Universal Design for Transition for Students on the Spectrum: Linking Academic and Transition Education to Improve Postschool Outcomes

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Introduction

A few years ago I had a student named Gene. Gene had an encyclopedic knowledge of every movie he had ever watched, and he expressed a strong interest in working in a movie store. My school’s administration was eager to match him with his preferred job. As the school-based case manager, I made arrangements with a local video rental store owner for Gene to test out different jobs. Gene adapted quickly to the steps necessary for restocking videos. He rewound the video tape, entered the video into the computer system, located the genre, and re-shelved the video. Gene worked during school hours, and after graduation the manager of the store hired him, and he worked for a number of years - until the store closed and the era of video rental stores was gone. Gene was unprepared for a new job search. Instead of preparing Gene for a variety of different jobs, we customized his high school experience to maximize his chances for getting his then dream job. Now, I wish we had developed a broader range of skills to prepare Gene for a variety of employment and education options. I wish we had helped him learn how to use transportation, how to enjoy community services, how to explore a multitude of employment and postsecondary education options, and hot to locate support systems outside the school. And I wished we had been able to find a way to do this without considering academic preparation as expendable. Like every other high school student, Gene needed that academic preparation to have the broadest range of post-school options available.
Gene’s story, as told by his teacher, reflects the challenges that come from having a narrow focus on preparing students with disabilities for their transition to adult life. With increased participation of students with disabilities in the general education curriculum, teachers are finding that they now also struggle to address their need for transition-related education (Best, Scott, & Thoma, 2014). It is for this reason that a new framework for educational planning, instructional design, and assessment was developed: Universal Design for Transition (Thoma, Bartholomew, & Scott, 2009). Universal Design for Transition (UDT) is a philosophy of instructional design that promotes successful transitional outcomes for students with disabilities by combining academic and transition education for all students. The system builds on the Universal Design philosophy, which embeds flexible and intuitive structures to increase the likelihood of access to different environments (Aslaksen, Bergh, Bringa, & Heggem, 1997). The UDT model also adopts strategies from the Universal Design from Learning model, which promotes student achievement with educational activities that employ: (a) multiple means of engagement, (b) multiple means of representation, and (c) multiple means of action and expression (Meyer, Rose, and Gordon, 2013). Most importantly, UDT focuses transitional development on improving the individual’s ability to adapt to a variety of situations and environments. Instead of customizing services to the individual, UDT helps create a more adaptable individual who can find and utilize multiple natural supports. For example, instead of helping to develop transition supports for employment or postsecondary programs, the UDT method focuses on building the student’s adaptability to a variety of different environments. To maximize the adaptability of the individual, UDT focuses on developing barrier free transitional
experiences in the areas of postschool life, self-advocacy, and academic skills. Specifically UDT helps to improve the design, delivery, and assessment related to transition (Thoma, et al., 2009).

Traditionally transitional services for individuals with autism spectrum disorder (ASD) have been set by a team of individuals (parents, teachers, the student, and school-based staff). The student’s interests and goals were matched to what were thought to be realistic and available outcomes. In many cases services and instruction were customized to the individual student. For example, to help a student access post-secondary academic activities, the student might learn to sign up for recreational classes through a community education program. Academic lessons would be limited to the academic skills necessary to participate in the service. The student might be taught to read the course manual or to fill out a course request program. In the traditional approach, caregivers assumed that the transitional services would remain static across time. One of the limitations to the traditional approach is the narrow scope and vision of the planners. Teachers, parents, and students tend to customize the services based on prior experience. They focus on outcomes they believe were realistic and attainable for the student (Ayers et al., 2011; 2012). In the short run, the student might have access to community education services, for instance the home video class. In the long-run, however, they might miss new opportunities (e.g. the computer class). In the traditional approach to transition the focus on realistic outcomes can block many individuals with disabilities from participating in academics. UDT assumes that the realistic outcomes for students expand when academic and post-secondary skills participation takes place,
and the UDT approach encourages the individual to develop a broad range of academic skills that can be applied flexibly to future situations.

Using a UDT framework, students with and without disabilities participating in a computer class would have the opportunity to learn to develop Powerpoint slides or a web-based blog. Students could individualize the content they wanted to incorporate into these files, and students with disabilities might use it to explore and identify specific goals for their transition planning meeting. All students would learn technology skills, and students with disabilities would specifically use them to support their transition educational goals as well.

UDT encourages the participation of all students in academic curriculums, the philosophy also includes and encourages the teaching of functional and vocational skills. In general, UDT encourages flexibility by embracing multiple teaching methodologies and practices to promote long-term outcomes. This chapter will review the principles of Universal Design for transition, and provide examples and details of each component.

**How does UDT Build on Research?**

The current outcomes for individuals with significant disabilities, including those on the autism spectrum (ASD), are relatively dismal. Individuals with significant disabilities experience lower rates of employment, higher rates of poverty, and a greater degree of isolation than individuals with milder disabilities (Flexer et al., 2011). In academic post-secondary settings, individuals with ASD participate at lower rates than students with other disabilities (Newman et al., 2011). Similarly, individuals with ASD and intellectual disability are more likely to be isolated from the general education
environment and curriculum (Kleinert et al., 2015). In the isolated environment, the three pedagogical approaches used (a) community based instruction, (b) basic academic skills instruction, and (c) functional skills instruction have proven to be equally ineffective (Bouck, 2012). A different more robust academic approach is required (Courtade et al., 2012; Kleinert et al., 2015). UDT uses research to identify the conditions that create barriers or restrict flexibility for students. Also, UDT borrows the best evidence based practices related to pedagogy, technology, and self determination to help build new higher standards for students with ASD. As an open philosophy, UDT seeks out information from a diverse group of researchers and sources.

UDT aims to eliminate the obstacles preventing access for students with disabilities. Just as implementing a UDL framework provides an opportunity for teachers to design curriculum that is accessible to all and eliminates the need to retro-fit a number of individual accommodations, the UDT framework infuses broad transition educational goals into academic lessons.

**Outcomes and High Expectations**

Faculty perceptions might be linked to a belief that students with ASD are unable to participate in academic situations. Low expectations create a barrier to success for students with significant disabilities. The research clearly documents low expectations as an obstacle to success for students with significant disabilities like autism. Many authors have noted an association between outcomes and expectations. Newman (2005) documented a link between parent expectations and student outcomes, and similar research has been conducted by other researchers (Grigal,Hart, & Weir, 2013).

UDT builds on the research that encourages all students to meet high standards
because they are provided with instruction designed to develop academic skills (Darling-Hammond, 2010) as well as meet their individual transition goals for the future (Best et al., 2015). UDT is a philosophy that embraces the best practices across all environments for a variety of students.

**Evidence Based Practices**

One of the greatest obstacles to successful postsecondary academic transition continues to be the lack of consistent evidence based practices for students with autism across a variety of environments. Because researchers supporting students with ASD come from a variety of different disciplines (e.g. medicine, alternative communication science, psychology, rehabilitation science, and education), the cross-field communication can sometimes be awkward if not confusing. Each field has different terms, different standards for evaluating evidence, and different goals. Because small samples of students are frequently studied, researchers will often cluster many studies together to get a bigger picture of the effectiveness of a strategy. For example, de Bruin, Deppeler, Moore, and Diamond (2013) found at least three approaches to be effective when they grouped single subject studies into one of three categories: (a) Consequence Based Instruction (e.g. time delay, task analytic feedback, TEACCH, Lovaas, and errorless learning), (b) Self-management strategies (self-determination, self-monitoring, and self-reinforcement), and (c) video based strategies (e.g. video modeling). Although the clustering practice can help to determine the relative effectiveness of a strategy, in the real world practitioners need to blend, mix, and match strategies together. Therefore, an effective practitioner might use a combination of strategies and approaches simultaneously. For example, Agran, Wehmeyer, Cavin, and
Palmer (2010) encouraged the field of special education to recognize that approaches like Self-Determination and UDL overlap, blend, and blur together. The UDT model encourages the use of a variety of strategies and views this blending as an opportunity to link academic and transition skill development by building on the UDL framework. The next sections of this chapter will highlight the components of the UDT model: multiple means of representation; multiple means of expression; multiple means of engagement; multiple transition domains; multiple transition assessments; self-determination; and multiple sources of information (Thoma et al., 2009).

Component 1: Multiple Means of Representation (UDL)

The most recognizable component of both UDL and UDT frameworks is multiple means of representation, which refers to presenting instruction in multiple ways so that students with a variety of learning support needs can participate (Thoma, Boyd, & Austin, 2013). In its simplest form, this would include having notes that go along with the teacher’s lecture, and powerpoint slides that highlight key information and include pictures to assist students in understanding the content and key points. The Center for Applied Special Technology’s (CAST) research has found that multiple means of representation targets the recognition network of the brain; that it, is assists with learning ideas and concepts, or the “What” (CAST, from website: http://www.cast.org/our-work/about-udl.html#.VT0c1yFViko).

The CAST group has identified three different types of options to consider under multiple means of representation. They include: options for perception; language/mathematical expression and symbols; and comprehension.
The use of instructional technology can assist with the implementation of multiple means of representation as it provides individuals with ASD a variety of ways that material can be adapted. For example, electronic versions of text can be modified so that a student could “hear” the information, or pictures could be added to assist with comprehension, or definitions and/or symbols for keywords could be embedded in the text. In addition, links could be added to web-based content that can provide a more concrete example of the concepts included in the text. These types of options can assist students with a range of learning challenges, including students on the autism spectrum. In addition, for students who need few distractions while learning, these options can be “turned off.” For many students with ASD hyperfocus is one of the characteristics that make transition between activities problematic. Technology can alleviate some of these issues by embedding prompts for transition within the content, or providing a tool for self-pacing.

The CAST group lists the following guidelines for providing instructional materials that use multiple means of representation that address the three different types of options: perception; language, mathematical expressions, and symbols; and comprehension (CAST, 2011). The first option for perception is that teachers consider ways of customizing the display of information. As previously stated, CAST recommends that multiple options be available and be flexible enough for students to choose which options best meet their needs for learning a particular academic lesson. This is important because learning needs can change based on the type of information being shared and the goals for a specific lesson. Gene, the student described earlier, had no problem learning by reading text-based information for most academic content,
particularly in math or science. However, when learning how to participate in a debate in his history class, Gene needed concrete examples of how to debate, and web-based links to video-taped debates provided an option to represent that information. Those links, however, were not required for all students in the class; they could be used if needed, or ignored if not. The CAST guidelines also include recommendations for alternatives for auditory and visual information (CAST, 2011).

In providing options for language, mathematical expressions, and symbols, CAST guidelines (2011) include five recommendations:

1) clarify vocabulary and symbols;
2) clarify syntax and structure;
3) support decoding of text, mathematical notation, and symbols;
4) promote understanding across languages; and
5) illustrate through multiple media.

These considerations each focus on providing clarification for terms and/or symbols that may be unfamiliar to the learner, and teachers can use a combination of visual, auditory, and/or links to definitions, video, or other online content that can help students decode, translate, and understand the new information. Many teachers report that higher academic expectations can result in fewer opportunities for community-based activities and field trips eliminated, there are a number of virtual field trips that can be used to bring art, history, and science lessons to life for students. They also bring benefits to the education of students on the Autism spectrum who may find actual field trips too overwhelming; students can participate in these virtual field trips over multiple and shorter timeframes.
The final area teachers need to address under multiple means of representation is comprehension (CAST, 2011). Options to support students’ comprehension can include providing background knowledge; highlighting patterns, relationships, critical features, and big ideas; guiding information processing, visualization, and manipulation; and maximizing transfer and generalization. These learning goals can be particularly important for a student like Gene who may learn a vast array of factual information but struggles with applying that information in new situations. Gene was able to learn to calculate the area of a rectangle, but could he use that to determine the size of a room to be painted, and the amount of paint he needs to purchase to complete that task? Gene’s teacher used multiple practical examples of tasks that required he determine the area of a rectangle in order to complete a project (i.e., painting, purchasing a rug for a room, determining whether furniture will fit in a room). Gene’s teacher also used online resources to provide an opportunity for Gene to manipulate items to see if his calculations worked, and to find resources to learn about other projects that require learning to calculate area (including jobs that use this skill regularly).

Component 2: Multiple Means of Expression (UDL)

The second component of UDT, based on UDL characteristics, is the provision of multiple means of action and expression (CAST, 2011). This refers to providing multiple ways for students to communicate what they know or have learned. Students with ASD on the autism spectrum can face challenges in communication, so this component of a UDL approach provides a way to determine more accurately what they learned and how effectively a lesson reached a specific benchmark or learning goal. Done well, the use of multiple means of expression ensures that the strategic networks of the brain are
activated, addressing the “how” of learning. In general terms, the strategic networks of
the brain focus on how one organizes and expresses ideas, plans, and performs tasks.
Examples of multiple means of action can include engaging in problem-solving
activities, writing an essay, working collaboratively on a project, and/or building a model.

Guidelines for teachers from CAST (2011) recommend the following
considerations that are part of providing multiple means of action and expression:
provide options for physical action; provide options for expression and communication;
and provide options for executive functions. Providing options for physical action
includes not only opportunities to demonstrate through performance, but also varying
the technology tools (including assistive technology) that can be used to access the
lesson and demonstrate understanding. Technology also helps provide options for
communication, from using an alternative communication system to using tools such as
word prediction software to support efforts to communicate in writing. Lastly, there are a
number of tools that can be used to support executive functions such as planning, goal-
settings, and monitoring of progress. Teachers use many of these tools as ways to
provide multiple means of representation during lessons, but they also can be used to
support the assessment process. For example, a flow chart used to help students take
notes of the key concepts from a history lesson can also be used to help students
organize their answers on a test of the material.

Students on the autism spectrum often struggle with communication and
collaborative work. While that does not mean that they shouldn’t have opportunities to
engage in these activities, their performance in such activities should not be the only
way that teachers assess progress in learning academic content or meeting
individualized learning goals. Pairing these experiences with an opportunity to work independently in completing a more concrete assessment of their learning (a written test, writing an essay, or completing an online assessment) would be an effective way to provide multiple means of representation.

Component 3: Multiple Means of Engagement (UDL)

The third characteristic of UDL is that it provides multiple means of engagement (CAST, 2011), which centers on the affective networks of the brain and focuses on the “why of learning” (CAST, 2011). This emphasis helps students become purposeful, motivated learners. Teachers focus on increasing student interest in the learning activity; providing options for sustaining effort and persistence; and allowing students to self-regulate their learning.

Typically, students with ASD have strengths when it comes to persistence in learning when the activity or content is highly motivating. In fact, “talking about preferred topics” and “seeking out objects or activities that offer desired stimulation to the exclusion of other activities” are listed as challenges students on the autism spectrum face (Schall, Targett, & Wehman, 2013, p. 452). The challenge comes in supporting students with ASD to be motivated when learning information that does not fall within an area of interest or preference.

A UDL approach provides a framework for scaffolding new content or new learning experiences by linking to those that are highly engaging. Strategies that overlap with components of self-determination are particularly relevant options for increasing student motivation to learn academic content. Students are less likely to be engaged in learning academic content that is difficult, particularly when they do not see
how it is something they will need to use in the future. Finding ways for students to have a choice in how they engage with academic content, to solve problems, to assess and reward their progress, all can increase student motivation and engagement in learning.

Gene’s history teacher could have increased student engagement in learning about the Civil War by having students explore what it was like to live in that era: what jobs were available, how people traveled to work or town, and how daily chores were done without many of our modern technologies. Students would still learn about the war itself, the timelines, and the key battles, but they could do so by also learning about the realities of life at the time, and comparing those to options available now (jobs, transportation, chores, technologies). Students would not only learn about the civil war era, but this type of instruction would help them explore options for their own lives.

Component 4: Multiple Transition Domains

Students with ASD, regardless of their level of support needs, have considerably more postsecondary options today than a few decades ago. Supports and programs specifically designed for people with disabilities have taken root in most major universities (Grigal, Hart, & Weir, 2013), while competitive integrated employment has become the standard in legislation (WIOA, 2014). However, when we design transition services for students with ASD, who all share deficits in communication, social skills, and the ability to generalize across settings, keeping in mind the variety of transition domains becomes essential.

“Multiple transition domains” refer to preparing students with disabilities for an adult lifestyle that reflects their goals, preferences, and interests. These include lifestyle
options such as employment or postsecondary education, and the functional facets of life composed of community living, recreation, self-care, communication, self-determination, and transportation. These domains have been identified from the Transition Planning Inventory (TPI) and are generally accepted as covering both academic and functional skills (Carter, Trainor, Sun, & Owens, 2009).

UDT advocates for targeting an array of skills that enable youth to access all areas of life, not just academic skills. For example, a highly functioning high school student with ASD might be proficient in core academic skills, and therefore may not be seen as needing educational services for transition. However, the same student might need extensive supports to access transportation, live, communicate independently, and engage in meaningful relationships with peers. It is very likely for someone who does not have access to transportation to engage in solitary and sedentary leisure activities, such as watching TV, which would directly impact his ability to interact with same-aged youth or maintain a healthy weight.

The example in Figure 1 below is a one-page summary developed as part of the I’m Determined curriculum available through the Virginia Department of Education (http://www.imdetermined.org). This one-page summary provides a snapshot that a student can use to communicate his or her goals for an adult life with transition team members, as well as adult support providers. It demonstrates clearly that most individuals picture an adult life that includes more than just a job or going to college after high school.

Component 5: Multiple Means of Transition Assessment
Multiple means of transitional assessment means that the transitional support team for a student uses a variety of formal, informal, and alternative/performance-based transitional assessments to gather information about the student’s interests, needs, and strengths. Formal assessments are often commercially produced or normed by researchers. Formal assessments are typically administered to all of the students within a school. The assessments might include career interest inventories (e.g. Career Opportunities Assessment (COPS), vocational placement tests (e.g. Armed Services Vocational Battery-ASVAB), the Brigance Transitional Skills Activities, or educational placement tests (e.g. Scholastic Aptitude Test-SAT). Formal transitional assessments might also be part of eligibility screening for government services like Social Security Disability Insurance (SSDI) or state or regional employment commissions. Informal assessments might include interviews with parents and students, observations of the student in the community, or teacher-made surveys. Importantly, assessments are given to students to identify the information that will help them connect with regional agencies.

There are some examples of accessible transition assessments. One option for students with communication or reading difficulties is the Choose and Take Action software package. This assessment shows the student short clips of individuals working in the community; two videos are shown consecutively and the student is asked choose the job they like best. Over a short period of time, the student will have narrowed his or her job choices. Similarly, the COPS picture inventory assesses a student’s interest in a career after viewing images of individuals in different careers.
There are also a number of examples of informal transition assessments. Figure 2 presents a teacher-made informal survey to assess parental interest in post-secondary educational options. The assessment asks parents to choose options for postsecondary goals that the teacher uses to start conversations with the family. The first question invites the parents to explore a variety of post-secondary educational options, ranging from recreational educational programs to college programs designed for students with ASD. The second and third questions encourage the parents to explore different educational options with their child. The second part of the assessment, Figure 3, contains questions related to the admissions requirements for some of the local programs (e.g. transportation and a history of employment is sometimes stipulated by the college admissions teams).
Figure 2. An Example of an Informal Transitional Assessment. This particular teacher made assessment is designed to measure a parent’s interests in postsecondary educational
Regardless of the accessibility, formal off-the-shelf assessments have significant weaknesses. First, commercial publications are based on the job market at the time of publication and they may not reflect recent changes in the economy and job market. Brick and mortar stores might still be described as viable job options within the formal assessments despite the rapid movement towards an online marketplace. Jobs formally considered viable might not be available in the near future. Similarly, commercial publications are not familiar with the local jobs market, and jobs unique to localities will often be overlooked. For instance, oyster farmers might be needed in the maritime regions of Virginia, while gas attendants might be more readily employed in
New Jersey. A third disadvantage to some of the off-the-shelf transitional assessments is that they might not focus on post-secondary educational options. A fourth disadvantage is that such formal assessments are typically inventory-like assessments that assume individuals have had sufficient experiences to identify their preferences; they are often only as accurate as the degree to which an individual has had these experiences and can identify preferences. For many students with disabilities, including students on the autism spectrum, their experiences are very limited, and the level of self-awareness necessary to make such inventories valid is often a challenge. Lastly, preferences for certain activities are often contextual. That is, what may be an undesirable activity could be acceptable if required as part of a larger picture that is highly preferred. For example, Gene answered that he preferred jobs that were done with minimal interaction. However, when working in the video store, he was able to interact with others in talking about movies, movie genres, and an early movie featuring a favorite actor.

Similar local issues can surface related to the postsecondary educational options located within each community. Each locality is likely to have unique educational and vocational options. For example, a large urban area might have multiple postsecondary education programs and adult support agencies that provide vocational and educational services for young adults with autism; this may be very different from rural and suburban areas that might have more limited agency support but whose communities might be more inclusive and supportive. Transition assessments must include a survey of the communities in which students plan to live, to identify the opportunities, supports, services, and barriers to their goals for adult life. A strategy known as community
resource mapping (Crane & Mooney, 2005) provides a structure for investigating what is available in a specific community in terms of multiple transition domains. See the resource list at the end of this chapter for a link to this information and a way to collect this important information.

Gathering information on student abilities should include assessments that observe their skills, strengths, and needs in real world settings. These informal assessments can help to widen the transitional field for students, provide information that is more useful in planning supports and services needed to be successful in the new settings. Assessments should be used to start the conversation about transition, and the assessments should be used to help the team explore all available options. Teams should avoid using the results of transitional assessments to limit the post-secondary opportunities for students. If multiple transitional assessments are showing that a student has an academic need for support, then the transitional team can and should explore ways to support the student's self determination.

Component 6: Multiple Means to Support Student Self-determination

Student self-determination, a concept reflecting the belief that all individuals have the right to direct their own lives (Bremer, Kachgal, & Schoeller, 2003), lies at the heart of quality transition planning. A position statement on self-determination (Field, Martin, Miller, Ward, & Wehmeyer, 1998b) by the Council for Exceptional Children's Division on Career Development and Transition stated that a focus on self-determination is vital to help students be more successful in education and transition to adult life and holds great potential to transform the way in which educational services are planned and delivered for students with and without disabilities. Research has shown the link
between enhanced self-determination and positive outcomes in employment (Field, 1996; Field, Martin, Miller, Ward & Wehmeyer, 1998a; Wehmeyer, 1997; Wehmeyer & Schwartz, 1997, Wehmeyer & Palmer, 2003), quality of adult life and community living (Wehmeyer & Palmer, 2003; Wehmeyer & Schwartz, 1997), and postsecondary education (Brinckerhoff, 1994; Greenbaum, Graham, & Scales, 1995; Field, Sarver, & Shaw, 2003). In a literature review conducted by the National Secondary Transition Technical Assistance Center (NSTTAC), self-determination/self-advocacy was identified as one of sixteen predictors empirically linked to post-school success for students with disabilities (Test, Fowler, et al., 2009; Test, Mazzotti et al., 2009, Mazzotti, Test, & Mustian, 2012).

Self-determination is a key component of intrinsic motivation, self-regulation, and personal responsibility, traits that are crucial for success in both education and society (Deci et al., 1991), and according to Halloran (1993) it is education’s ultimate goal. Using a UDT framework for instructional planning, students play a more active role in creating their own learning experiences than they would in a more traditional program. Students are encouraged to make and express choices based on their goals, learning styles, strengths and weaknesses, and preferences, fostering growth in understanding themselves and their own needs and predispositions. This approach not only supports improved academic achievement, it also prepares them to make decisions about their adult life (Best et al., 2015).

According to the principles of UDT, transition and planning services are designed to give students multiple ways to be engaged in the process, beginning with setting goals and working in a “backward-planning process” (Thoma et al., 2002, p.86) to
identify the skills, resources, needs, or modifications necessary for students to achieve those goals. Benz, Lindstrom, & Yovanoff (2000) found positive correlations between completion of self-identified transition goals and competitive employment and enrollment in postsecondary education. There are many ways students can participate in this process, whether using a student-led or person-centered approach, depending on the student’s level of comfort and the availability of supports (Thoma et al., 2002). Self-determination involves the student’s involvement in both the setting of goals and in the steps taken to achieve them (Landmark, Ju, & Zhang, 2010).

The Self-Determined Learning Model of Instruction (SDLMI; Wehmeyer et al., 2002) provides a framework to foster self-determination through a problem-solving approach. The SDLMI involves three phases of questions to help students set a learning goal, construct a learning plan, and adjust behaviors (Wehmeyer et al., 2002). As noted by Thoma et al. (2002), the SDLMI is an effective organizational tool that facilitates students’ roles as “the causal agent in their transition planning” (p.36). While it teaches students to use a problem-solving strategy that increases their self-determination, it can be used to address multiple goals or problems, including academic learning, choosing transition goals, and/or identifying options for dealing with a problem. See the example below Gene’s use of SDLMI to organize his preparation for completing a book report for his American Literature class (Figure 4).

Component 7: Multiple Sources of Information

Transition planning requires teamwork, more so than any other type of educational planning process (Thoma, 1999). It is for this reason that stakeholders
outside the school system are required to be invited to the transition IEP meeting, including a representative from any agency that will (or might) provide services to the student after graduation (Individuals with Disabilities Education Improvement Act (IDEA), 2004). One person alone cannot know the student’s preferences, the postsecondary options available, and the means to make the connection between the two. Students and their families know how they envision their future, teachers know the legal mandates and the steps to planning for transition, while other agency representatives are familiar with the types of postsecondary services available. For this very reason, interdisciplinary planning has been determined to be a critically important part of the transition planning process for youth with disabilities, including those on the autism spectrum (Noonan, Gaumer, Erickson, & Morningstar, 2012).

The UDT framework encourages transition teams to expand the network of individuals they consider including in the planning process and involving in instructional lessons. As Gene considered life after high school, he expressed an interest in working with technology. While his teachers had some knowledge of the different types of positions working in the field of technology, like software engineer or computer programmer, they did not know all the types of jobs that are available. Gene’s teacher invited a software engineer from a local firm to meet with the team to discuss a range of different positions in the field, as well as the educational requirements for each. This information provided guidance for high school course planning, as well as part-time jobs to gain valuable experience, and helped guide decisions about post school options. Not only did this collaboration provide a way to improve the individual transition planning process, it also provides opportunities to improve educational lessons. This software
engineer worked with teachers to identify computer skills that all students would need to enter the job market, and incorporated opportunities for students to work on those skills in academic courses. Using spreadsheets to present and analyze data, social media to communicate with the world, and the internet to research relevant information to guide decisions are all twenty-first century skills that students need to be competitive for employment. Teachers should be able to call on experts to help with lesson planning that incorporates useful strategies, and when possible, to teach these hands-on practical aspects of the lesson. Skills like these would have prepared Gene for a specific job after graduation, but also would have helped him have other options for the future if he changed his mind, or if he wanted or needed to move onto other options later.

One of the barriers to inviting community resources into the transition planning process is the formality of the IEP process. Nevertheless, there are alternative meeting approaches that are designed to be more conducive to participation for a range of individuals, including the school personnel who are required to be there. To encourage the participation of students, parents, school and adult agency personnel, as well as community resources, one might consider using person-centered planning approaches (Mount, 1992) such as McGill Action Planning Systems (MAPS; Forest & Lusthaus, 1989); Planning Alternative Tomorrows with Hope (PATH; Pearpoint, O’Brien, & Forest, 1993); or Group Action Planning (GAP; Turnbull & Turnbull, 1996), or a range of student-led planning processes (i.e. Thoma & Wehman, 2010). Research on the impact of these types of training processes found that not only did students and their parents interact more during IEP meetings that used these approaches, but teachers and school
administrators also increased their communication during those meetings (Martin, Van Dyke, Christensen, Greene, Gardner, & Lovett, 2006).

Incorporating a student-directed IEP approach can be viewed as a continuum of student involvement in the meeting (Thoma, Saddler, Purvis, & Scott, 2010), from student presence at the meeting through having the student lead all or part of the meeting. It is worthwhile to consider the use of technology to support student involvement in the transition planning process and in academic assignments that facilitate goal setting, understanding the impact of a disability on strengths and needs, and developing self-advocacy skills. See Figure 5 below for a planning tool that can be used with students and their parents to improve the participation of student direction of the planning process.

INSERT FIGURE 5 HERE

IX. Pulling it all together

There are a number of resources available for teachers to help them incorporate a UDL framework in their lesson planning process, but how does a special educator expand that to include these critically important aspects of transition education and planning? Thoma et al. (2002) have developed a lesson planning template that teachers can use to link transition and academic education for youth with disabilities (see Figure 6 below). It provides a way to consider all of the possible links that can and do exist between academic and transition education. It should be noted, of course, that not all lessons will incorporate all of the seven components of UDT. Instead, each of these should be considered for the most relevant links, with the ultimate goal of addressing each of these over time.
Of course, since goals for adult life are individual, there will come a time when the focus will be more individualized and less universal; however, the more that middle and early high school academic instruction infuses knowledge and skills that students will need to prepare for their future, the better the foundational preparation for life will be for all students. And that’s ultimately the goal of education for all, isn’t it? The following list of resources will help to identify the ways that academic and transition education can be linked for secondary school students.
REFERENCES


Resources

Science & Social Science

1. The CAST Science Writer guides students through the steps of creating a science report. The following is the website: http://sciencewriter.cast.org/

2. Building prior knowledge can be important, and virtual field trips can help students explore historic or scientific places of merit. The following is the website: http://www.middleweb.com/22188/virtual-field-trips-spice-up-learning/

Math

CAST has created a number of resources to help students learn Algebra. This resource has developed a number of computer aided instructional tools for teaching Algebra skills to students. Website: http://iSolveIt.cast.org

Reading/Language Arts

CAST has created a public library of UDL books. The books contain hyperlinks, read aloud, and prompting cues. The demonstration texts are available at website and links to a library of electronic books are available at websites: http://udleditions.cast.org, and http://bookbuilder.cast.org .

Teacher planning tools

Graphic organizers can help students structure information. There are a couple of free options available at the following websites: http://www.dailyteachingtools.com/free-graphic-organizers

Jigsaw reading assignments can help to strengthen comprehension skills. Teachers can use screenshots of text to create digital jigsaws using the following website:

[http://www.jigsawplanet.com](http://www.jigsawplanet.com)

**Technology**

Universal Design features are available on most computers. However, there are a number of free publicly available resources.

1. The Massachusetts Institute of Technology has created a Freedom Stick to help teachers and students to activate different features like text-to-speech, speech-to-text, and visual contrast options. The software can be stored on a USB drive or downloaded to a harddrive on the computer. The information is available at the following website: [http://mits.cenmi.org/Resources/MITSFreedomStick.aspx](http://mits.cenmi.org/Resources/MITSFreedomStick.aspx)

2. The CAST website has developed a tool to help teachers and students to build UDL books. In addition, a library of free texts is available at the following website: [http://bookbuilder.cast.org](http://bookbuilder.cast.org)

3. Natural Voice Reader is another option. The software recognizes text with optical character recognition and the software can read text aloud. The software is available at website: [http://www.naturalreaders.com/](http://www.naturalreaders.com/)

4. Similar software is available for the Mac computers at the following website: [http://www.pure-mac.com/access](http://www.pure-mac.com/access)

5. A group of educators have created an interactive wiki to share UDL resources. The group collectively edits the resources using the following website: [http://udltechtoolkit.wikispaces.com](http://udltechtoolkit.wikispaces.com)
**Self-Determination Resources**

1. The I’m Determined project promotes student self-advocacy. The program encourages students to advocate for services, promote policy reform, and participation in the individual’s IEP. The following website provides more information: [http://www.imdetermined.org/](http://www.imdetermined.org/)

2. The National Gateway to Self-Determination provides information about self-determination. The organization provides general information and resources for teachers and parents. The website is as follows: [http://www.ngsd.org](http://www.ngsd.org).

3. The Beach Center provides many resources for working with students with disabilities. The library provides a teacher’s guide to self-determination. The resources are available at the following website: [http://www.beachcenter.org](http://www.beachcenter.org).

4. The National Resource Center for Supported Decision-Making provides state specific information related to issues for individuals with disabilities. The information is available at the following: [http://supporteddecisionmaking.org](http://supporteddecisionmaking.org).

**Transition Assessment**

1. The National Secondary Transition Technical Assistance Center (NSTTAC) provides information related to the evidence based practices in the world of transition and the organization has provided a toolkit for age appropriate transition assessment. The website is as follows: [http://nsttac.org/](http://nsttac.org/).

2. The Zarrow Center for Learning Enrichment has multiple transitional assessment resources including a preference assessment, a self-determination assessment, a curriculum, and a transitional goals generator. The information can be found at [http://tagg.ou.edu/tagg](http://tagg.ou.edu/tagg).
Information for Parents

Parents are important team members, and they often need support in the form of information. The PACER Center regularly publishes information for parents. Past publications have examined self-determination, issues associated with the age of majority, and other transition issues. The resources can be found at the following website: www.pacer.org/publications.