

Twice-Exceptional Education: Connecting Gifted and Special Education



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INTRODUCTION

Blooming Beyond Barriers: Nurturing Twice-Exceptional Learners

C. Matthew Fugate

Adam is a highly gifted student with a passion for science but struggles with dyslexia, which affects his reading and writing abilities. Despite his enthusiasm for learning, he often feels frustrated and misunderstood in a traditional classroom setting. Sophia is an artistically gifted student who experiences social anxiety, making it difficult for her to participate in group activities and presentations. Her teachers regularly misinterpret her reluctance as disinterest or a lack of understanding of the concepts being taught. Liam excels in mathematics and has a keen interest in technology but struggles with attention deficit hyperactivity disorder (ADHD). These students are twice-exceptional (2e).

The field of twice-exceptional education has grown significantly in recent years with a renewed dedication to understanding and meeting the needs of neurodiverse gifted students who have learning and/or behavioral differences that can affect their academic and social emotional growth and development. These unique learners present a duality of potential and complexity that makes it difficult for them to fit neatly into either gifted or special education programs, requiring educators to adopt innovative and nuanced approaches to teaching and support (Foley-Nicpon, 2013). My own work in this field has focused on raising awareness of the unique needs of our twice-exceptional population to develop educational

practices that recognize and nurture their strengths while addressing their challenges. Through research and collaboration with other educators and specialists, I have advocated for a more integrated approach to twice-exceptional education, one that considers the whole child and creates learning environments where these neurodiverse students can thrive. Just as a trellis supports a plant to grow and flourish, we need frameworks in place to provide the necessary supports and opportunities for these students. This allows them to blossom, showcasing their unique talents and achieving their full potential.

The Garden of Potential: The Need for Identification

Understanding the characteristics that distinguish 2e students from those who underachieve for other reasons is vital for determining appropriate educational support. While both groups may struggle with academic performance, twice-exceptional students possess exceptional abilities (e.g., advanced problem-solving skills; creativity; deep passion for specific subject) along with learning challenges (e.g., attention deficits; processing disorders; emotional sensitivities). By differentiating between 2e students and underachievers, educators can

Twice-exceptional students are not underachieving.

develop targeted interventions that leverage the strengths of twice-exceptional students while addressing their specific challenges. This dual-focused approach ensures that 2e students are not only supported in overcoming their difficulties but are also encouraged to explore and develop their talents.

Identifying twice-exceptional students is essential to ensure that these students are provided with the tailored educational supports that they require. In many traditional educational settings, twice-exceptional students often remain under-identified due to the intersection of their exceptional abilities and their learning challenges (Fugate et al., 2020). This can often be attributed to the masking effect which can present in multiple ways – giftedness can mask learning disabilities; difficulties may obscure the student's extraordinary talents; or the student's gifts and their challenges masks each other and as such they present as average or just slightly below average. As a result, their needs often go unmet, resulting in feelings of isolation and frustration due to the mismatch between their abilities and challenges (Baum et al., 2017). The intricacies of identifying 2e students must be fully understood and underscores the necessity for early and accurate assessment. Without proper identification, twice-exceptional students risk underachievement, frustration, and disengagement, thereby preventing them from reaching their full potential.

As such, effective identification requires a multiple pathways approach that considers various aspects of a student's performance and behavior. This includes the use of assessments that capture both cognitive strengths and areas of difficulty, and may include observations from teachers and parents, as well as self-reports and portfolios from the students themselves. Understanding the complex profiles of twice-exceptional students allows educators to craft personalized educational plans that nurture their strengths and support their needs.

Master Gardeners: The Need for Educator Professional Learning

Once identified, twice-exceptional students benefit from educators who understand their unique profiles and possess the skills to support them effectively. The traditional educational environment often fails to address the dual nature of these students, creating the need for a paradigm shift in teaching methodologies and classroom management strategies. Teachers knowledgeable about twice-exceptional education create inclusive and supportive environments that foster these students' growth and development.

Professional learning and training programs focused on the nature and needs of twice-exceptional learners are essential for equipping teachers with vital skills and knowledge. This includes understanding the characteristics of twice-exceptional students, employing dual differentiated instruction techniques that support their strengths as well as their areas of challenge, and fostering a classroom culture that celebrates diversity in learning. Specifically, professional learning goals for educators of twice-exceptional students should include:

- *Recognizing the characteristics of twice exceptionality:* Teachers should be trained to identify the characteristics of twice-exceptional students, which can vary widely but often include asynchronous development, intense curiosity, and uneven academic performance. Early identification is crucial to providing appropriate support.
- *Nurturing strengths:* Focusing on students' strengths and interests can motivate and engage 2e learners, helping them to build confidence and resilience. Teachers should provide opportunities for enrichment and challenge that align with students' abilities.
- *Differentiating instruction:* Twice-exceptional students benefit from differentiated instruction that is tailored to both their

individual needs and strengths. This might include modifications in content, process, or product, as well as accommodations such as extended time or alternative assessment methods.

- *Providing social-emotional support:* Understanding the emotional and social challenges faced by 2e students is essential. Teachers should create a supportive classroom climate that fosters a sense of belonging and encourages students to express their feelings and seek help when needed.
- *Collaborating with specialists and families:* Collaboration between special education professionals, gifted education specialists, and families is key to developing comprehensive support plans for 2e students. This collaborative approach guarantees that every facet of the student's requirements is thoroughly addressed.

By prioritizing educator professional learning, schools can ensure that 2e students receive the support and opportunities needed to excel academically and personally.

Cultivating Potential: Charting a Path Forward

Luckily for the students that I introduced first, teachers trained in twice exceptionality intervened to make a difference in their individual educational journeys. Adam's 5th grade science teacher provided him with customized learning materials and experiences that allowed him to excel in science while also supporting his literacy needs. Likewise, Sophia's art teacher created a supportive environment with alternative ways that she could express her talents. As a result, she now thrives both artistically and socially. For Liam, a teacher who understood his need for structured routines provided him with engaging, hands-on projects

that captured his interests and channeled his energy in a positive manner.

Twice-exceptional education requires a nuanced understanding of both giftedness and disabilities. In this first section, the authors outline a comprehensive framework for twice exceptional education, emphasizing the need for identification, the importance of knowledgeable teachers, and the implementation of tailored educational practices. By drawing from the dual perspectives of gifted education and special education, the goal is to empower teachers and help them create effective, supportive, strength-focused learning environments. Establishing a framework for twice-exceptional education is essential for supporting the diverse needs of our neurodiverse students. By prioritizing identification, equipping teachers with the necessary skills, and understanding the distinct characteristics of 2e students, educators can create inclusive environments that nurture the potential of these exceptional learners. Much like planting a seed in fertile soil and providing it with the right conditions to grow, we must cultivate the potential of twice-exceptional students by identifying their unique needs and fostering an environment where they can thrive. As we nurture these young minds, we must continually tend to their growth, ensuring they have the support and guidance needed to flourish and reach new heights.

The stories of Adam, Sophia, and Liam illustrate the complexities of twice-exceptional learners—students whose remarkable abilities are often overshadowed by their learning challenges. Just as a thriving garden requires careful tending, so too must educators cultivate an environment that recognizes and nurtures both the strengths and needs of 2e students. The chapters that follow provide a structured framework for this process, beginning with an exploration of the historical and conceptual foundations of twice-exceptional education. From defining 2e learners and understanding

the intersection of gifted and special education to applying research-based teaching strategies within sample lesson plans and considering the broader ecological and policy implications, this book equips educators with the knowledge and tools necessary to foster the success of neurodiverse students. By integrating perspectives from both fields, we can create learning environments that not only accommodate but truly celebrate the unique potential of twice-exceptional learners by focusing on the development of their strengths.

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SECTION 1

Seedlings: History and Foundation of the Trellis and Blossom Model



Seedlings planted in fertile soil, growing in diverse ways, symbolize the theme of Section I. This imagery reflects the early stages and foundation of twice-exceptional (2e) education. Just as seedlings sprout and develop uniquely, the field of 2e education grew from the recognition of learners whose exceptional abilities and learning challenges intersect in complex ways.

In this section, we lay the groundwork for understanding twice-exceptional education by examining its history, the evolution of its definition, and the foundational contributions drawn from both gifted education and special education. Teaching students with both extraordinary strengths and significant challenges demands a deep understanding of how these two fields intertwine.

- Chapter 1 traces the history of 2e education, highlighting key figures, policy developments, and teacher preparation efforts.
- Chapter 2 defines twice-exceptionality, outlining characteristics and challenges.
- Chapter 3 analyzes the connection between special and gifted education.
- Chapter 4 explores how special education practices support 2e learners.
- Chapter 5 explores how gifted education practices support 2e learners.
- Chapter 6 presents the Trellis and Blossom model, a conceptual framework that connects both special and gifted education practices.

Chapter 1

Planting the Seeds: The Origins and Growth of Twice-Exceptional Education

Chapter 1 presents the foundational conversations that shaped the field of twice-exceptional education. In this collection of essays, we bring together voices from some of the pioneers whose insights and advocacy laid the groundwork for how we understand and support twice-exceptional learners today. Of course, this is an incomplete collection—capturing the full breadth of those who have influenced the field would require a book of its own. Still, we hope these reflections offer a glimpse of their journeys, including the challenges, discoveries, and unwavering commitment that have defined this work. This book stands at the intersection of gifted education and special education, blending the best of both fields to create a more complete approach to supporting twice-exceptional learners. As we look back on these contributions, we also look forward to the evolving dialogue and continued progress in ensuring that twice-exceptional students receive the education they deserve.

What Did I Learn About Twice-Exceptionality?

C. June Maker

In 1975, when I was an intern in the newly-created Office of Gifted and Talented, I worked with a man who had a very interesting educational experience. When he was in grade 2, he was diagnosed as mentally retarded because he couldn't read. His parents, who thought the school officials were the experts, did not think of telling them he had made his own telescope before going to school, and that he was always doing experiments with his mother's plants. No one noticed or even checked his reading skills. He could read if the book was held in front of a mirror! He progressed through school, continuing to be considered mentally retarded even though he started reading in the appropriate way by the time he was 13. When he was a senior in high school, he convinced his father to talk to the principal to allow him to take physics. The principal's first response was that he had failed general math. His father then said, "So what will it hurt to let him take physics?" Fortunately, the principal agreed. To everyone's surprise, he earned the highest grade in the class! He then had the courage to take the Miller Analogy Test (MAT) which was one of the college entrance exams at the time. His score was the highest I have ever seen! I started thinking how many others were inappropriately diagnosed as mentally retarded when they had a disability that "masked" their giftedness or special talents. I was able to find 30 successful individuals with various disabilities who were willing to

be interviewed about their experiences and received a contract to publish a book entitled *Providing Programs for the Gifted Handicapped* through the Council for Exceptional Children.

People started inviting me to speak at various meetings. At one of them, I said I wanted to continue these interviews. A woman from the American Association for Advancement of Science (AAAS) came up to me after my speech and said in her project on the handicapped in science, she had more than 900 successful scientists with disabilities who indicated they were interested in participating in research. Together, we selected 200 who were disabled at birth or before the age of 12 (so they were in school with the disability). The grant we received provided funding for a graduate student to assist me (a doctoral student) in conducting the interviews and analyzing the data for my dissertation. Complete results of those interviews were published in my dissertation and selected results were published in other publications.

What Practices Would I Now Recommend?

My journey began by interviewing nearly 300 successful professionals with significant challenges, called disabilities. I asked about significant events and people, and after analyzing their experiences and perceptions,

***...the key to their
success was creative
problem-solving ability.***

I concluded the key to their success was creative problem-solving ability. They met challenges, maneuvered around them, and/or used understanding of themselves to modify their personal goals and career expectations. If they could become successful, I concluded that a focus on creative problem solving would benefit not only individuals with different types of significant challenges but also those whose challenges are easier to meet and overcome—everyone could benefit!

Strength and Interest-Based Learning

The basis for learning needs to be (a) recognizing and nurturing strengths; and (b) honoring, respecting, and developing interests. Twice exceptional students, like all of us, have peaks (abilities/talents) and valleys (challenges), things they love to do, and things they do not love to do. They are extreme examples of all of us: their peaks and valleys are farther apart.

My research and this understanding led to thinking, research, and practice focused on creating, field-testing, and using assessments of varied abilities, mainly in performance-based, active settings. Using Gardner's theory of MI, we created assessments of school-related abilities, and over the years, based on observations and data-based research, added other talents, resulting in a model with 10 abilities. All can be assessed, and talent profiles created showing levels of ability in each, with a line showing the average of students assessed in the same classroom or group. Indicators of motivation and enjoyment are observed and documented.

Educators, students, parents, care-givers, psychologists, and others are given this profile, along with recommendations for building strengths for their own sake and developing weaknesses through strengths.

Principles for Talent Development in Action: A Successful Teaching Model for All Students

The Real Engagement in Active Problem Solving (REAPS) model is based on these underlying ideas, combined with research and practice based on Principles for Talent Development (often called curriculum differentiation principles). It can be used in all classrooms with all students to integrate talent development principles using a strengths- and interests-based philosophy. REAPS is an integration of four evidence-based teaching approaches: Problem Based Learning (PBL), Discovering Intellectual Strengths and Capabilities while Observing Varied Ethnic Responses (DISCOVER), Thinking Actively in a Social Context (TASC), and the Prism of Learning.

Engagement is the key to learning. If students are engaged, they learn what we are teaching! Research has shown that two interdependent key ingredients are necessary for engagement: relevance and interest. The REAPS model, as its name implies, is a way to engage students in solving real-world problems of interest to them using models with a focus on problem solving. REAPS is an important way to develop the 21st Century skills of creativity, critical thinking, collaboration, and communication, so all students can use their talents wisely.

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