Promising Practice

EIGHT STEPS TO SCHOOL-BASED EMPLOYMENT TRAINING FOR ADOLESCENTS WITH AUTISM SPECTRUM DISORDER AND INTELLECTUAL DISABILITY

Juliet E. Hart Barnett
Arizona State University

Robert Crippen
Arizona State University

Abstract: Despite the transition requirements mandated by IDEA, and a growing body of research supporting effective transition planning for learners with autism spectrum disorders and intellectual disability, current national surveys of transition from school to work document dismal employment outcomes for adults with significant disabilities who frequently are without employment or are under-employed. Enrollment in vocational or employment-related programs in high school improves post-secondary employment attainment for students with disabilities. Using a restaurant organized and delivered by students with ASD and ID at their local high school as a model, the following describes eight, research-based, practical steps for teachers seeking to develop and implement high-quality, inclusive employment training programs for their students with disabilities. Implementing these steps will assist teachers in preparing students to assume post-secondary, meaningful integrated employment opportunities that are associated with greater economic self-sufficiency, social and community inclusion, and overall personal life satisfaction.

Keywords: autism; cognitive impairments; adolescence; self-determination; transition
Introduction

Despite the transition requirements mandated by the Individuals with Disabilities Education Act (2004) and a growing body of research supporting effective transition planning for learners with autism spectrum disorder (ASD) and intellectual disability (ID) (Gerhardt, 2007), many adults with these significant disabilities are without employment or are under-employed (Migliore & Domin, 2011). Among youth with ASD, 76% of teenagers over the age of sixteen have never applied for a job and 79% percent of adults with ASD continue to live at home (Seltzer & Krauss, 2002). Similarly, a recent analysis of the National Longitudinal Transition Study-2 documented that only 26% of transition-aged youth with ID were working for compensation; even within this relatively small group, 43% were working in settings comprised almost exclusively of individuals with disabilities such as enclaves, mobile crews, or sheltered workshops for sub-minimum wage (Carter, Austin, & Trainor, 2012). Although adolescents with developmental disabilities such as ASD and ID typically remain in school longer than their peers and often are provided with costly long-term funded supports as adults, national surveys document discouraging employment outcomes for this group (Migliore & Butterworth, 2008). With limited employment prospects, they often live lives of isolation and dependence with restricted opportunities to improve their quality of life (Gerhardt, 2007).

However, researchers have cited meaningful integrated employment as a critical goal for youth with developmental disabilities as it is associated with greater social and community inclusion, economic self-sufficiency, and overall personal life satisfaction (Carter et al., 2012; Migliore & Domin, 2011). Research has also stressed the importance of accurately documenting those factors that influence the post secondary attainment of direct hire jobs that pay above minimum wage for individuals with significant disabilities (Moon, Simonsen, & Neubert, 2011). One factor found to improve the post secondary employment attainment for students with disabilities is enrollment in vocational education or employment-related programs in high school (Carter et al., 2012; Shandra & Hogan, 2008). Therefore, interventions and recommendations from the research which reconsider how such learners can be prepared for life beyond the classroom, in the community, and, as gainfully employed citizens, are most critical and timely. Professionals must plan carefully for transition into adulthood to ensure success (Howlin, Alcock, & Burkin, 2005; Turnbull, Turnbull, Wehmeyer, & Shogren, 2013). Based on a model restaurant organized and delivered by students with ASD and ID at their local high school, eight research-based, practical steps for teachers to develop and implement high-quality employment training programs for their students with multiple disabilities will be described (see Table 1).

Step 1: Observe other Programs and Collaborate with District Teachers

Collaboration is an essential element of developing effective employment training and overall quality transition programming for adolescents with disabilities (Shogren & Plotner, 2012). Ensuring that school personnel establish collaborative partnerships and network within and across other model school and community settings can greatly inform educators regarding best practices (Noonan, Morningstar, & Erikson, 2008). The first step in the design of a vocational program is to locate and observe other classrooms in the area and take into account the methods and strategies they employ to promote vocational instruction and job skills among their students.
Table 1

Eight Steps to School-based Employment

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with disabilities. Many schools have a transition coordinator whose job it is to build interagency collaborations, provide technical assistance, conduct needs assessments, and engage in communication to support student transition needs among stakeholders (Noonan et al., 2008). This professional can also link teachers to other model school and community-based programs through the establishment of community of practice groups that can share best practices and support implementation of long term goals and policy recommendations related to effective transition. In a practical way, these collaborations can help teachers interface with others in their school districts and analyze the programs that have been successful in vocational training such as copy centers, mail delivery, and recycling. Such communities of practice can also enable participation in continuous training on transition needs and resources available in the community and state.

Step 2: Align your Program with Core Academic State Standards

Compliance with federal law requires that transition goals, including those associated with employment, be linked to specific academic experiences (Johnson, Stodden, Emanuel, Luecking, & Mack, 2002). In addition, academic instruction in vocational education must be functional and outcomes oriented in order to be successful (Turnbull et al., 2013). For a vocational program such as a classroom restaurant, teachers can look at the common core standards for academic achievement and align the instruction with these standards. For example, high school language arts common core standards require students to be able to understand the meaning of words (this includes technical text) from a variety of sources in order to solve a problem (see http://www.corestandards.org). The comprehension of informational text and the corresponding skills that the standard requires are demonstrated by the students in a vocational restaurant setting (e.g., comprehending menus, using order forms), a copy center (e.g., retrieving meaning from order forms and following the process to complete the order) or when delivering mail (e.g., comprehending the names on the envelopes, navigating maps of the campus in order to deliver).
Step 3: Involve Your Students in the Planning Process in a Meaningful Way

Career and vocational development begins with the student. Utilizing a student-directed approach requires consideration of student preferences and interests (Turnbull et al., 2013). Determining students’ interests and providing them the autonomy and responsibility to decide on, design and evaluate their work empowers them to connect with the content and promotes self-determination. By giving students the opportunity to meaningfully participate in the curriculum, teachers can develop in their students the skills necessary to be proactive and self-determined members of society (Wehmeyer & Palmer, 2003). Incorporating meaningful participation in vocational programs by securing student input in job choices, services offered, and outcome-related rewards may increase student “buy-in.” This buy-in will consequently increase student motivation and engagement, which are related to improved achievement (Guthrie & Wingfield, 2000). If student preferences, interests, and strengths do not significantly influence decisions in the planning process, students may be less likely to employ the skills they have acquired (Turnbull et al., 2013).

The preparation and planning for a classroom restaurant requires menus, decorations, finance decisions and a host of other responsibilities. Including the students in the process of creating the menus based on their favorite meals and snacks and determining prices not only connects to the common core standards but also contributes to increased student motivation. Giving the students artistic design in the creation of the restaurant space is another way to increase the sense of self-determination and emphasize choice in the development process of the vocational program.

Step 4: Connect the Program to Real-World Experiences

The overall goal of any inclusive vocational program is to teach job skills in a realistic vocational setting that will transfer to a supported, integrated employment setting in the community (Billstedt, Gillberg, & Gillberg, 2005; Migliore & Domin, 2011). A critical step in any vocational training program is to give students with ASD and ID the opportunity to gain experience that will logically lead to jobs after high school in a variety of settings. Although the most directly translatable option would be community-based instruction, many barriers exist that can make it impossible for schools to implement such programs such as funding, transportation, personnel, and location in proximity to possible job placements (Kim & Dymond, 2010). Despite these barriers, the school can offer many realistic, instructional job opportunities.

In a school community, a vocational restaurant program is an environment that incorporates key vocational skills for long-term success. We identified these key skills through a review of the literature and through consultation with local community businesses where students might someday work and/or become customers. Important skills such as money management, vocational communication (e.g., greeting customers, taking orders, accepting direction, and inter-staff communication), self-determination, and performance of routine job functions such as cleaning and uniform/hygiene maintenance (Snell & Brown, 2011) were identified for instruction. Included beyond the vocational skills, the restaurant setting was designed as a results-oriented context to increase the requisite, underlying academic skills necessary to participate in the general education curriculum and community beyond the classroom. Academic skills included: writing (e.g., orders, receipts, and menus), reading (e.g., menu items, orders coming in/going out.
of the kitchen, and order forms for inventory), and mathematics (e.g., adding bill totals including tip, calculating change, totaling receipts after closing, and depositing money into store account).

Many self-contained classrooms have facilities that allow for life skills and employment-related instruction. These may include an oven or stove as well as a basic kitchenette that allows for food storage. Classrooms with these items can easily be converted into a restaurant setting (see Figure 1). Although community-based instructional environments are considered ideal, researchers have also spent decades documenting the impact of classroom instruction in simulated settings and their positive impact on skills such as ordering meals, (Pol, Iwata, Ivancic, Page, Neef, & Whitley, 1981), shopping for groceries (McDonnell, Horner, & Williams, 1984), using public transportation (Mechling & O’Brien, 2010; Neef, Iwata, & Page, 1978), as well as domestic and vocational skills (Bates, Cuvo, Miner, & Korabek, 2001) among adolescents and adults with disabilities. Through collaboration with local community businesses and integration of an inclusive vocational program as part of the school community, the classroom can be transformed into one that capitalizes on many of the beneficial components that community-based instruction offers.

**Figure 1.** Example of self-contained classroom reorganized into a restaurant layout.
Step 5: Create Training Materials and Pre-vocational Tasks that Mimic Real-world Processes

In order to achieve an authentic connection to community job settings, teachers and staff must treat the vocational training setting as the equivalent of a community job placement. Part of this process includes creating the training materials necessary for a vocational setting and ensuring that the process is as realistic as possible. It is important to develop training materials such as employee manuals that can be used when the students begin their job placements within the school. These training materials should also be based on scientifically validated practices (No Child Left Behind Act, 2001). For students with ASD and other developmental disabilities, visual supports have been found to be particularly helpful (Arthur-Kelly, Sigafoos, Green, Mathisen, & Arthur-Kelly, 2009).

Prior to participating in our restaurant vocational program, students were required to take and pass the state food safety exam, just as they would be required for this type of employment position in the community. Students then applied to the restaurant for desired positions using applications created in a word processing document by the teacher. We collected applications from restaurants familiar to the students in order to engage and introduce the content to the students. Based on this discussion and the application forms used by local businesses, we were able to modify the application as necessary depending on the students’ abilities (see Figure 2). For learners that required more differentiation, pictures were added to the application to guide responses. Students that demonstrated difficulty with writing used adaptive materials such as name stamps and pictures affixed with Velcro to add them to a laminated application, or used voice to text technology to fill out the form. To further increase the authenticity of the program, we conducted job interviews with the students and, based on their performance, preferences, and skills match, chose to hire the applicants. The students, now considered restaurant staff, were assisted in their daily activities by laminated checklists that they used to track their progress and evaluate their task completion. By linking evidence-based strategies to real-world employment expectations in the creation of our materials, our student staff members were trained to become self-reliant and able to self-prompt their way through the day’s work.

Step 6: Use Research-Based Training Methods

Since the No Child Left Behind Act (2001) was enacted, the curriculum and instructional methods used within both the special and general education settings must be derived from scientifically based strategies. The goal is to ensure each student’s academic success and applies equally to students with and without disabilities. For students with significant disabilities at the transition stage, it is critical that these research-based approaches be applied to the development of their vocational skills in a functionally relevant way. Teachers must investigate evidence-based and scientifically validated practices and apply these in their training programs.
## Bear Café Employment Application

### Personal Information

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<thead>
<tr>
<th>Name</th>
<th>Date of Birth</th>
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<tr>
<th>Address</th>
<th>(Where do you live?)</th>
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<tr>
<td>City</td>
<td>State</td>
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<table>
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<tr>
<th>Phone</th>
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<table>
<thead>
<tr>
<th>Student ID number</th>
<th>State</th>
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- **Have you ever been convicted of a felony?**
  - Yes
  - No

- **Are you a citizen of the United States?**
  - Yes
  - No

**Position Applying for?**

- **Have you applied for this position before?**
  - Yes
  - No

### Education

<table>
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<tr>
<th>High School</th>
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### Employment Experience

<table>
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<th>City</th>
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<table>
<thead>
<tr>
<th>Job Title</th>
<th>Pay $ _ _ _ _ /hour</th>
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</table>

### Reference

Please provide one reference we can talk to about your job performance.

| Name | | |
|------||----|

1. I certify that my answers are true and complete to the best of my knowledge.
2. By signing this application, I understand that false or misleading information in my application or interview may result in my release.

**Figure 2.** Modified job application.
Social scripts. In a restaurant setting, the servers in the restaurant were trained using social scripts (see Figure 3 for an example). Social scripts are used to teach a variety of social and conversational skills such as asking for items, initiating, and turn taking (Charlop-Christy & Kelso, 2003; Ganz, Kaylor, Bourgeois & Hadden, 2008; Howlet, Sidener, Progar, & Sidener, 2011; Sarokoff, Taylor & Poulson, 2001). The script mirrored the requisite language needed to function in the server role. The script training included reviewing the script with the student server and using role-play to ensure independence of the serving skills. The script was faded as the student begins to show mastery of the content.

Figure 3. Sample server training script.

The server walks up to the customers sitting at the table
- “Welcome to the Bear Café
- “What would you like to drink?”

The server gets the drink for the customer and brings it to the table.
- “What would you like to eat?”

The server places a check mark on the order form next to what the customer orders.

The server gives the order form to the cook.

When the order is finished, the cook puts the food on the tray.

The server takes the food to the customer
- “Can I get you anything else?”
- “Enjoy your meal!”

The server keeps the glass full of the drinks.

Video modeling. The kitchen staff was trained using video modeling. Video modeling has been shown to increase a variety of skills such as social skills (MacDonald, Clark, Garrigan, & Vangala, 2005), vocational skills (Kelles & Morningstar, 2012), play skills (Shipley-Benamou, Lutzker, & Taubman, 2002) and participation in the academic curriculum (Hart & Whalon, 2012). Video modeling has also been demonstrated to teach domestic skills such as coffee preparation (Bidwell & Rehfeldt, 2004), a major component of the restaurant. Video was taken using an iPad from the preparers’ point of view for each step in the preparation of the menu items. Using video editing software (iMovie), short videos were streamed together to make a step-by-step video on how to make each menu item. Preparation of each menu item was not longer than five steps and the video model could be paused, rewound, and fast-forwarded if necessary for review and reinforcement.
Step 7: Integrate Your Program within the School Community

Another goal of vocational programs should be to encourage meaningful interaction among students such that students and staff in self-contained classrooms are a vital part of the school community. Connecting students to the school community via a simulated community environment offers real world challenges similar to a typical employment context. Moreover, communicating with school personnel in a business setting has many potential benefits. First, students in self-contained settings often become accustomed to communicating only with other students and staff in their own classroom (Carter, Hughes, Guth & Copeland, 2005). By expanding the program to personnel outside of the self-contained setting, atypical school communication was encouraged and expansion of students’ language use and abilities was facilitated. Second, providing a service that is not only tangible but is also visible within the school setting provides natural reinforcers that a contrived setting is simply unable to offer effectively. Third, school-wide recognition of the students’ efforts creates a sense of responsibility and identification that increases the students’ sense of self-worth and self-esteem.

As part of the classroom restaurant, a Keurig coffee machine was used to create a coffee delivery service. Teachers in the school were given student-created menus (see Figure 4) and were encouraged to place their order with the students for the next school day. The students then created the order and delivered the coffee to the teachers in their classrooms. The service fee was $1.25 that was paid to the students. The total sales for the day were summed after the closing of the restaurant and added to the classroom account. The popularity of the coffee delivery service quickly increased the visibility of the students as members of the school community.

Step 8: Use Authentic “Real-world” Reinforcement

People go to work for a variety of reasons (Amabile & Kramer, 2010). Those that stay at their jobs and perform to the best of their ability do so partly due to a level of pride and purpose they experience in their work. This level of satisfaction should be no different for students working in an inclusive vocational setting. Naturally occurring reinforcers such as social praise from a job well done can increase generalization of learned skills (Aspy & Grossman, 2011). The increase in self-determination can be established easily in a vocational setting. Increases in self-determination have been correlated with enhanced “social capital” or connection with those in the surrounding community, greater choice and control, as well as enhanced health and economic success (Bacon, Walker, Schwartz, O’Hara, Calkins, & Wehmeyer, 2011).

Following these steps from beginning to end with the students’ participation and input creates a sense of ownership that will drive them to continue and to further develop their skills. Establishing a vocational setting with natural maintaining contingencies such as payment and evaluation systems similar to those used in everyday work settings can reinforce appropriate work ethics and behavior (Schloss & Smith, 1998). Developing a “paycheck” system to reward employees for their efforts aligned with a reward system such as a classroom store motivates students the same way we are all motivated to get up each day and go to work.
Figure 4. Student-created menu for coffee delivery service.

The Importance of Promoting Generalization

Foundational to implementing these steps to effective employment training is a focus on generalization. Children and youth with ASD and other developmental disabilities experience difficulty generalizing newly learned skills to other settings, situations, people, and environments (Hart & Whalon, 2008). As such, a critical component of any employment skills program is to
develop a sound plan for transfer of skills across settings, persons, contexts, and time (Bellini, Benner, & Peters-Myszak, 2010). The goal of any training program is behavioral change; that is, if the students are not impacted in a positive way across most aspects of life, the change cannot be considered very meaningful. Bellini et al. (2010) recommended the following techniques to facilitate generalization:

a) train with multiple persons and across multiple settings,
b) ensure the presence and delivery of natural reinforcers for the performance of social skills,
c) practice the skill in the natural environment,
d) fade prompts as quickly as is feasible,
e) provide multiple exemplars for social rules and concepts,
f) train skills loosely (e.g., vary instructions, directives, and prompts), and
g) teach self-monitoring strategies.

As part of a sound plan for promoting students’ ability to generalize the skills learned and noted above, it is important to choose functional skills and to teach them using many examples, across many people, and with multiple instructions. It is also especially important to inform and train other school personnel who have contact with students to reflect these instructional techniques as part of a wrap-around approach (Hart & Whalon, 2011).

The classroom restaurant described herein embedded numerous opportunities for students to practice highly functional skills with a variety of people and across naturalistic contexts. The skills students developed were directly transferrable to outside employment in the community such as cafes, grocery stores, and clerical positions. Connection with community-based instruction sites such as coffee shops, bakeries, and cafes in surrounding areas, in collaboration with rehabilitation/transition specialists, can further facilitate the seamless transition from school programs to competitive, outside employment for students completing a similar school-based, vocational training. Preliminary findings from research with a sample of our students suggested positive impact on target social communication skills (Authors, under development).

Conclusion

Although significant strides have been made over the last two decades in ensuring that students with disabilities enter post-secondary education or are gainfully employed (Newman, Wagner, Cameto, Knokey, & Shaver, 2010), true economic self-sufficiency, life satisfaction, and overall community integration are still distal goals for many adolescents and adults with disabilities (National Organization on Disability, 2010). Programs employing the steps described in this article can create opportunities for individuals with ASD and ID that may have otherwise been nonexistent and open doors that were previously closed for students educated in more segregated special education settings. Using a collaborative approach with other key school professionals; integrating students’ skill sets, preferences, and interests as part of the planning process; and application of evidence-based training materials and methods can result in employment opportunities that promote positive, long-term results for students.
References


