

PSYCHOLOGICAL INTERVENTIONS FOR TWICE-EXCEPTIONAL YOUTH

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Twice-exceptional students (e.g., high-ability students with disabilities) have unique psychological and educational needs. Empirical investigation has increased professionals' knowledge of this population, but fewer researchers have examined effective psychological and educational interventions that address students' abilities and disabilities. Efforts have been made, however, to operationalize a definition of twice-exceptionality. Specifically, two recent definitions (Baldwin, Baum, Pereles, & Hughes, 2015; Reis, Baum, & Burke, 2014) have been proposed in response to previously established goals articulated in the literature: to expand twice-exceptional students' recognition in schools; to allow a wider pool of students to be considered as twice exceptional (Reis et al., 2014); to increase understanding among parents and constituency groups (Foley-Nicpon, 2015b); to streamline professional development offerings (Foley-Nicpon, 2015b); to bridge the divide between researchers and practitioners (Baldwin et al., 2015); and to provide a basis for researchers investigating this phenomenon (Foley-Nicpon, 2015b; see Table 35.1). These definitions are highly similar—they operationalize high ability and disability, and how they can simultaneously manifest in one child. Both definitions reference the masking phenomenon, where a child's gift may serve to "hide" his or her disability, or vice versa, and both highlight the need to provide educational programming formally addressing talent domains and areas of deficit. The main differences between these definitions are in the attention to professional development and specifics about how twice-exceptional

students are best identified through comprehensive assessment strategies (Foley-Nicpon, 2015b; Neihart, 2008).

The purpose of this chapter is to provide psychologists and other professionals with a foundation for working with twice-exceptional students in clinical and educational settings. The discussion is grounded in a historical context outlining how twice-exceptionality has evolved since first recognized, and the rationale for why professionals should conceptualize students' strengths and areas of concern within a social-ecological theoretical perspective. Extant research findings describing empirically validated interventions with twice-exceptional students are summarized, followed by practice and policy implications and multicultural considerations. Finally, future directions will be offered.

IMPORTANCE OF THE TOPIC

It is challenging to accurately report prevalence rates of twice-exceptionality in the United States for a multitude of reasons, ranging from misdiagnosis and misidentification of ability and/or disability (Pfeiffer, 2013) to variable methods for identifying giftedness in schools (McCallum et al., 2013). If 6% of students served through the Individuals with Disabilities Education Act (IDEA) in 2013 are also considered to possess high ability in one or more domains, approximately 385,000 students would qualify as twice-exceptional (U.S. Department of Education, National Center for Education

TABLE 35.1

Comparison of the National Commission on Twice-Exceptional Students and the Twice-Exceptional Community of Practice Definitions of Twice-Exceptionality

Content area	National Commission on Twice-Exceptional Students	Twice-Exceptional Community of Practice
High ability	Demonstrate potential for high achievement or creative productivity.	Demonstrate exceptional ability.
Disability	Manifest one or more disabilities as defined by federal or state eligibility criteria.	Demonstrate a disability.
Combination of high ability and disability	High abilities and disabilities combine to produce a unique population of students.	Results in a unique set of circumstances.
Performance manifestation	Twice-exceptional students may fail to demonstrate either their high performance or specific disabilities.	Exceptional ability may dominate, hiding disability; disability may dominate, hiding ability.
Masking reference	Gifts may mask disabilities and disabilities may mask gifts.	Each may mask the other so that neither is recognized or addressed.
Identification	Identification requires comprehensive assessment in areas of giftedness and disabilities.	Methods of identification that consider the possible interaction of the exceptionalities.
Educational programming	Educational programming needs to serve the high achievement potential and academic and social/emotional deficits; they require an individualized education plan or 504 plan.	Enriched/advanced educational opportunities that develop the child's interests, gifts, and talents while also meeting the child's learning needs; provision of simultaneous supports such as accommodations, therapeutic interventions, and specialized instruction.
Professional development		Educators of the twice-exceptional need specialized training and ongoing professional development.

Note. From "Voices From the Field: The Higher Education Community," by M. Foley-Nicpon, 2015, *Gifted Child Today*, 38, p. 250. Copyright 2015 by Sage. Reprinted with permission.

Statistics, 2013). This estimate, however, is likely an underrepresentation of the total number of twice-exceptional students in schools because it does not include youth served under 504 Accommodation plans or those who receive no educational services. A recent study (Barnard-Brak, Johnsen, Hannig, & Wei, 2015) suggested 9.1% of children with disabilities may also have high achievement and/or ability. In their sample of 13,176 students with disabilities, 330 (2.9%) had one or more achievement score in the 90th percentile or higher, yet only 36 (11%) of these students were identified for gifted and talented programming; the percentage was even less for students of color and girls.

Despite a sizeable presence of students with dual exceptionalities in U.S. schools, there remains a dearth of empirical research examining identification of and interventions for students who are

twice-exceptional (Foley-Nicpon, Allmon, Sieck, & Stinson, 2011). Yet, psychologists who work in a wide variety of settings will inevitably encounter high-ability students with disabilities, and familiarity with the nuanced differences high ability brings to striving for psychological health and well-being is worthy of consideration.

HISTORICAL AND CONTEMPORARY PERSPECTIVES

Initial discussions about the possibility of high ability and disability existing in one person are traced back to Hollingworth's 1923 work, *Special Talents and Deficits: Their Significance for Education*. Hollingworth's writings focused on "gifted" students, but she also acknowledged the possible (yet rare) instance where a gifted student could also have an

area of weakness. She stated, “Although we cannot state with precision the frequency with which marked special gifts occur among the stupid [sic], or marked special deficiencies occur among the highly intelligent, we know that such cases are quite rare” (p. 44). In the 1940s two independent physicians, Leo Kanner in the United States and Hans Asperger in Germany, identified traits consistent with what is now referred to as autism spectrum disorder (ASD), with Asperger noting symptoms can manifest in individuals with average to high ability (Pearce, 2005). Over thirty years later, Elkind (1973) published a brief article in *Gifted Child Quarterly* highlighting the needs of gifted children with learning disabilities, which was followed by Maker’s (1977) seminal book, *Providing Programs for the Gifted Handicapped*. These works coincided with landmark national efforts in gifted education policy (Marland, 1972) and special education law (Education for All Handicapped Children Act, 1975; Rehabilitation Act, 1973). These independent efforts laid the groundwork for researchers and practitioners to write about twice-exceptionality in the 1980s and 1990s (e.g., Baum, 1984; Baum & Owen, 1988; Brody & Mills, 1997; Silverman, 1989; Yewchuk & Lupart, 1988), which provided the foundation for contemporary perspectives held today. Others have documented a more detailed history of the twice-exceptional movement (see Baldwin et al., 2015) and how it has evolved over time.

Today, a Google Scholar search using the term *twice-exceptional* will generate over 2,000 results, demonstrating the rapid increase of scholarly writing and interest in the topic. Yet, the research foundation from which educators and psychologists can generate best practices for working with this population continues to be shallow (Foley-Nicpon et al., 2011), and the quality of the extant work is oftentimes questionable (Pfeiffer, 2013). Furthermore, impact outside of gifted education is sparse; few school psychologists and other school-based mental health providers have knowledge about and experience with twice-exceptional learners (Foley-Nicpon, Assouline, & Colangelo, 2013). There are many well-known applied psychologists who are experts in this area (e.g., Assouline & Whiteman, 2011; Neihart, 2000, 2004, 2008; Pfeiffer, 2013; Silverman,

2002), but knowledge and awareness among clinicians without connections to gifted education is scant. To facilitate twice-exceptionality’s entrance into mainstream psychological education, training, and research, it is helpful to ground the phenomenon within an existing theoretical construct. We believe the social–ecological model of psychological intervention (Bronfenbrenner, 1977) is the best fit.

RELEVANT THEORY AND PRINCIPLES

When working with twice-exceptional students, individual differences are important to consider given the wide variability in presentation within this population (Besnoy et al., 2015). However, because of the variety of factors and influences experienced by all students, exploration of interventions within a contextual framework may offer a more holistic approach. For example, in an exploration of high-ability achievers and underachievers, Baker, Bridger, and Evans (1998) contrasted the use of individual factor models compared with a combined model using individual, family, and school factors, and found the combined model best described the impact of underachievement within the high-ability group. This focus on the influence of multiple systems seems closely aligned with the social–ecological model, originally proposed by Bronfenbrenner (1977), which provides guidance in developing interventions to meet the needs of special populations. For twice-exceptional students, the social–ecological model may be particularly useful given the diversity of their abilities and experiences.

According to Bronfenbrenner’s (1977) social–ecological model, all aspects of how an individual relates to his or her environment must be considered to fully understand that individual. This takes place within multiple, sequentially ordered domains. Each domain accounts for certain aspects that may influence a person’s development on some level, from the microsystems of familial relationships to the broader cultural concepts included within the macrosystem (Bronfenbrenner, 1977; Bronfenbrenner & Ceci, 1994). The social–ecological model is heavily dependent on the person’s environmental contexts and the inherent relationships within and across these

contexts (Bronfenbrenner, 1977; Darling, 2007). For instance, the ways in which parents and teachers may work together to provide educational opportunities or services to a student can have a significant impact on the student's future development, despite these individuals occupying two separate microsystems (e.g., home and school; Carter & Murdock, 2001). Therefore, a person's experience often differs greatly on the basis of his or her current environment and the people within that environment. As Darling (2007) stated, an examination of the social-ecological theory requires an understanding of more than simply contextual factors; rather, emphasis on the role of the individual and his or her relationship to each of the stages described by Bronfenbrenner (1977) is equally important. An examination of the social-ecological model found that proximal processes (e.g., actions occurring as a result of relationships within each system) have a greater impact than the context in which this interaction occurs (Ashiabi & O'Neal, 2015). In addition, accounting for the social and historical factors that impact how someone relates and responds to his or her environment provides a richer understanding of the wide range of influences on an individual's development. This model has been useful to describe the environmental features that impact bullying experiences in middle school students with and without specific learning disabilities (e.g., gender, extracurricular activities; Rose, Espelage, Monda-Amaya, Shogren, & Aragon, 2015). An exploration of bullying from the social-ecological perspective allowed for deeper insight into the various interrelationships and needs of students who were bullied (Rose et al., 2015).

For the twice-exceptional student, who may often encounter a lack of understanding or even confusion about personal strengths and weaknesses, the interaction between the student and his or her environment is particularly relevant. The social-ecological model accounts for the wide array of individuals who might interact with twice-exceptional students across multiple contexts, including family members, teachers, school personnel, and mental health professionals. A deeper understanding of these interactions and their influence on the student's development can aid in

creating comprehensive interventions (Darling, 2007). Therefore, extant research regarding psychological and educational interventions for twice-exceptional students is described through this lens so that a comprehensive model of what works with this population can be developed.

RESEARCH REVIEW

Within the broader field of child clinical psychology, there are several empirically validated interventions for a multitude of concerns (see Christophersen & VanScoyoc, 2013; Norcross, Hogan, & Koocher, 2008; Weisz & Kazdin, 2010, for examples). Many, if not most, of these interventions are likely effective with high-ability populations, but experts believe modifications are necessary to account for students' ability and disability identities (Foley-Nicpon, 2009; Mendaglio & Peterson, 2007; Peterson, 2008; Wood, 2010). Far fewer interventions have been developed that specifically target high-ability children with disabilities (Foley-Nicpon et al., 2011). The following review focuses on the extant literature examining interventions with twice-exceptional learners. Findings are presented from a social-ecological perspective such that interventions are reviewed within microsystem and macrosystem domains.

Individually Based Interventions

To date, no researchers have investigated specific individual psychological interventions within twice-exceptional populations. Some have discussed the main issues with which twice-exceptional students struggle and have provided recommendations for interventions on the basis of those hypothesized presenting concerns. For example, Houskamp and colleagues (2013) noted mindfulness could be a useful intervention in light of the executive functioning difficulties experienced by many twice-exceptional children. Teaching mindfulness to twice-exceptional students may provide additional coping skills, especially with regard to emotional regulation and flexibility (Houskamp et al., 2013), and can take many forms, including increasing environmental awareness and developing a practice of observing thoughts. Fornia and Frame (2001) noted gifted children (and possibly more so, twice-exceptional

children) may be prone to perfectionism, asynchronous development, underachievement, and depression, and Foley-Nicpon, Rickels, Assouline, and Richards (2012) discovered gifted students with attention-deficit/hyperactivity disorder (ADHD) have generally lower self-concept and self-esteem than gifted students without a diagnosis of ADHD. However, research-based interventions to address these issues are not yet in existence. Because of the lack of empirical evidence in the individual-intervention domain, psychologists are encouraged to use well-documented interventions from child and adolescent researchers and consider how characteristics of twice-exceptional populations may impact treatment planning. For example, it may be that a twice-exceptional child more easily understands cognitive-behavioral techniques, such as cognitive reframing or diffusion, than a child who is age similar, but not high ability. Therapists may want to consider adjusting their language on the basis of a client's abilities and level of insight (Foley-Nicpon & Assouline, 2015). At the same time, many twice-exceptional students are very slow processors of information, so slowing down the therapeutic process and checking-in to ensure understanding may be required (Foley-Nicpon & Assouline, 2015).

On the basis of extensive clinical and research experience, Mendaglio (1993; Moon, 2007) provided individual and group therapy guidelines for working with twice-exceptional students. Specifically, Mendaglio suggested therapists use structure in therapy sessions, check clients' perceptions of their multiple identities, and use open-ended questions about internal discrepancies regarding their areas of strength and challenge. He indicated group therapy could be a successful way for twice-exceptional students to hear from peers with similar problems, practice social skills, and receive peer feedback about their behaviors and attitudes. Mendaglio recognized therapists should possess patience, tolerance, and understanding of the unique issues facing twice-exceptional students to increase the likelihood for successful outcomes.

Pfeiffer's (2013) four "cornerstones" for therapeutic work with gifted clients are also helpful considerations for twice-exceptional clients. First, Pfeiffer concluded there is no one theory that

properly explains the various social, emotional, and behavioral symptoms observed when a child develops a psychological problem, but there are theories that describe the mechanisms of change that guide the therapeutic process. Operating from one of these therapeutic perspectives is critical for effective practice. Second, Pfeiffer advocated for the social-ecological model—involving parents in the therapeutic process increases the likelihood of a positive outcome. Third, there are ample studies documenting evidence-based practice with almost every diagnostic category in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; American Psychiatric Association, 2013). Although these interventions are not specific to twice-exceptional youth, they should serve as a guide for addressing the difficulties students are facing. Fourth, Pfeiffer argued the therapeutic alliance (e.g., the relationship between therapist and client) is the central mechanism for change. Twice-exceptional clients must fully trust therapists to be open to change and attempt the interventions proposed.

Family-Based Interventions

There are few studies examining specific interventions for high-ability students within the family context. However, the need for family interventions within high-ability and twice-exceptional populations may be particularly salient given their asynchronous development and other features, including a potential for underachievement or depression if underchallenged (Fornia & Frame, 2001). Houskamp and colleagues (2013) noted collaborative problem solving (Greene, Ablon, & Goring, 2003) allows children and parents to work together to identify situations that often result in emotional or behavioral difficulties for the child, and then develop strategies for improved coping during these circumstances. For twice-exceptional students, the opportunity to work closely with adults they trust can be particularly valuable (Houskamp et al., 2013).

One randomized-controlled trial study examined a general parenting intervention, the Group Triple P-Positive Parenting Program, with 75 parents of students identified as gifted (Morawska & Sanders, 2009). The Group Triple P program (Turner,

Markie-Dadds, & Sanders, 2000), which has been shown to have positive effects on the behavior of students with externalizing problems (de Graaf, Speetjens, Smit, de Wolff, & Tavecchio, 2008), was modified for use with gifted students (Morawska & Sanders, 2008). Findings indicated the parents of gifted students demonstrated improvements in parenting style and reported fewer behavior problems and hyperactivity symptoms immediately and at a 6-month postintervention in comparison with wait-list controls (Morawska & Sanders, 2009). These are promising findings and support what others have suggested to be the primary modality for therapy with twice-exceptional students (Moon, 2007; Moon & Hall, 1998), where therapists assist parents to accept and understand the behaviors of students, create supportive home environments, and learn advocacy skills.

Advocacy education is an important consideration for therapists working with families of twice-exceptional students. Parents' struggles to have their child's disability and ability recognized have been documented through case study analyses (Wormald, Rogers, & Vialle, 2015). In an additional qualitative study examining the advocacy experiences of parents of twice-exceptional students, those interviewed described challenges understanding educational systems and difficulty balancing their child's specific needs at home and school (Besnoy et al., 2015). Despite these struggles, parents noted that they realize their important role in providing for their child's unique needs (Neumeister, Yssel, & Burney, 2013; O'Brien & Giovacco-Johnson, 2007). As such, parents of twice-exceptional children may benefit from additional education surrounding their child's rights in the public educational system, as well as opportunities to develop advocacy skills (Besnoy et al., 2015; Neumeister et al., 2013; O'Brien & Giovacco-Johnson, 2007). O'Brien and Giovacco-Johnson (2007) also recommend striving for inclusivity so that twice-exceptional child's disability status does not interfere with social and academic opportunities.

School-Based Interventions

Given where students spend most of their time, understanding school environment dynamics is

central to designing effective interventions for twice-exceptional students. To date, most intervention research has been school-based, potentially because the field is predominantly comprised of educators (Moon, 2007). This research is informative particularly to psychologists who work in educational settings, but also to private practitioners and other child psychologists because the majority of their clients interface with school systems.

One of the common barriers to developing educational interventions for twice-exceptional students relates to the lack of understanding about their specific skills and needs. For example, many twice-exceptional students may have interests that are more typical of chronologically older students, yet also contend with other skill domains that fall at or below what is expected of same-age peers (Chamberlin, Buchanan, & Vercimak, 2007; Neihart, 2008). Considering areas of strength and disability is paramount when developing educational programming for twice-exceptional students; however, focus could be placed on the disability rather than on accommodating students' unique needs within a talent-development framework (Baum, Schader, & Hebert, 2014; Neihart, 2008).

This disability-focused emphasis appears to be common. For instance, researchers (Crim, Hawkins, Ruban, & Johnson, 2008) discovered in their study of over 1,000 students with a specific learning disability that not one was identified for gifted and talented programming, even though over 10% demonstrated high ability. Barnard-Brak and colleagues (2015) noted a similar trend with only 11.1% of their sample of high-ability students with specific learning disabilities participating in talent development opportunities. In their mixed methods study, Willard-Holt, Weber, Morrison, and Horgan (2013) queried a group of twice-exceptional individuals about what they perceived as effective learning strategies. Participants identified having control over their learning and being exposed to complex ideas and ways of thinking about them as beneficial strategies to aid in their learning. They noted increased choice, curriculum flexibility, and exposure to experts and mentors would also be beneficial, but were not commonly used in schools. Flexibility and

learner autonomy were not common characteristics of the general classroom; as Willard-Holt and colleagues (2013) noted, “even with all the progress made in gifted education and special education over the past 15 years, twice-exceptional students still believe that schools are failing to help them reach their potential” (p. 259). How do we change this trend?

One way of increasing academic and social success for twice-exceptional students is to assume a strengths-based perspective. Baum and colleagues (2014) developed the multiple perspectives process model (MPPM), which is a research-based, talent-domain approach specifically for twice-exceptional students to facilitate their social, emotional, and cognitive development. The MPPM works to develop an environment that engages students’ talents on several levels. Baum and colleagues (2014) followed a cohort of twice-exceptional students enrolled at a gifted private school that uses the MPPM. During interviews at graduation, all students within the cohort reported positive changes and growth related to their areas of talent and within their disabilities. The students described an accepting, safe environment where the relationships with teachers helped them develop skills to facilitate growth opportunities at school.

Because models such as MPPM are not always available for twice-exceptional students, classroom teachers may need to creatively develop strategies for accommodating students’ needs. Curriculum compacting, which allows students to work on material at an accelerated rate, may be an effective way for twice-exceptional students to demonstrate their skills while still receiving appropriate instruction related to their disabilities (Winebrenner, 2003), but this has yet to be tested empirically. Winebrenner (2003) also suggested that creating a classroom environment that relies on sensory, experiential learning opportunities can allow twice-exceptional students to develop learning strategies that work. Identification and programming in creative domains may also be promising for twice-exceptional students, especially gifted students with ADHD (Fugate, Zentall, & Gentry, 2013).

Another educational intervention, acceleration, is a strategy that should be considered on

an individual basis and within the context of the students’ social and emotional development (Foley-Nicpon, 2015a; Neihart, 2008), but it too has received limited empirical support. The most comprehensive study (Shultz, 2012) examined twice-exceptional students’ experience in advanced placement (AP) courses. Shultz (2012) indicated school culture and entrance guidelines (flexible criteria for entrance vs. a cut-score grade point average) and school size (smaller schools were more amenable to twice-exceptional student participation) influenced whether twice-exceptional students were successful in AP classrooms. She also noted students needed allocation of accommodations in these settings, but taking AP coursework within the structure of their high schools was helpful with the transition to more independent university settings.

Although attention to talent development is a necessary first step, twice-exceptional students’ areas of difficulty also need attention. School psychologists provide important support when developing interventions for twice-exceptional students (Assouline & Whiteman, 2011), as well as essential consultation with teachers, parents, and students (Robertson et al., 2011). Accurate identification of students’ diagnoses is necessary through comprehensive evaluation so corresponding empirically validated interventions can be identified (Foley-Nicpon & Assouline, 2015).

In addition to educational programming, Neihart (2008) recommends increasing attention to the social and emotional needs of twice-exceptional students in school settings. Many are misunderstood because of the complexity of their needs, and this often results in negative interactions with fellow peers and/or school staff (Reis & Colbert, 2004). In a qualitative study of gifted college students diagnosed with learning disabilities, every participant reported negative memories from their early schooling ranging from negative comments to placement in special education, despite their intellectual strengths (Reis & Colbert, 2004). Other researchers found possessing high intellectual ability, as well as having a disability diagnosis, may be related to increased bullying in school (Hong & Espelage, 2012), but the intersection of these two identities was not examined.

In her recent research summary of the social and emotional development of twice-exceptional students, Foley-Nicpon (2015a) concluded twice-exceptional students have more complex presentations than gifted students without a diagnosis. Social and emotional functioning may improve as the child progresses through school, especially if mental health services are sought; and parents and teachers may report more social and emotional concerns than the students themselves. School mental health providers should focus on the needs of twice-exceptional students to create comprehensive plans that meet their educational and psychological needs, as well as implement strategies such as group counseling and teacher outreach to better support these students (Reis & Colbert, 2004). This can include creating bullying policies and specific teaching units that encourage students to embrace individual differences of all types, including varying ability levels (Winebrenner, 2003).

PRACTICE AND POLICY ISSUES

A consistent theme in the literature suggests twice-exceptionality is not a familiar concept in educational settings (Wormald et al., 2015; Foley-Nicpon et al., 2013). In fact, Foley-Nicpon and colleagues' (2013) national needs assessment results verify professionals outside gifted education have little to no knowledge about twice-exceptional students and limited ideas about how to work with them in classroom and clinical settings. In a study of school psychologists, many reported a low level of training regarding issues surrounding giftedness, especially when giftedness was within the context of twice-exceptionality (Robertson, Pfeiffer, & Taylor, 2011). Furthermore, stereotyped beliefs about what it means to be gifted, or what it means to have an identified behavior problem, are quite different and may lead to misidentification among children who possess both sets of characteristics or identities (Rizza & Morrison, 2003). Are educators willing to see the gifts students possess, even after the disability or disorder is identified (Rizza & Morrison, 2003)? This is an important question because classroom teachers, gifted educators, psychologists and other school

professionals play critical roles in the development of interventions for twice-exceptional students within the school environment.

The social–ecological model of intervention suggests coordination among educational and mental health professionals and families is necessary to create comprehensive plans that meet students' multifaceted needs (Reis et al., 2014; Wormald et al., 2015). These plans are best developed with teams of individuals from students' environments, such as gifted education specialists, general education teachers, special education coordinators, principals, school psychologists, and/or school counselors. This team approach, where multiple disciplines are represented, is often recommended (Foley-Nicpon & Assouline, 2015; Reis et al., 2014; Wormald et al., 2015) but not practiced (Roberts, Pereira, & Knotts, 2015b).

Another level of coordination that can be problematic for twice-exceptional students is among professionals of different disciplines. Psychologists, psychiatrists, or other mental health professionals typically diagnose mental health diagnoses (e.g., ADHD, ASD), whereas talent domains are almost exclusively identified in the schools. These two systems must communicate to meet the needs of a student with a disability and high ability, but often times they do not.

In a recent study (Roberts et al., 2015a, 2015b), 42 state special and gifted education administrators were asked about their state's gifted and special education legislation and policy. Information from these interviews, as well as a review of policy and state law documents, revealed twice-exceptionality was included in only 11 of the 30 reviewed states' gifted education legislation, and only seven of the 46 reviewed states' special education legislation. Furthermore, gifted and special education department administrators typically did not know each other's basic responsibilities associated with twice-exceptional learners. Roberts and colleagues (2015b) identified Colorado, Pennsylvania, and North Carolina as states with initiatives specifically for twice-exceptional learners that can serve as models for the rest of the country. Only through collaborative efforts across disciplines will the intervention needs of twice-exceptional learners be met.

MULTICULTURAL AND DIVERSITY CONSIDERATIONS

When developing interventions for twice-exceptional youth, multicultural considerations are an important part of the planning process, particularly within the social–ecological model. Yet, the historical foundation for this approach is new; in the United States, diversity was not an important part of education until the latter half of the 20th century (Stambach & Bal, 2010). As multicultural factors were more widely explored in the classroom, educators simultaneously began to focus on providing access to education for students of all ability levels (Stambach & Bal, 2010), giving rise to legislation providing educational accommodations for all students. Currently, this federal provision only extends to disability services, which means gifted programming is left up to individual states or districts (Zirkel, 2004).

Additional disparities in the allocation of students to special education or gifted education programs suggest twice-exceptional students from diverse backgrounds might experience particular difficulties in obtaining specific individualized educational programming. Culturally diverse students are often underrepresented in gifted programs, yet overrepresented in special education programs (Artiles, Harry, Reschly, & Chinn, 2002; Lovett, 2013). The use of traditional standardized measures (e.g., IQ tests) may not always identify gifted students of diverse backgrounds because of lack of language proficiency or other cultural differences (Howley, Rhodes, & Beall, 2009). Additionally, teachers may identify certain behaviors as necessitating special education services without similar considerations to other abilities. This difference may be more pronounced for twice-exceptional students given the limitations sometimes observed on standardized testing within this population, which may only widen the gap between individuals able to seek out services and those who cannot (Lovett, 2013).

Access to services depends not only on identification of students, but often also on location. For example, gifted and talented programs are more prevalent in schools where students are predominantly upper-middle class (Kettler, Russell, &

Puryear, 2015). High-ability students in rural communities often encounter a range of barriers that impede their participation in gifted programming, including smaller class sizes, below average funding, and fewer course options (Howley et al., 2009; Kettler et al., 2015). Kettler et al.'s (2015) study of Texas school districts found that rural location, low enrollments, and higher numbers of students participating in free/reduced lunch programs all predicted decreased funding for gifted and talented programming and staffing. Students in rural communities also experience greater rates of poverty, which has implications for participation in programs with additional costs and increased challenges related to identification of students (Howley et al., 2009). Because there often are fewer resources available for their students, the focus tends to be more on remediation of students falling behind rather than enrichment (Howley et al., 2009). For twice-exceptional students, this becomes particularly problematic because increased attention may be placed on remediation of learning concerns rather than a dual focus on providing interventions for their gifts and areas of difficulty.

The contextual implications of diversity are often overlooked, but must be considered to provide culturally sensitive and appropriate interventions for all twice-exceptional students (Stambach & Bal, 2010). Families with diverse backgrounds often use services in different ways (Gersten & Woodward, 1994) or at lower rates (Wilder, Dyches, Obiakor, & Algozzine, 2004) in comparison with nonminority families, instead turning to other family members or friends to provide support for a child's disability. Successful navigation of the educational system can be challenging for many families of students with different needs, and providing information about services in a way that bridges these gaps may make them more useful for diverse students.

Cultural variables can greatly impact a family's understanding of a psychological diagnosis and the implications for their child. For instance, language barriers may impede parents' understanding the educational rights provided to children with disabilities (Halley & Trujillo, 2013). Furthermore, Wilder and colleagues (2004) noted that not only do many cultures view psychological disorders such as ASD

with a different understanding than that of majority populations in the United States, but also they may not have words within their language to describe ASD and its characteristics. Ensuring parents are equipped to understand their child's diagnosis and needs often is the first step toward developing appropriate interventions within a culturally sensitive context.

The role of educational supports and postschool plans often vary widely from culture to culture, especially when considering the disability needs of students. Halley and Trujillo (2013) stated clients from diverse backgrounds may not only have dissimilar conceptualizations of what it means to have a disability, but also value different educational supports, especially with regards to transition planning. In many Western cultures, increased independence and self-sufficiency may be the goal of an individualized education plan, whereas in more collectivist cultures these expectations may be less important to the successful transition of a student with disabilities (Halley & Trujillo, 2013). Often, teachers of twice-exceptional students benefit from additional education about the needs of their students, especially when other multicultural factors are at play. For example, Wilder and colleagues (2004) reported teachers often establish low expectations for students diagnosed with ASD, rather than attempting to provide challenges appropriate to their ability levels. For twice-exceptional students diagnosed with ASD (and other disabilities), this could be especially detrimental given the lack of attention paid to their areas of talent. Halley and Trujillo suggested several strategies for improving transition planning with diverse students and their families, including the use of informal supports within the greater community, providing ways educators can increase their cultural competence, and increasing opportunities for all parents to be involved in students' educational planning, not just those who can attend designated meeting times.

FUTURE CONSIDERATIONS AND DIRECTIONS

As was noted throughout this chapter, research establishing empirically validated interventions

with twice-exceptional populations is scant, but this should not be overly disheartening to the reader. Twice-exceptionality has become a topic of interest only in the past few decades, whereas general child psychology has a solid theoretical and research foundation. Much of what we know about psychological interventions with children and adolescents are likely applicable to high-ability youth, as long as practitioners are mindful of the characteristics of high ability that may impact treatment delivery and outcomes. Furthermore, increased knowledge about and interest in twice-exceptional populations will only serve to deepen the research base. However, focus should be on the quality of the research methodology so more definitive statements about effectiveness can be made. For example, researchers should use methods such as inclusion of comparison groups (high-ability students without a diagnosis, and/or average-ability students with a mental health diagnosis) and/or randomized-control trials, use of nonclinical samples, or longitudinal designs where students are followed over time. These methods are reflective of best practice, but designing and implementing studies with twice-exceptional populations are easier said than done.

One problem is the low incidence rate. It is quite challenging to obtain large sample sizes when a phenomenon is not common in general populations. Studies are conducted in clinical settings that may or may not be generalizable. Even in clinical settings, a researcher may design a randomized-control trial for a social skills intervention for gifted students with ASD but not have enough participants to detect significant gains, if they do indeed exist. One method occasionally used is the examination of a subset of high-ability students within a larger sample of the phenomenon in question. For example, Antshel and colleagues (2007) studied high ability within a subset of the larger Massachusetts General Hospital Longitudinal Family Studies of ADHD. McCallum and colleagues (2013) examined gifted students with learning disabilities within a larger sample of response to intervention data for all students in a particular region. This strategy has promise for researchers who have access to larger samples and a specific interest in high-ability students with disabilities.

SUMMARY AND CONCLUSIONS

Increasingly, researchers and practitioners are aware of the unique characteristics exhibited among twice-exceptional students. These students interface with family, school, mental health, and cultural contexts that influence their social, emotional, and behavioral presentation, making the social–ecological framework the best theoretical foundation from which to understand and investigate the population. The social–ecological model for twice-exceptional children may mean considering the interplay between gifted education and special education specialists, mental health practitioners seen outside of school, and children’s parents and family. Open communication and partnership among these systems will inevitably lead to better meeting students’ complex needs than if the systems do not positively interact.

A review of the research examining psychological interventions with twice-exceptional students revealed there are few empirical studies examining individual- and family-based interventions. However, as Pfeiffer (2013) noted, there is ample evidence documenting empirically based interventions in many psychological domains, and the savvy clinician should consider these techniques in light of a child’s twice-exceptional identity. There is a greater body of research investigating school-based strategies, and most results point to assuming a strengths-based perspective, as well as the need to focus on psychosocial factors that impact performance. Additionally, comprehensive assessment is recommended to determine students’ unique profile of abilities and areas for growth.

Though twice-exceptional children and adolescents are gradually becoming a focus of psychological and educational research, experts in the field are called on to expand their reach. The concept of twice-exceptionality remains largely unknown outside of gifted education, and efforts to expand knowledge, awareness, and skills for effectively working with this population are needed for a larger impact to be realized. It is also necessary to expand work with culturally, ethnically, and socioeconomically diverse groups. The future of the field depends on quality research designs with diverse populations to disseminate empirically valid interventions specific for

twice-exceptional youth. We are encouraged to identify interventions that poise twice-exceptional children and adolescents to become happy, well-adjusted adults who are soaring in their talent domains.

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