration of Growth period tasks • Developing work readiness and employability skills • Exploring possible career paths • Acquiring career-relevant experiences and skills • Making career-relevant decisions (e.g., regarding leisure activities, elective courses) • Implementing decisions (e.g., applying for jobs, training, college admission) • Managing transitions (e.g., school-to-school, school-to-work, school-to-college) • Forming more specific vocational goals and plans (e.g., *I want to be a . . . and here is how I plan to get there*.)

Note. Modified from Lent, R. W., & Brown, S. D. (2013). Social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology*, *60*(4), 557–568. RIASEC = Realistic, Investigative, Artistic, Social, Enterprising, and Conventional; P-E = person-environment.

In addition to adaptive behaviors, the CSM further defines the major concepts of the SCCT and describes their relationships. Self-efficacy refers to beliefs about one's ability "to manage specific tasks necessary for career preparation, entry, adjustment, or change across diverse occupational paths" (Lent & Brown, 2013, p. 561). Outcome expectations involve the anticipated consequences of particular courses of action. These include positively or negatively valenced social (e.g., peer approval), material (e.g., monetary gain), and self-evaluative (e.g., pride) outcomes. Goals and performance outcomes refer to people's intentions to perform particular adaptive career behaviors (e.g., career exploration and decision-making). Self-efficacy and outcome expectations help to mold career, academic, and vocational interests. As interests emerge, they promote one's intentions (goals) for increasing one's involvement in particular activities, which leads to a change of one's actions (e.g., selecting and practicing certain activities). The actions give rise to a pattern of performance attainments, which help to revise self-efficacy and outcome expectations in an ongoing feedback loop. Self-efficacy and outcome expectations are also shaped by the individual's personal characteristics (e.g., gender, race, disability status) and the features of their environments (e.g., supports received for making career decisions). Together, self-efficacy and positive outcome expectations promote goals and engagement in career exploration and

decisional behaviors and, along with those goals, motivate enactment of goal-relevant behaviors (e.g., follow-through of career exploration).

Self-Determination

Self-determination is considered to be the strongest predictor for successful employment and education outcomes after high school (Mazzotti et al., 2014; Test, Fowler, et al., 2009; Test, Mazzotti, et al., 2009). Self-determination is the ability or process of making one's own choices and controlling one's own life (Wehmeyer, 1998). According to Deci and Ryan's Self-Determination Theory (2008), both intrinsic and extrinsic motivations are powerful forces in shaping our behaviors. These motivations drive people to meet the three basic needs: the need to feel that they are in control of their own life and behavior (autonomy), the need to build their competence and develop mastery of tasks that are important to them (competence), and the need to have a sense of belonging and connectedness with others (relatedness).

However, research has demonstrated that youth with disabilities are typically less self-determined than their non-disabled peers in areas such as making their career path choice or setting up career goals (Wehmeyer et al., 1996). These students often struggle to meet their need for autonomy, as many decisions are made for them and they may not have the physical or intellectual ability to be truly autonomous. Their disability may also interfere with their need for competence, as it can hamper their efforts to master tasks and develop knowledge. Finally, students with disabilities often find it difficult to connect with their peers. These struggles show why it is vital for students with disabilities to have a sense of self-determination. There is a consensus that self-determination skills should be introduced and taught to students with disabilities while they are in school in order for them to have a better school-to-work transition outcome. Transition and supported employment programs provide an excellent opportunity for such individuals to learn how to make choices.

Screening and Evaluation

In the BTTF Frame of Reference, evaluation is focused on two specific areas that are fundamental for the transition from school to work: productive work behaviors and self-determination skills. Each specific area has a set of associated specific functional and dysfunctional indicators (see Table 2). These indicators provide therapists with descriptions of observable behaviors that are clinically relevant and identify the presence of function and dysfunction in a student (Hinojosa et al., 2019).

During screening, therapists first identify whether students are appropriate for the BTTF frame of reference by asking them to self-identify their interest in getting a job in the school or in the future. This screening process is most likely to occur during students' Individualized Education Plan (IEP) meetings or therapy sessions.

In the initial evaluation, therapists create an occupational profile for students. Therapists interview students to gather information on students' vocational interests, habits, attitude, and skills. Therapists could also collect related information from parents and educational staff using readily available instruments, such as a career interest survey or questionnaire. Therapists assess students' knowledge and skills that are required to complete vocational activities and ascertain their strengths, limitations, and potentials. Each school professional can use assessment tools that they deem appropriate for this task, based on their clinical reasoning and judgment, for example: the Assessment of Motor and Process Skills, the Kohlman Evaluation of Living Skills, and the Adolescent/Adult Sensory Profile. Observing students in a variety of situations and environments could also be documented and analyzed.

Table 2

Functional and Dysfunctional Behaviors Associated with Productive Work Behaviors and Self-Determination Skills During Transition

Productive Work Behaviors	
Engages in Productive Work Tasks	Difficult to Engage in Productive Work Tasks
FUNCTION: Ability to engage in productive work tasks **Indicators of Function** • Sustains attention for task completion with minimum verbal prompts • Demonstrates adequate physical, social, psychological, and communication skills to meet task demands • Uses materials and tools in an appropriate and productive manner • Follows necessary hygienic and safety procedures • Performs work related tasks to the age-level expectations	*FUNCTION*: Inability to engage in productive work tasks **Indicators of Function** • Distracted and not able to complete assigned task • Demonstrates limited skill set in one or more area to meet task demands • Difficulty to use materials and tools in an appropriate and productive manner • Does not observe necessary hygienic and safety procedures • Does not perform work related tasks to age-level expectations
Self-Determination Skills During Transition	
Adequate Self-Determination Skills	Inadequate Self-Determination Skills
FUNCTION: Engages in activities that supports self-determination **Indicators of Function** • Identify three modifications and adjustments needed for them to achieve their desired goals • Identify their own characteristics, interests, and career preferences • Sets realistic goals and comes up with plans to reach the goals • Makes decisions, and makes choices • Positive interactions with other students and/or staff • Carry out an assigned task successfully with minimum prompts • Able to advocate for themselves	*FUNCTION*: Does not engage in activities that support self-determination **Indicators of Function** • Does not know what modifications and adjustments they need to achieve their desired goals • Unsure or unaware about their own characteristics, interests, and career preferences • Unable to set realistic goals or come up with plans to reach the goals • Unable to make decisions or make choices • Avoid to interact with other students and/or staff • Require maximum support to execute an assigned task • Unable to advocate for themselves

Additional assessment tools that can be used to measure outcomes during the intervention are listed as follows. During the intervention, while students engage in the job they selected, their weekly progress could be monitored by using a 5-point Likert scale rubric (see Table 3, modified from Wehman et al., 2012). This rubric tracks a student's performance across seven domains of job skills and behaviors: (a) job skill performance, (b) overall production rate, (c) accuracy, (d) communication, (e) social interaction, (f) hygiene, and (g) safety. Students are also encouraged to engage in reflection and self-evaluation. Therapists support students to self-evaluate their work performance, attainment of their self-set goals, and the types of supports they need. Goal Attainment Scaling is one of the commonly used tools to track students' goal attainment.

Intervention

Based on the results of evaluation, therapists then discuss and collaborate with the student to set individual goals related to the two focused areas to facilitate behaviors toward the functional end of continuum. The more students engage in functional behaviors, the more successful the intervention.

Table 3

Grading Rubric for Stage 3

	1	2	3	4	5
Job Skill Performance	Could not/would not do any of task	Requires manual/hand-over-hand prompting on 75% of tasks	Requires detailed verbal instruction or detailed modeling on 75% of tasks	Required minimal verbal reminders on 75% of tasks	Independent on 90% of tasks
Overall Production Rate	Production rate is 25% or less	Production rate is 25%–50%	Production rate is 50%–75%	Production rate is 75%–90%	Production rate is 90% or greater
Accuracy	Less than 25% of work is accurate	Less than 50% of work is accurate	Completes over 50% of work accurately	Completes over 75% work accurately	Completes over 90% work accurately
Communication	Actively avoids communication with other	Requires hand-over-hand prompting or direct instruction to communicate	Requires verbal prompting to communicate, or converses too much when communicating	Requires reminders to communicate, or converses a little too much when communicating	Initiates greetings, offers assistance, answers questions in personal communication mode
Social Interaction	Demonstrates problem behavior as a result of interaction with peers/staff	Avoids interaction with peers/staff	Tolerates interaction with peers/staff but does not implement directive or overly dependent on peers/staff interaction	Interacts with peers/staff with minimal support from staff	Listens to peers/staff, accepts corrections, and follows staff directives
Hygiene (e.g., hand wash, gloves, etc.)	Demonstrates problem behavior such as putting hands in mouth	Requires manual/hand-over-hand prompting to follows hygiene procedures	Requires detailed verbal instruction or modeling to follows hygiene procedures	Requires minimal verbal reminders or gestures to follows hygiene procedures	Neat and clean, and follows all hygiene procedures independently
Safety	Could not/would not ask for help, or demonstrate safety practice/procedures	Requires manual/hand-over-hand prompting 75% of the time	Requires detailed verbal instruction or modeling 75% of the time	Requires minimal verbal reminders or gestures 75% of the time	Asks for help when needed, demonstrates all safety practice and procedures independently
Total					

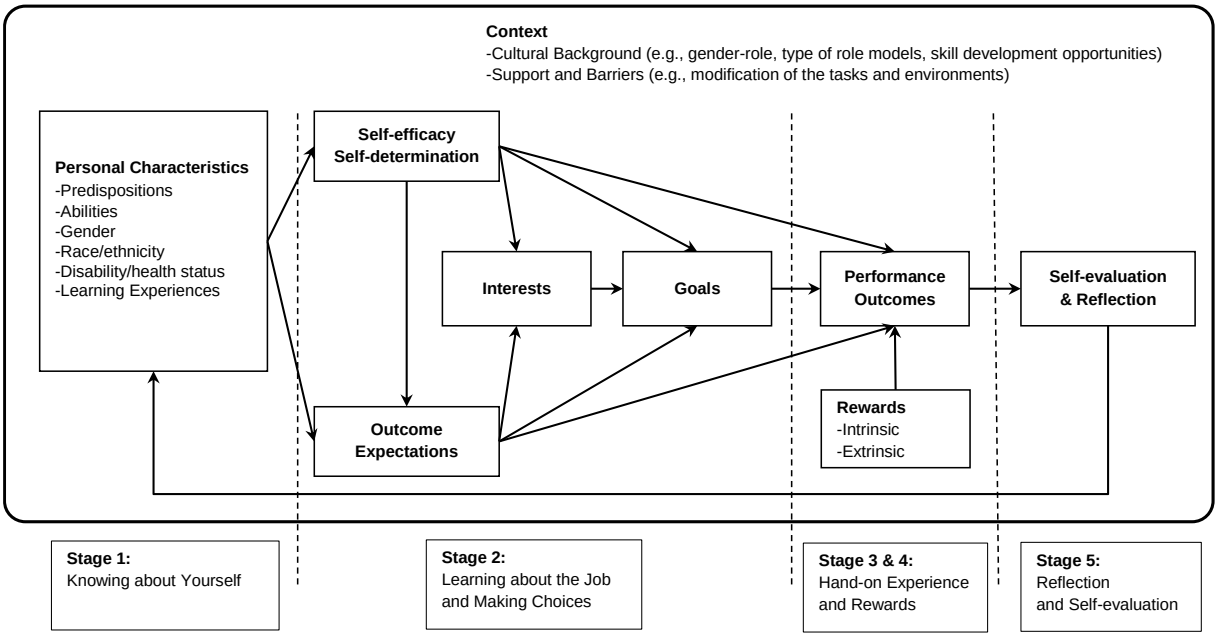
Note. Rating Rubric modified from Wehman, P., Schall, C., McDonough, J., Molinelli, A., Riehle, E., Ham, W., & Thiss, W. R. (2012). Project SEARCH for youth with autism spectrum disorders: Increasing competitive employment on transition from high school. *Journal of Positive Behavior Interventions, 15*(3), 144–155.

Therapists use verbal persuasion, positive reinforcement, demonstration, and environmental modification to enhance a student's productive work behaviors and self-determination skills. The four specific principles of intervention of the frame of reference, which guide the therapist's in developing strategies and methods of intervention to facilitate changes, are as follows:

- The student will more easily form their career interests, set career goals, and engage in the job if they are provided with opportunities to observe others and given positive reinforcement.
- The student will be more likely to improve their job performance if they are provided with various opportunities for job engagement and with external or internal rewards to reinforce the desired behaviors.
- The student will more likely develop positive self-efficacy beliefs and outcome expectations of the job if they have a positive experience in job performance.
- The student will more likely develop productive work behaviors and self-determination skills by going through the described stages: (a) knowing about self, (b) learning about the job and making choices, (c) hands-on experience, (d) rewards, and (e) reflection and self-evaluation (see Figure 1).

Figure 1

Theory of Change Diagram for the Bridge to the Future Frame of Reference



Note. Based on Social Cognitive Career Theory and Self-Determination Theory.

Application to Practice

Occupational therapists in middle and high schools work daily with students to develop their academic and vocational interest and competencies. The BTTF Frame of Reference is designed to be used as a supplement with other curricula. It does not substitute for any of the standard curricula that are currently used in schools to meet the state educational standards and requirements. Instead, this frame of reference provides an important additional opportunity for students to prepare themselves for the secondary transition in a way that is both easy to integrate into a daily classroom routine and sets up all participants for success.

The focus of this section will be to describe in-depth how to apply the frame of the reference in the school setting to assist students in planning and building their pathway to future employment.

General Guideline

The BTTF Frame of Reference is designed for students with IDD in self-contained classrooms. It is suggested to be implemented in a duration of 12-weeks to allow students to adjust from the summer and winter breaks and/or to engage in other school-wide activities (e.g., holiday events). It can also be used for students with other disabilities. With the assumption that schools place students with a similar level of performance in the same classroom, all students in the same classroom would benefit from the intervention. It is recommended to start the BTTF Frame of Reference at the middle-school level and to continue all the way through high school. Students will be able to explore different career opportunities at an earlier age and build up their mastery of tasks during the school years. By the time students are ready to graduate from high school, transition teams should facilitate students' changing roles and routines and promote students' self-advocacy skills, such as expressing their needs and requests for accommodations and for modifications in the environment. It is also important to keep in mind that students with IDD represent different cultures and racial and ethnic backgrounds. They might also have different religious beliefs, gender roles, and age roles in their communities. School staff should consider

how these contextual factors impact students' goals, values, beliefs, and needs, and how they influence students' development of career interests and goals.

The BTTF Frame of Reference uses a transdisciplinary team approach. It is recommended for the school professional team members to meet every 2 weeks, or more frequently, if necessary, to share data about students' current performance and brainstorm ways to improve future student outcomes. Implementation of the frame of reference requires the full participation of the whole class, including all students, teachers, paraprofessionals, and related services. Other school staff members, such as office secretaries, custodians, librarians, security, and cafeteria workers, are encouraged to participate in the program to create job position opportunities for students.

The BTTF Frame of Reference is designed to be flexible, tailoring to students' abilities and needs. The demands of the program increase as students demonstrate progress in their knowledge and mastery of their job duties. Specifically, following the principles of each step detailed above, staff may modify the difficulty of the tasks in order to challenge students to achieve higher levels of thinking and functioning. For example, choosing a job can be broken down into a series of tasks from selecting a job that the student wants to do, to preparing a resume and job application forms, and/or participating in mock job interviews.

Specific Guideline for the 5-Stage Intervention Process

Students start with improving self-awareness and self-conceptualization. Students who are aware of and understand themselves, have a good self-image and approve of themselves, are more likely to have a positive perception of self, and will be able to manage and adjust to their environment (Campbell-Whatley, 2008). Once they have a clear idea of their interests and of what they can accomplish, they are more likely to exhibit goal-directed, self-determined behaviors.

Educational instruction at this stage consists of two parts. The first part focuses on helping students understand the characteristics related to their medical diagnosis, the various supports they need, and knowledge of their own interests, strengths, and weaknesses. The second part focuses on helping students self-evaluate. Staff guide students to engage in a self-assessment process, evaluate different job options available in the school, and consider if they are the right fit. Students try to answer questions such as "What job do I want? What is available for me? Can I do it?" and "Do I like the job?" At the end of this stage, students select two to three jobs they wish to explore.

The second stage addresses the underlying knowledge and skills of a certain vocational activity. During this stage, students learn how to do the jobs they chose and work on how to achieve and maintain fluency and mastery of the job duties. Each member of a school team, representing a different discipline, contributes to a common blueprint for the job that is customized for a student to guide them to efficiently perform the job's complex skills and competencies. For example, when the goal is to engage a student in mail delivery, the occupational therapist provides specific strategies and task modifications that can support students in organizing mail, the speech therapist addresses the communication and social interaction skills needed for delivery, the physical therapist focuses on students' ambulatory skills in the school environment, and teachers instruct the necessary knowledge for performing the mail delivery.

A "job fair" could be held at the end of this stage, allowing students to apply for or pick a job in which they are interested. The transdisciplinary team then works with the student to set goals based on the elements required by the desired job (using the items from Table 4 as guidance). With guidance from the staff, students will also come up with an action plan describing how they are going to achieve the

goals. The student-set goals and action plans can be used to create students' IEP annual goals and short-term objectives.

Table 4

Possible Job Requirements that Could Be Used as Career Goals

Possible Career Goals		
Attendance	Stress tolerance	Quality of work
Punctuality	Interpersonal work interactions	Quantity of work
Personal hygiene and grooming	Interpersonal social interactions	Speed of learning new tasks
Travel	Changes in routines	Performance on previously learned tasks
Verbal communication	Honesty	
Nonverbal communication	Reaction to criticism	Multiple task performance
Money	Work initiative	Organization of work tasks
Reading	Work endurance	Safety procedures
Math		Cleanliness of work environment
Self-identification		Employee motivation
Work schedule		
Personal schedule		
Work facilities		

Note. Brady, M. P., Rosenberg, H., & Frain, M. P. (2008). A self-evaluation instrument for work performance and support needs. *Career Development for Exceptional Individuals, 31*(3), 175–185.

The third stage focuses on the hands-on experience to build up students' work skills and work habits. In order to build work habits and routines, it is strongly recommended that students participate in job activities on a regular daily or weekly basis. Staff provide direct and/or indirect support to the students to build their competence and help them develop mastery over tasks. The goals at this stage are to provide students with a positive learning experience through positive work outcomes and to develop appropriate adaptive career behaviors (see Table 1).

The tasks that students need to perform before, during, and after their job duties should be set up as close to the real situation as possible. Thus, students should be encouraged to perform the following tasks as routine, including, but not limited to: maintaining a sign in/out sheet to keep track of the times they spent doing their job, maintaining proper hygiene, following safety procedures during the tasks, and cleaning up the tools they use after their shift.

Given the link between vicarious learning and outcome expectations, the peer role model strategy is recommended to help career exploration (Ireland & Lent, 2018). When this strategy is used successfully, the peer can demonstrate how the tasks can be done with relative ease and efficiency. This also helps students to build up a sense of belonging and connectedness with others. Therefore, in the BTTF Frame of Reference, students are given opportunities to work as a group while engaging in jobs. Staff may provide students with training on how to interact with each other when working as a team during their job (e.g., identify each other's duties, communication, turn taking, providing support to the peer).

Staff will facilitate learning of the following behaviors:

- Work-related skills: communication, social interaction, time management, self-regulation, following instructions, work habits, safety, and problem-solving.
- Conscientious behaviors: organization, persistence, and self-efficacy. For example, using a checklist to track correct completion of all steps.

The staff member accompanies students to the job site and provides immediate support and prompts during the job activities. Students' weekly progress is monitored by using a 5-point Likert scale rubric (modified from Wehman et al., 2012) as described in the evaluation section. Since students are the experts of their own performance, their voices should also be heard. Students and staff meet and debrief regularly to monitor students' performance as well as to identify what adjustments and modifications are needed.

The fourth stage uses an incentive system to motivate students to participate. Students conform to appropriate behaviors when rewarded either intrinsically or extrinsically. This stage could merge with Stage 3, as rewards are more effective when given shortly after the desired behavior at the beginning. However, when students' intrinsic motivation increases and they achieve mastery in their job duties, staff may reduce the frequency and phase out the use of extrinsic rewards so that students can learn to be motivated intrinsically by their own achievements alone.

Students earn their "wages" based on the time they participated in their job and their job performance. They can use the "money" to purchase a privilege or desired item (e.g., snacks, stationary, or extra computer time). At this stage, staff can introduce students to money management (e.g., banking, budgeting) and functional math (e.g., buying) skills. Staff can also use this stage as an opportunity and take students out to the community as a reward. During such field trips, students can use the skills they have learned in real community settings.

During the last stage, students reflect on what they learned during the job exploration experience. Staff guide the students to answer questions such as: "Did I reach my goal?" "What are the problems I have?" "How do I solve the problems?" and "Am I satisfied with my job?" Staff members help the students to identify the persons in their natural support systems or in potential mentor pools that can provide added assistance with career information-gathering or decision-making.

Case Examples

The following two case examples illustrate possible scenarios during the implementation of the BTTF Frame of Reference.

Case Example 1: Jeremy

Jeremy is a non-verbal 14-year-old with diagnoses of autism and growth hormone deficiency. He was referred to the transitional program because he wanted to learn job-related skills.

At the beginning of the program, Jeremy was presented with several job options and was asked which one he would like to do. He selected "collects recyclables from the classrooms, and brings them to the recycle bin at basement." When asked what else he expects to learn from this program, he expressed a desire to be better at interacting with staff and peers and also to be better at remembering the steps of a task.

The school transdisciplinary team provided the following training and task modifications for Jeremy: (a) a pre-programmed communication device allows him to greet and communicate with staff in the classrooms, (b) a visual checklist to remind him of the task steps, (c) color-coded containers for easy sorting of paper and plastic waste, and (d) weighted bean bags placed in the collecting cart to stabilize the cart and to increase Jeremy's overall strength. Lessons were also provided to help Jeremy achieve and maintain fluency and mastery of the job duties. Jeremy learned about the importance of recycling and what he has to do to perform his job.

Jeremy did not accept his collecting duties readily at the beginning. He often made faces or protested with a loud voice when the staff reminded him that it was time to work. However, he was able

to perform his job with verbal encouragement and occasional physical assistance and demonstrations. After a couple of weeks, he became more comfortable approaching staff and classmates and was able to go through the routine without being accompanied. Jeremy showed signs of satisfaction from the job. He could not wait to start his job routine every day, and he also got excited and had a big smile on his face when he received a "thumbs up" stamp on his sign-in/out book at the end of each route. He exchanged the stamps he collected for additional computer/iPad time during recess.

Jeremy enjoyed showing the "cleaning" icon on his device to others, telling them what he did in school. He also expressed his willingness to continue performing his recycling duties when he was asked if he wanted to change to a different job.

Case Example 2: Nathan

Nathan is a 17-year-old with Down syndrome. During his IEP meeting, he stated that he would like to get a job when he graduates from school. He was then referred to this program to explore different job options and to build up his vocational skills.

Nathan enjoys listening to music and wants to become a DJ in the future. He selected "take care of the speakers and play music for the class during lunch" as his job when he was presented with different job options.

Being a cafeteria DJ was a popular job position among students; therefore, students had to go through an interview process for this position. To prepare for this interview, Nathan practiced his interview skills during occupational therapy sessions and went through a teacher-conducted mock interview. He was excited when the teacher told him that he was hired for this position.

Nathan could carry the heavy speaker from the main office to the cafeteria, connect it with an iPad, and play music from the playlist with verbal reminders after a few sessions of hands-on training. However, after a couple of weeks, he started to have arguments with his job partner on music selection. He became very upset when his choice of music was not played. The staff created a schedule for Nathan and his partner to take turns playing music in an attempt to alleviate the conflicts. Nathan also was encouraged to attend social skills training class to help him deal with conflict in social situations. Despite all these efforts, Nathan became discouraged and started to miss work or refuse to work.

Nathan was asked to reflect on what he learned from this experience. He stated that he still loves music and still wants to be a DJ, but he does not like to work with others. Nathan and his occupational therapist came up with a plan after a discussion. Nathan will pick a job that requires fewer social interactions and continue to attend social skills training. Nathan stated that once he becomes more comfortable working with others in a team, he may come back and try the job as cafeteria DJ again. Although Nathan did not have positive job experiences and choose to explore other job options, the reflection process helped Nathan to understand that changing jobs is a normal process during job exploration and is not necessarily a mark of failure.

All students should experience several different job conditions and different environmental contexts regardless of their cognitive ability or communication skills. Individuals with different hands-on experiences are more likely to understand what interests them. Students with IDD should have an opportunity to compare their initial preferences with knowledge gained from alternate experiences in order to determine if their initial preferences match what they learned through on-the-job experience.

Summary and Future Directions

Preparing students with disabilities to transition from school to their adult life is a newly developing area. Diverse professional disciplines are exploring different theoretical frameworks to

promote students' success in this transition process. The BTTF Frame of Reference provides a guide for promoting school-to-work transitional skills. The two case examples above help elucidate the process of how Jeremy and Nathan developed vocational skills, as well as self-efficacy and self-determination skills, through career exploration under the guidance of the BTTF Frame of Reference. Their interventions were individualized based on their role and participation in the job position they selected, the nature of their dysfunction, and the availability of support in the environment. Jeremy and Nathan made different decisions regarding whether to continue with the same job or not, yet both were active agents in their learning and showed improvement in their self-efficacy and self-determination. Although anecdotal evidence of the BTTF Frame of Reference shows promising results, systematic implementation and research on its efficacy and effectiveness are warranted to serve as a base for intervention protocol development.

The BTTF Frame of Reference proposes a major shift from the traditional approach of career preparation and exploration in the school. The role and responsibilities of the therapists, teachers, school staff, and the students during the intervention process is also shifted. Thus, the BTTF Frame of Reference only provides a set of main principles, and each school has the flexibility to develop comprehensive lesson materials that suit their students' goals and needs. This flexibility will provide schools the opportunity to solve the following issues: (a) various performance levels of students with IDD in the school, (b) job opportunities each school could reasonably create, and (c) the existing transition lesson materials that are already used by schools. Each discipline may also develop materials that focus on different perspectives of each job.

It is essential that occupational therapists support students and help them to explore all the possibilities in their future, especially when they reach the transition-to-adulthood age. Occupational therapists and other school professionals should work together to make a significant contribution to supporting students' career exploration and skill development, as these provide the foundation for students' future daily occupations and pave the way for satisfaction in their adult lives.

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