Educators have made great strides in integrating students with autism spectrum disorders (ASD) into general education over the past several decades; however, at the secondary school level, these students still often experience serious difficulties. A major obstacle to success for adolescents on the spectrum is executive dysfunction. There is a growing awareness of the importance of executive competence for all aspects of academic and social life, and for navigating the complicated maze of everyday life. For high school students with ASD, executive functioning is a critical area of development, especially as they prepare for the transition to postsecondary environments. It is critical to understand the significant role played by executive skills in our lives and to explore opportunities to build competence in this domain. Educators can help students to be successful in high school by presenting learning tasks in flexible ways that address individual learning styles and support access to cognitive processes. This article discusses strategies that build reciprocal teacher-student relationships, support positive behaviors for learning, and present instruction through means that enable diverse learners to engage in learning, wherein reducing school-based obstacles that may lead to anxiety and executive functioning difficulties. Central to this construct is the tenet that every student has strengths upon which successes can be achieved. The model is based on ongoing personalized support through approaches that are grounded in scientific evidence and that focus on environmental modification rather than on changing students.

Executive function refers to a set of mental processes that helps connect past experience with present action; processes which people may use to perform activities such as planning, organizing, strategizing, paying attention to and remembering details, and managing time and space (National Center for Learning Disabilities, 2012). Executive dysfunction may interfere with organization of time and tasks to the extent that students become frustrated and depressed. For adolescents with ASD, the consequences of executive dysfunction can be devastating. As students progress through their high school years, executive functioning competence becomes increasingly critical to academic and social success.

While many executive functions, such as inhibitory control do begin in childhood, it is during adolescence that brain systems become more integrated. During this period, neurotypical adolescents experience maturation in executive functions, such as attention and focus, inhibitory filtering, goal-directed behavior, and organizational planning. Most students with autism spectrum disorders do not show the same level of maturation in these essential skills as do their neurotypical peers, and challenges in these areas create significant obstacles to engagement in school and community activities. These difficulties become increasingly apparent as expectations rise in multi-tiered school assignments and in forming more multidimensional friendships. Strategies and supports to facilitate success in school and out of school are critical to help adolescents with ASD engage in both the academic and social arenas.

According to Oznoff, South, and Provencal (2005), executive functioning is a cognitive construct used to describe behaviors that are goal-directed. These behaviors involve task planning, self-regulation, flexibility, organizational skills, and working memory. Adolescents with ASD, along with their teachers and parents, face continuous challenges in secondary school that are unique to their learning and behavior repertoires. Even when mandated supports and accommodations are available for academics, difficulties in managing the complex schedules and routines of high school often continue to frustrate students who are on the spectrum. In addition, the social arena remains an enigma, without a road map to help them navigate. These students need an educational environment that will foster development of nurturing relationships and full participation to enable them to be actively engaged in their school community and prepare them for successful post-secondary experiences.

In order to prepare students with learning and behavior challenges for everyday life in secondary school and beyond, high school special educators need to be able to design strategies that promote independence (Kawasaki, 2012). The educational path that leads to independence in adulthood is paved with operational executive skills. These skills are central in the development of self-determination, self-advocacy, and social competence (Roberts, 2010; Wehmeyer & Patton, 2012; Zager & Alpern, 2010). To adequately prepare students with ASD for college and other postsecondary environments, school personnel should work closely with families to foster competence in organizational skills, self-determination, self-advocacy, and socialization. In short, competent executive functioning is the undergirding for success in school and adulthood.

Models to Promote Successful Engagement

High school educators can increase students’ opportunities for success by presenting instruction and other school activities in flexible ways that take into account how individuals access and understand new information. By building trusting safe relationships and by providing conditions that enable all students to participate, teachers can establish a school community in which diverse learners are empowered to be successful participants. Three scientifically validated (i.e., evidence-based) approaches that hold promise for enhancing school learning and the high school experience, therein promoting successful engagement are: (1) Universal Design for Learning (UDL), (2) Positive Behavior Supports (PBS), and (3) Developmental Individual Difference Relationship (DIR). It should be noted that while these approaches have been researched extensively, they still require further investigation to be fully endorsed as effective methods for improving executive functioning and engaging students with autism in high school.

The promise of these practices resides in their potential to yield educational programs that enable learners of differing ability to successfully access curriculum. Within these existing models of intervention and instruction lie opportunities to create learning-rich environments to support students across the age span from early childhood through adolescence and into adulthood. While at first glance it may appear that these approaches require extensive time and effort to implement, and it is true that the learning curve can be steep for those that have not been exposed or trained in utilizing these techniques, the fact is that by employing systematic school-wide supports, students will be more engaged in education and outcomes will be better.

Universal Design for Learning

One model that has been proven through research studies to be effective in increasing engagement and improving learning outcomes for students with disabilities is Universal Design for Learning (UDL). Universal Design for Learning is a broad term that refers to making learning accessible to all students. It is founded on a set of curriculum development principles that provide all individuals equal opportunities to learn, and is a derivative of environmental and architectural design that affords access for all individuals to navigate their community (e.g., ramps, accessible bathrooms). Universal Design for Learning is not targeted at accommodating persons with a particular disability but is planned to ensure that the learning environment is inclusive and meets the needs of all learners. It is both individual and systemic.

Universal Design for Learning has been shown to lead to increased engagement in academic and social environments for students with diverse learning characteristics. Instructional practices and
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learning assessments are based on student strengths, not deficits that often define ASD. The approach enables the design of differentiated instruction through use of multiple learning environments and, when necessary, multiple means of assessment and expression (Zager, Alpern, McKeon, Maxam, & Mulvey, 2013).

Understanding students’ learning characteristics, including strengths and weaknesses, is a prerequisite to effective instruction. Through UDL, it is possible to motivate learners at different levels and with disparate interests through multiple means of engagement. Learning material may be presented in a variety of ways to present information in a manner that is understandable and meaningful to everyone by employing multiple means of representation. In addition, assessment may come in different forms to empower students to demonstrate their mastery of content matter in a format suited to their learning style through multiple means of expression (Hall, Meyer, & Rose, 2012).

In UDL, through flexible articulation of goals, methods, materials and assessments, all students are able to enter the curriculum at a point that is comfortable for them. Evidence-based methods that are tied to goals and differentiated to address learner variability define good instruction. Through differentiation of instruction, materials may be multi-dimensional or multi-media as learners acquire information in varied ways. Finally, UDL assessment reduces barriers for students by allowing them to demonstrate knowledge and skills in a manner that enables them to articulate what they know so that they may be assessed on specific content, rather than on their test taking ability.

System-Wide Positive Behavior Supports

In some ways similar to UDL, positive behavior supports also involve redesign of the environment to increase productive engagement of people with challenging behaviors. As with UDL, positive behavior supports (PBS) focus on modifying the environment, rather than the individual. PBS is grounded in a commitment to inclusion of all students in their educational community. In striving to improve executive functioning that will enable students to manage their academic programs, fulfill academic responsibilities, and engage in community life with more ease; educators will find it helpful to utilize systemic school-wide supports that take into account students’ communication, social and behavioral challenges.

Positive behavior supports are derived from principles of behavior analysis. When systemic PBS is employed, using the entire school as the intervention unit, rather than a specific individual, behavior and socialization within the school community has been shown to improve (Taylor-Greene, et al., 1997). Classrooms and other environments can be redesigned to reduce maladaptive behaviors and increase socialization and learning in varied ways. Educators can modify the physical layout, daily schedule, curriculum, and instructional materials.

When redesigning physical space and instructional presentation, it is first necessary to understand the behaviors that we are trying to reduce and the behaviors that we are attempting to build in relation to the individual and the environment. This is accomplished through functional analysis of behavior. Functional analysis of behavior is the process of identifying consequences and/or precursors of the behavior that can predict the onset of the behavior or maintain the behavior. Functional analysis yields information about when, where, and why a behavior is occurring. By using interviews and direct observation, important and useful information about the antecedents and consequences that sustain behaviors can be obtained (Horner, 2000). This information should be considered in planning the design of the school environment and instructional situation in order to facilitate successful interactions.

Developmental Individual Difference Relationship Model

The Developmental Individual Difference Relationship (DIR) model provides a framework to understand the functional emotional development and unique profile of individual students and can be used as a guide to create emotionally meaningful learning interactions that promote critical functional emotional developmental capacities, including executive functions. Through the DIR model, educators can gain understanding of the unique ways each person takes in, regulates, and responds to information. The DIR model focuses on building relationships with parents, educators, and peers to increase positive interactions and improve learning outcomes. While most of the literature on DIR discusses young children, it is a logical extension of the theories underlying this model that relationships are central to learning at all age levels. The principles of understanding strengths and weaknesses and building upon strengths through trusting relationships can significantly impact high school learning and behavior for students with autism spectrum disorders. This is an area that merits further research targeted toward building positive school communities. Such school environments have the potential to increase participation in the academic and social domains, and to foster development of executive competence.

Conclusion

Parents and educators, alike, recognize the importance of strategies that build reciprocal teacher-student relationships, support appropriate behaviors for learning, and present instruction through means that enable all learners to be full participants. Positive school environments can reduce stress and anxiety that are common problems in adolescents with ASD, and which can often result in executive functioning problems. Three models, which have been shown to be promising for students on the autism spectrum include Universal Design for Learning, Positive Behavior Supports, and the Developmental Individual Difference Relationship model. Importantly, these practices have a common theme, in that they each consider the need to modify the environment rather than to change the student. UDL, PBS and DIR build on student strengths. By modifying activities and tasks, as well as environmental settings, the focus is shifted from trying to remedy problems within the student to empowering and enabling students to utilize their strengths to build success. By employing these three approaches in a complementary manner, educators can create a new configuration of evidence-based practices with synergistic potential to enhance learning.

This paper was supported, in part, by the Michael C. Koeller Endowment in Autism at Pace University.

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