

LIVED EXPERIENCES OF TWICE-EXCEPTIONAL STUDENTS AND THEIR FAMILIES

**Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic
Stress in Learning Environments**

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Dedication

I dedicate this study to the families who bravely participated in it. These extraordinary twice-exceptional participants, parents, and siblings offered meaningful insight to build much-needed awareness and shared understanding around the difficulties families face. I hope this representation of their stories will disrupt the ongoing marginalization of twice-exceptional students in schools and end the era of neurodiverse students as outliers, to begin a new day, where every precious student is considered a masterpiece worthy of support, just as they are.

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Abstract

When access to needed resources and a psychologically safe learning environment are contingent upon a twice-exceptional student's ability or inability to change, they are devalued and marginalized. The unique stories and dignity of twice-exceptional students are often dismissed as school experiences become riddled with misunderstanding, underachievement, and suffering. These students and their families navigate the unique and murky waters of giftedness and learning differences, feeling unsupported as they endure the intensities of living in survival mode for prolonged periods of time. The impact of these stressful experiences can be profound for the student and their families.

This qualitative study was designed to explore and describe the stress associated with the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. The investigation included perspectives of the student, their parents, and their siblings. Delving into their stories revealed the effects of struggling to learn and not reaching potential in and out of school with particular attention paid to environments that fuel an anxious existence and underachievement.

The purpose of this study was to bring attention to the significant adverse impact of toxic stress and resulting educational trauma on twice-exceptional students and their families by capturing and conveying their stories. The proposed method for data collection was case study research consisting of student, parent, and sibling questionnaires followed by semi-structured interviews. The intended impact of this study was to illuminate the intersection of stress and learning, and the following themes emerged: issues with access to appropriate learning environments; difficult lived experiences of family members; and influence of experiences on emotional, behavioral, social, and mental health.

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Chapter 1: Introduction to the Study

This qualitative case study examined the lived experiences and effects of toxic stress in learning environments for five twice-exceptional students and their families. As schools of all types across the United States claim commitment to helping every student succeed, learning environments often fall short and even marginalize and cause harm for high-ability students who also contend with learning difficulties. This research is meant to illuminate the gaps between what twice-exceptional students and their families experience on the learning journey and the efforts of schools aiming to help every student succeed. This chapter provides an overview of the topic, rationale for the study, significance and potential benefits of the research, and definitions of key terms.

Every student deserves a psychologically safe learning environment in which they can think and learn without pressure to change or “fix” themselves. Yet it is common for parents of twice-exceptional students, those who exhibit high ability and learning differences or disabilities, to have difficulty finding such environments for their child. Parents may understand that their child is twice-exceptional but quickly become aware that fostering their child’s gifts while supporting their learning needs can be daunting for educators and school systems.

“Twice-exceptional”, also referred to as “2e”, is a term used to describe children who exhibit gifted characteristics and evidence of learning differences, disabilities, or social emotional developmental delays (Baum et al., 2017). Implications for how psychologically-based diagnosis of disabilities and their connections to appropriate interventions in educational settings are complex because diagnoses are determined by psychologists using clinical diagnostic manuals while intervention strategies and funding for such interventions are determined by education legislation (Assouline et al., 2011).

It is common for families with twice-exceptional children to exhaust educational options

while their children find themselves viewed as “irksome” (Baum, et. al., 2017) by educators. Not fitting into or thriving in traditional school models, which typically focus on “fixing” how twice-exceptional students operate and learn rather than providing them with support to develop their talents and abilities, can “compromise students’ motivation, academic self-efficacy, and self-esteem” (Baum, et. al., 2017, p. 159) and result in toxic stress and traumatic experiences.

While many schools and educators strive to work with twice-exceptional students and their families, the stories of pain, suffering and damage continue to surface. In response to growing concern about students’ anxiety and trauma, trauma-informed schools are adopting models designed to integrate prevention efforts and “represent an opportune system for prevention and early intervention across domains related to child success” (Chafouleas et al., 2016, p. 3). These models form a first point for intervention and focus for removing, minimizing, or neutralizing exposure to traumatic experiences (Chafouleas et al., 2018); however, exploration into traumatic experiences that occur during or as a result of the learning process are not commonly included.

Although those in control of educational environments may not feel positioned to understand or honor every student’s unique story and learning profile, general consensus that no student should be marginalized, disadvantaged, or psychologically vulnerable in the classroom is shared. As diversity, equity, and inclusion (DEI) efforts become integrated into how our schools operate and serve, twice-exceptional students surely should be included.

Rationale for Selecting the Topic

The purpose of this study stems from a personal interest in a critical issue that is often experienced by the community of parents with twice-exceptional children. Often struggling to understand the complexities of their bright, creative, and challenged child, these parents find it frustrating to successfully develop advocacy strategies to address a child’s difficulties in school

while protecting their giftedness (Besnoy, 2015).

Many reasons account for the lack of proper attention to the unique needs of twice exceptional students. Among them are the fact that disabilities are most commonly diagnosed by clinical and counseling professionals who employ a “noneducational system of determining presence of various disability characteristics” (Foley-Nicpon et al., 2013, p. 170) and that no universal definition or educational programming format for gifted students exists (Foley-Nicpon et al., 2013). For twice exceptional learners, a learning environment with ineffective instruction and unrealistic expectations is particularly problematic. According to a study by Dole (2000, as cited in Barber, 2011), twice-exceptional students often “possess poor self-concept, poor self-efficacy, hypersensitivity, emotional lability, and high levels of frustration, anxiety, and self-criticism” (p. 112), which makes missing out on successful school experiences, or worse yet, enduring negative school experiences problematic.

In traditional learning environments, there are “students who suffer . . . because they cannot conform to what is expected even though they have the capacity to contribute in exceptional ways” (Baum, 2017, p. 1). Because behaviors that do not meet expectations in school often dominate the attention paid to twice-exceptional students, opportunities to develop strengths, talents, and abilities can be in short supply. As Maslow describes in his hierarchy of needs, unmet needs influence a person’s behavior (1943). His hierarchy includes not only physiological and safety needs, but also love and belonging, and esteem and self-actualization. In a paper read before the Symposium on Research Implications of Positive Mental Health in 1960, Maslow shared that “to the extent that we try to master the environment or be effective with it, to that extent do we cut the possibility of full, objective, detached, noninterfering cognition. Only if we let it be, can we perceive fully” (Maslow, 1960, pp. 5-6).

Plato is credited with the pronouncement that what is honored in a culture will be

cultivated there (Plato, ca. 375 B.C.E./1943). When the unique blend of giftedness and learning disabilities in the twice-exceptional learner is not honored or acknowledged in the classroom, gifts are not cultivated and a student's limits can be tested.

Statement of the Problem

Mission statements of schools across the United States commonly include a commitment to helping every student succeed; however, the learning environments themselves may not meet the basic needs of all students. According to the paper published by the National Scientific Council on the Developing Child (2005/2014), "healthy development can be derailed by excessive or prolonged activation of stress response systems in the body and the brain" (p. 1), and a significant body of neuroscience research indicates toxic stress interferes with the brain's ability to function properly. While mild forms of stress can facilitate improvement in cognitive function, "too much stress has an adverse effect" (Yaribeygi et al. 2017, p. 1061). Yaribeygi et al. argue "if the intensity of the stress passes beyond a predetermined threshold (which is different for each individual), it causes cognitive disorders, especially in memory and judgment" and produces major effects on the "primary physiological systems" of the body (p. 1057). For twice-exceptional students, learning environments can be incongruent with their nervous system and generate prolonged activation of stress response systems. When operating in stress-enhanced mode, the students' basic need for safety is jeopardized, their internal resources needed for learning are redirected for coping and survival, and they are left at risk for the onset of mental and physical illness. Many school systems and educators do not have access to available information related to this topic. It is important for educators, parents, and students to know that stress affects people differently and generalizations about appropriate responses are shortsighted. Also worthy of attention is the significant role strengths and talent development play in these efforts as they often are overlooked as essential to success and well being, and their dismissal can

be detrimental. Levine (2002) explains “neglected or suppressed strengths are like infections under the skin; eventually they cause serious damage” (p. 300).

In this study, I aim to capture and convey the lived experiences of twice-exceptional students who faced adversity in school in an attempt to understand if prolonged activation of stress responses within learning environments contributed to their social, emotional and academic difficulties.

Significance of the Research

Studies suggest the consequences of adverse experiences early in life, which have enduring effects (Herzog & Schmahl, 2018). Treating students as if their minds, bodies, and emotions are not connected is problematic given evidence from epidemiological and neurological studies that suggest “adverse experiences to be closely related to enduring brain dysfunctions that, in turn, affect physical and mental health throughout the lifespan” (Herzog & Schmahl, 2018, p. 2). Herzog and Schmahl (2018) state that studies exploring complex characteristics related to adverse childhood experiences over periods of time are needed if understanding and innovative treatment approaches are to develop for related mental health and somatic disorders.

Gabor Mate’ (2003) advocates examining the links between emotions, stress, and physiology as a powerful tool for understanding the sources and effects of trauma. His research has led him to believe that humans have one “super-system” wired together to manage emotional centers, neurological pathways, hormonal glands and immune responses; the systems are thought to influence each other. He proposes one system cannot be isolated from another but rather they must work in concert, and when left unaddressed, stress can result in trauma that causes significant damage to both the body and mind.

In the 2021 film *Wisdom of Trauma* (Benazzo & Benazzo), Mate’ explores stress as the

body's response to any loss or threat, real or perceived, that affects the entire body. With regard to schools, he shares they are full of kids with trauma-based learning disabilities and mental health issues who work with teachers who have not learned about trauma. Struggling students often learn their authentic selves are not accepted in the learning environment, and their fundamental need for connection to others and connection to themselves is jeopardized. Mate' asserts trauma isn't about the things that happen to a person but rather what happens inside of that person as a result of the things that happen to them.

Widely studied sources of adverse experiences in childhood and adolescence revolve around stress and how such stress is processed by the body. The most prevalent and understood sources of such stress include exposure to violence; sexual, physical, and emotional abuse or neglect; and divorce/marital conflict (Herzog & Schmahl, 2018). Building upon the foundation laid by such research, researchers are positioned to explore toxic stress experienced in other settings, such as schools. This essential research could help identify opportunities to bridge related gaps between a student's lived experience and the perceptions of those managing the student's learning environments.

Potential Benefits of the Research

Some authors assert school experiences are causing trauma, and not addressing the causes is a form of social injustice to specific populations of learners (Gaffney, 2019). To address these growing concerns and to identify how school events and cultures are experienced by twice-exceptional students, their stories must be offered as a critical perspective on the sources and prevalence of such adversity experienced in school. The resulting stress on the family also is of significant importance. Specifically, I identify common issues and themes across cases with the purpose of advancing communications between teachers, parents and students. Research findings also may help to legitimize and communicate the significance of toxic stress

experienced in school as well as its resulting effects on the students' minds and bodies.

Connecting lived school experiences with what is known about stress and trauma can advance the conversation toward protecting all students, including the twice-exceptional, from psychologically unsafe learning environments.

Definition of Key Terms

Because terms vary within contexts, understanding how key terms of this proposed study are defined is important to the context of this research. For the purposes of this study, these operational definitions are used:

1. *Twice-Exceptional*: This term has been described as a student who has characteristics related to giftedness while simultaneously exhibiting characteristics associated with learning disabilities (Baum et al., 2017).
2. *Stress*: This term has been described as “any intrinsic or extrinsic stimulus that evokes a biological response” (Yaribeygi et al., 2017, p. 1057).
3. *Toxic Stress*: This term has been described as prolonged exposure to any negative “intrinsic or extrinsic stimulus that evokes a biological response” (Yaribeygi et al., 2017, p. 1057).
4. *Trauma*: This term has been described as becoming overwhelmed with an inability to cope with what is experienced (National Center on Early Childhood Health and Wellness, 2021).

In summary, psychologically safe learning environments and access to appropriate learning and support resources are essential for all students. When any of these elements are missing, especially over long periods of time, the resulting impact of stress and trauma extend beyond the moment and into the lives of students and their families. Many twice-exceptional students and their families remain unsupported despite our collective understanding of such basic

human needs, and by sharing their stories through this study I draw attention to this marginalization and disrupt the status quo.

Chapter 2: Review of Literature

The literature review explores research relevant to twice-exceptional students in learning environments, the impact of stress and trauma on learning and health, and signs and effects of adverse childhood experiences. In addition, Cognitive Activation Theory of Stress, Polyvagal Theory, and the Window of Tolerance are reviewed as relevant theoretical frameworks and concepts. These studies and research provide a background for understanding prolonged activation of stress responses within learning environments and support findings related to social, emotional and academic difficulties.

Twice-exceptional Students

Twice-exceptional students are unique because they are both gifted and have one or more disabilities (Moon & Reis, 2004). They often exhibit a jagged profile of academic abilities (Baum et al., 2017). An example is a twice-exceptional fifth grader who may read at a college level but write at a third grade level or excel in certain learning environments yet be unable to function in others. For some 2e students, organization, class participation, and planning challenge them to the point that they fall behind, experience inconsistent academic performance, struggle with expression, emotions and social interaction, and spend much of their time frustrated (Baum et al., 2017). Although a wide range of profiles exist within the twice-exceptional population, giftedness with attention deficit hyperactive disorder (ADHD), autism spectrum disorder (ASD), and specific learning disabilities (SLDs) are most commonly explored (Foley-Nicpon et al., 2011).

As their advanced abilities in some areas collide with their failure to meet expectations in others, their educational journeys often become riddled with difficulties as traditional methods for teaching and learning clash with their learning profiles (Assouline & Whitman, 2011; Baum et al., 2014; Reis et al., 2014). These students often are labeled as lazy and unmotivated and

become known as underachievers (National Association for Gifted Children, 2021) while their need for educational programs and services that address both their academic and emotional development are overlooked (Moon & Reis, 2004). Twice-exceptional students often are very motivated and crave opportunities to pursue learning and gain new knowledge (Willard et al., 2013).

There is no single psycho-educational profile for twice-exceptionality and no single method for identification (Foley-Nicpon et al., 2011). Furthermore, the tendency to focus on academic performance as the indicator of ability and disability does not allow for varying profiles of twice-exceptional students when it comes to academic strengths and weaknesses (Maddocks, 2020). It is common for students with a combination of superior ability and learning disabilities to receive instruction and opportunity similar to that of students with average ability with learning disabilities (Baum, 1988), and such circumstances place the child at risk for issues with self-efficacy, self-confidence, and motivation, as well as the loss of joy for learning and belief in their own strengths (Baum et al., 2017). These vulnerabilities in twice-exceptional students can lead to issues with motivation and academic failure (Wang & Niehart, 2015). Levine states, “repeated failure inflicts penetrating wounds in a child’s psyche” (2002, p. 263) and goes on to say, “kids who grow up feeling that their minds are globally defective are definitely in peril” (p. 267).

Although twice-exceptional youth are most often identified by their needs and perceived deficits, they have high ability and potential. A misalignment between their learning profile and a school’s curriculum and approach can create significant hardship for the students, their family, and teachers (Baum et al., 2017). Although research and intervention efforts focused on the special needs of the twice-exceptional population continue to increase (Baldwin, Omdal, Pereles, et al., 2015), improvements are slow to be implemented given a lack of common language and

understanding across general, special and gifted education (Baldwin, Baum, Pereles, et al., 2015). The complexities of twice-exceptional student profiles can result in the masking or concealing of learning differences and deficits by compensating with their talents and abilities (Baldwin, Omdal, Pereles, et al., 2015). Similarly, their giftedness and potential for advanced learning can be hidden behind their challenges. Education systems ill-equipped to identify and serve twice-exceptional students also miss out the contributions these students are capable of making in the school community (Baum et al., 2017). Fostering the gifts of every student is essential because underachievement comes at a cost to the individual and to society, as we miss out on what they could have done in this world (Kim et al., 2013).

The many nuances around twice-exceptionality create confusion about twice-exceptionality, its prevalence, and the interface between it and services available in schools (Foley-Nicpon et al., 2013). Advanced abilities and special needs or disabilities can coexist in the same person (Baum et al., 2017), and for young people, this coexistence often creates a school and home life filled with misunderstanding, missed opportunities, and challenges. Research reveals that believing in their own academic abilities heavily influences a twice-exceptional student's actual academic performance (Wang & Neihart, 2015). For strategies to be effective for twice-exceptional students, they must include fostering strengths and interests, making available social and emotional support, adapting for strengths and accommodating for learning needs, and establishing safe, supportive, and intellectually challenging environments and cultures where every student has the opportunity to succeed (Baldwin, Omdal, & Pereles, 2015).

A primary caregiver often is the first to identify gifts and disabilities in twice-exceptional children and, in turn, takes on the important role of helping the child by pursuing professional evaluations, advocating for support and services in school, teaching self-advocacy, and

sustaining high expectations no matter the disabilities (Neumeister et al., 2013). Given twice-exceptional students and their families often interface with professionals from education and clinical disciplines in order for this to happen, slipping into gaps of understanding between disciplines is common, as described by Reis et al. (2014):

An absence of understanding about the needs and characteristics of gifted students with disabilities can lead professionals to draw false conclusions about the observed behaviors of this very heterogeneous group, as characteristics seemingly belonging to one syndrome can often define the traits of another. (pp. 219-220)

Teaching practices can “nurture, frustrate or even thwart what is a natural human process of learning, growth and change” (Deakin-Crick, 2015, p. 152). Only when a person is supported in an environment can they move toward optimizing performance (p. 152). When gifts and talents are considered, each learner has the opportunity to tap into their unique abilities, interests, and learning styles (Renzulli, 2012). The ways in which learning experiences and environments support or deny the recognition of talent are essential to examine if each student's gifts and talents are to be valued.

Impact of Stress and Trauma

Stress can be defined as any intrinsic or extrinsic stimulus that evokes a biological response (Yaribeygi et al., 2017). The effects of these stresses are known as stress responses. Depending on the “type, timing and severity”, stress can produce various reactions within the body that range from “alterations in homeostasis to life-threatening effects and death” (p. 1057). The pathophysiological complications of disease are often a result of stress, and people who are exposed to stress have a much higher likelihood of developing disease (Herzog & Schmahl, 2018). Researchers agree that stress can be a significant factor in the development of many diseases and pathological conditions.

Toxic stress is the prolonged exposure to any negative “intrinsic or extrinsic stimulus that evokes a biological response” (Yaribeygi et al., 2017, p. 1057) while trauma refers to exposure to “events or situations that overwhelm the ability to cope” (National Center on Early Childhood Health and Wellness, 2021, p. 1). Toxic stress early in life leaves an indelible signature “disrupting brain architecture and adversely affecting the concurrent development of other organ systems and regulatory functions” (Shonkoff et. al., 2011, p. 243). A traumatic experience may be a single event, a series of events, or a chronic occurrence, and the experience of trauma is highly individualized. For children, trauma occurs when they are exposed to events or situations that overwhelm their ability to cope with what they have experienced (National Child Traumatic Stress Network, 2021).

Stress also has significant effects on cognition and learning. Sandi (2013, as cited in Yaribeygi, 2017) indicates that depending on the “intensity, duration, origin and magnitude” stress can have a number of detrimental effects on cognition (p. 1060). Cognition is the process we use to receive, perceive, and interpret stimuli, and like memory, takes place in the hippocampus, amygdala and temporal lobe. Cognition is important for students attempting to learn in school, yet educators may not be receptive to signals that a student has exceeded their individual threshold for stress. Scholey described the “net effect” of stress to be a “reduction in cognition” (2014, as cited in Yaribeygi et al, 2017, p. 1060), which may help to explain why twice-exceptional students struggle in circumstances that subject them to unreasonable levels of stress.

Ongoing stress changes the brain resulting in behavior issues, difficulty acquiring knowledge and understanding, and disorders in mood (Li et al., 2008 as cited in Yaribeygi, 2017), causing students to struggle.

Reis and Renzulli (2020, p. 51) share:

The fear of being embarrassed and failing to achieve in school, despite having advanced abilities and potential, is constantly with 2E students, so care must be taken to provide a safe place at home and at school for them to escape the constant pressure and fear of embarrassment.

Adverse Childhood Experiences

For more than two decades, significant research, including the CDC-Kaiser Permanente adverse childhood experiences (ACE) study (Felitti et al., 1998), has been conducted to explore the relationships of behavior and disease in adults who were exposed to abuse and household dysfunction during childhood. In almost all cases, the research focuses on childhood experiences of violence, sexual, physical and emotional abuse, neglect, death or incarceration of someone close to them, acts of terrorism, natural disasters, and war or refugee experiences (Chafouleas et al., 2018). Clear evidence indicates that “ACE and ACE-related disorders are associated with enduring effects on the structure and function of neural stress-regulatory circuits such as the hippocampus and amygdala” and can lead to sensitivities to stress and emotional dysregulation later in life (Herzog & Schmahl, 2018).

Studies investigating the signs of trauma in children reveal patterns of “withdrawal, depression, and anxiety across different traumatic event types” (Chafouleas et al., 2018, pp. 43-44) with externalized symptoms such as “aggression, hyperactivity, impulsivity, and oppositional defiant behaviors” (p. 44). Blaustein states “childhood trauma is increasingly recognized as an epidemic” (2013, as cited in Chafouleas et al., 2018, p. 40), yet trauma experienced in educational settings has yet to be included in discussions around ACEs.

There is a distinct movement toward developing trauma-informed schools which includes significant focus on teacher professional development to support students and provide a psychologically safe space in which to learn. Critical to this is understanding the interrelation of

social factors and individual thought for students who experience trauma as it can result in undermining “the creation or sustainment of the child’s resiliency structures” (Morton & Berardi, 2018, p. 488). These structures are especially important to twice-exceptional students’ ability to face difficulties and overcome challenges in the learning environment (Morton & Berardi, 2018).

Summary

It is clear that psychological safety and opportunities to cultivate gifts are essential for a successful school experience. Given the available literature on twice-exceptionality, stress and trauma, and adverse childhood experiences independently, a call to action is to further research on their relationships and connections to one another, specifically related to learning environments. Building bridges between the stories of twice-exceptional students and their lived school experiences and current research offers an important step toward eliminating traumatization of this exceptional population while at school.

Theoretical Framework

In this section, a discussion of general cognitive theories and concepts will serve as the theoretical framework for this research study. They include the Cognitive Activation Theory of Stress (Ursin, 2004), Polyvagal Theory (Porges, 1994), and the Window of Tolerance concept (Siegel, 1999).

Cognitive theories assume thoughts are the primary determinants of emotions and behavior and are characterized by a focus on “the idea that how and what people think leads to the arousal of emotions and that certain thoughts and beliefs lead to disturbed emotions and behaviors while others lead to healthy emotions and adaptive behavior” (DiGiuseppe et al., 2016, p. 145). As twice-exceptional students experience underachievement, fail to meet expectations, and become frustrated over not developing their strengths, their confidence and self-worth can

deteriorate (Barber et al., 2011). Understanding what happens when the student's capacity or threshold for this existence is exceeded is essential.

Of particular interest for this study is the Cognitive Activation Theory of Stress (CATS), in which Ursin and Eriksen (2004) delve into the what happens when the manageable “unpleasantness” of internal alarms, that pose no threat to health in the short term, are endured over time. CATS provides a formal system of systematic definitions to describe four distinct features of stress. These features include: (a) the load, which is the stressor or stimuli; (b) the stress response, which results from the load; (c) the alarm, the signal sent to the brain as a result of the stimuli; and (d) the brain itself. By providing clarity around the features of stress, the CATS model may help to foster a shared understanding of how stressful experiences progress for struggling twice-exceptional students.

Ursin and Eriksen further describe an “alarm” as what happens “whenever there is a discrepancy between what should be and what is” (p. 567). Specific behaviors develop as coping mechanisms to deal with stressful situations and depend upon the level or intensity of the alarm. For a twice-exceptional student, alarms at all levels may be going off constantly throughout the school day, and although they may be equipped to manage occasional low-level alarms, a consistent barrage of alarms at any level affects physiological systems in the body which require the student to use the same critical resources they could otherwise use for learning. The CATS model may help to clarify the aspects of stress and acknowledge that occasional stress can produce positive outcomes as it merely “trains” the brain while stress sustained over time can “strain” or challenge the brain and body, potentially resulting in pathology and an inability to regulate (Ursin, 2004).

Typical classroom expectations and interventions do not account for the fact that a student may not have conscious control over their emotions, behaviors, and reactions in order to

self-regulate (Porges, 2018). Polyvagal theory, developed by Porges (2018), proposes that an autonomic nervous system connected to the central nervous system, responds to stimuli in the environment as well as organs in the body, and a prerequisite for creativity and problem solving is feelings of safety. It suggests that the neural evaluation of risk does not require conscious awareness, and this automatic process involves the evaluation of cues in the environment to determine “safety, danger and life threat” (p. 19). Students may be unaware of what triggers them but quite aware of how their body reacts to those triggers (p. 19). The theory emphasizes a link between the brain and internal organs and how experiencing emotional stress or trauma can intensify symptoms of physical and mental illness (Porges, 2018).

The theory may also help to contribute to understanding why twice-exceptional students experience difficulty meeting expectations in the typical classroom and often suffer from coexisting mental and physical illness. Polyvagal Theory also emphasizes that feeling safe, despite the removal of a perceived threat, is “not well integrated into educational, medical, and mental health treatment models” (p. 25). Porges indicates that feeling safe is dependent upon three conditions, which include (a) the autonomic nervous system cannot be in a state that supports defense; (b) the social engagement system needs to be activated to shift the nervous system out of fight or flight mode; and (c) cues of safety need to be available and detected. In examining this theory, rich descriptions of educational experiences that potentially reflect the presence or absence of these conditions are critical to identifying useful interventions and approaches.

A third basis for my theoretical framework is a concept known as the Window of Tolerance. It was originally introduced by Siegel (1999) and later evolved into a concept by Ogden, Minton, and Pain (2006). It describes that there is an ideal and unique state in which individuals are able to function and thrive in everyday life. When we operate within this window,

we are able to learn effectively, play, and relate well to ourselves and others (Siegel, 2009). It also supports the notion that the autonomic nervous system and emotional responses are connected, and that we must consider emotions as central to understanding the human condition (Raju et al., 2012).

As arousal approaches the upper limits of the Window of Tolerance, emotions and thoughts are altered by physiological changes in the body (Lohrasbe, 2017). “Increased heart rate and breathing affect one’s perceived safety as action systems for survival are triggered” (Lohrasbe, 2017, p. 579) while emotions such as fear take over (Lohrasbe, 2017).

Over time, traumatic experiences can narrow a child’s Window of Tolerance (Hershler, 2021), and as their reactions to stressors in an environment intensify, it becomes more difficult for them to tap into strategies for managing distress (Hershler, 2021). Resulting behaviors include “overwhelming emotions, unwanted thoughts, uncomfortable sensations, or unhealthy behavioral impulses” (Herschler, 2021, p. 25), all of which may be disruptive to learning.

A number of psychiatric disorders, including anxiety, are associated with emotional dysregulation, and knowing whether an individual is operating within a state that allows them to process, learn, and regulate emotions is essential (Raju et al., 2012). Over time the consistent engagement of defense responses beyond a tolerance threshold may lead to a chronic state of hyperarousal that can lead to substance misuse, self-harm, and suicidal thinking as ways to reduce feelings of desperation and distress (Raju et al., 2012).

In summary, advanced abilities in some areas and failure to meet expectations in others often results in complexity and stress for twice-exceptional students in learning environments. These experiences can trigger a prolonged activation of the stress response that interrupts the student’s ability to think and learn, further exacerbating difficulties in and out of school. Research focused on adverse experiences during childhood reveals clear connections between

the enduring effects of stress and trauma and a student's ability to regulate and face difficulties into the future. This connection helps to illuminate the overall influence a student's experience can have on their ability to thrive in learning environments and even reach their full potential. The selected theoretical frameworks and concepts outlined in this chapter provide insight into neuroscience explaining how the body's reaction to stress and trauma is largely outside of the student's control. Given that traditional learning environments are designed to foster behavioral responses and that performance is largely within a student's control, twice-exceptional students may be at a disadvantage in school.

Chapter 3: Methodology

The purpose of the study was to describe and analyze the experiences of twice-exceptional students and their families through their own words and perspectives. The following chapter is a review of the methods and measures used to accomplish this, including details on research design, research questions, description of study participants, data collection, procedures and instrumentation, data analysis, aspects of trustworthiness, and ethics.

Research Design

The nature of this research study lent itself to qualitative research methods and a comparative case study methodology in particular, given qualitative case study research is an approach “that facilitates exploration of a phenomenon within its context using a variety of data sources” (Baxter & Jack, 2008, p. 544). As Merriam and Tisdell (2016) state, such a process involves investigating a “contemporary phenomenon within its real-life context” (p. 37), “collecting and analyzing data from several cases” (p. 40) with the researcher serving as “the primary instrument of data collection and analysis” (p. 37), and the “end product being richly descriptive” (p. 37).

Qualitative research in case study form allowed the researcher to “examine the conditions, the complexity, and the coping behavior of the case” (Stake, 1995, p. 127). With a narrative and comparative case study approach, deep insight into unique student and family experiences through in-depth descriptions, comparative analysis between multiple cases, and identifying any relational or causal patterns was possible (Gall et al., 2003, p. 440). Given this multicase study was for a dissertation, I assumed the role of director, thinking through all of the cases, and the role of field researcher, concentrating on each individual case (Stake, 2006). Each case had its own uniqueness that needed to be honored, understood, and conveyed, while the

ultimate goal of the multicase study was to seek understanding of the “quintain”, or the whole, as described by Stake (2006, pp. 4-6).

Research Questions

Utilizing resources such as the “Guidelines for Conducting a Research Interview” (Gall et al., 2003, p. 247), questionnaire and interview questions for this qualitative research study focused on the following research questions:

1. How do twice-exceptional students who experience difficulty and stress in school describe their educational journey?
2. How do parents and siblings of these twice-exceptional students describe their family’s journey?
3. What common experiences and themes related to stress and trauma do the students and families share?
4. What is the impact of stress on learning?

Because qualitative case studies do not involve the same questions for each participant (Stake, 1995), each participant was expected to share unique insight and an individual story that required flexibility in interview questions (Stake, 1995). Gathering feedback on my interview questions from my committee members and piloting the agreed-upon questions and probes with a non-study participant ahead of actual interviews offered an opportunity to fine-tune ahead of participant involvement (Stake, 1995).

Description of Study Participants

Participants in this study were families from a convenience sample identified through recommendations from Bridges Graduate School faculty and students as well as my personal network (Appendix A). Twice-exceptional students between the ages of 16 and 27 years old with self-reported IQ of 120 or above, diagnosed learning disabilities, and a history of difficult

educational experiences were identified. No documentation of IQ or diagnosed learning disabilities was requested, but rather parents or participants over the age of 15 attested to criteria being met upon volunteering to participate. Upon receiving approval to proceed, an initial letter to parents requesting participation (Appendix B) was distributed. The five families involved in the study lived in the West and Midwest regions of the United States. The five twice-exceptional participants ranged from 16 to 18 years of age, while the two sibling participants ranged in age from 15 to 21 years of age. Ages for the eight parents were not sought, although all attested to being over the age of 18.

Regarding sample size and selection, Stake (1995) shares that “balance and variety are important” while “opportunity to learn is of primary importance” (p. 4). Given I am a single resource-bound researcher, selecting participants who were agreeable, willing and able to articulate their stories was essential (Stake, 1995). I interviewed members of five families in order to seek balance but offer variety. My obligation was to understand each case well enough to convey it through my writing (Stake, 1995), therefore I interviewed each member of the family individually.

Data Collection

Discovering and conveying the lived experiences of participants lends itself to the descriptive manner of qualitative research while quotes and excerpts are essential to supporting study findings (Merriam & Tisdell, 2016). Participant interviews are considered a primary mechanism for “discovering and portraying the multiple views of the case” (Stake, 1995, p. 64), and researchers often “collect and integrate quantitative survey data, which facilitates reaching a holistic understanding of the phenomenon being studied” (Baxter & Jack, 2008, p. 554). Based upon these methods, my research entailed the use of a questionnaire and semi-structured interview for each participant. Completed questionnaires were returned ahead of the

semi-structured interviews to assist me in developing potential clarifying questions ahead of the interviews. Semi-structured interviews were conducted for this study because they involve “asking a series of structured questions and then probing more deeply using open-form questions to obtain additional information” (Gall et al., 2003, p. 240).

For the questionnaire, students, parents and sibling participants were asked to answer 15 - 30 questions each, which included a combination of questions in closed form with prespecified multiple-choice answers to minimize participant effort and simplify quantification of results to open-ended questions, allowing participants choice in how to respond (Gall et al., 2003). The researcher anticipated the questionnaires would take participants 20-40 minutes to complete. Each 45 to 60 minute semi-structured interview was scheduled at a mutually-agreed upon time and conducted via the online Zoom video platform.

I received permission to record the interviews to assist with transcription, coding, and observation and advised participants about authorized persons who will have access to the data collected (Gall et al., 2003). To reassure participants of my efforts to maintain confidentiality, I explained my intended use of pseudonyms and commitment to keeping data protected from unauthorized access.

Digital and virtual technologies were utilized to complete this study, including email for questionnaires and Zoom video platform for synchronous interviews. Because observation is a critical form of data collection for qualitative studies involving phenomena (Merriam & Tisdell, 2016) interviews were recorded so that I could refer to them for further data analysis once the interviews concluded. Audio files were uploaded to Otter.ai for transcription and download.

Approaching this qualitative research by understanding “the human instrument has shortcomings and biases that can have an impact on the study” (Merriam & Tisdell, 2016) was important. Understanding that my experiences with a twice-exceptional child of my own as well

as educational pursuits specific to cognitive diversity in education could shape how I interpreted the data collected, I approached the validity and reliability of case study findings by utilizing the “Chain of Evidence” where “meaningful links between research questions, raw data, and findings” (Gall et al., 2003, p. 461) clearly enabled reviewers to see connections throughout the study.

Procedures and Instrumentation

Consent

Once potential participants were identified, the appropriate cover letters and consent forms were emailed to participants. These included an Cover Letter for Parents’ Participation (Appendix C) followed by a Parent Participant Consent Form (Appendix D), a Parent Cover Letter Seeking Permission for Their Child(ren) Under the Age of 18 (Appendix E), Parent-Guardian Informed Consent Form for Children Under the Age of 18 (Appendix F), an Assent Form for Children Under the Age of 18 (Appendix G), a Cover Letter for Adult Participation (Appendix H), and an Adult Participant Consent Form (Appendix I).

Questionnaires

After consent for study participation was received, the student, parents, and siblings were asked to complete brief researcher-designed questionnaires specific to their role in the family, which included unique questionnaires for twice-exceptional students (Appendix J), parents (Appendix K), and siblings (Appendix L). The collection and integration of quantitative survey data helped to facilitate reaching an understanding of the phenomenon (Baxter & Jack, 2008, p. 554). The purpose of the questionnaires was to collect information about the lived school and home life experiences of families in preparation for and as supplementary data to the interviews (Gall et al., 2003).

Semi-structured Interviews

To further understand the essence of the lived experiences of the families engaging in this study, semi-structured key informant interviews (Gall et al., 2003) utilizing unique interview protocol for twice-exceptional students (Appendix M), parents (Appendix N), and siblings (Appendix O) were conducted after completed questionnaires were submitted to and reviewed by the researcher (Stake, 1995). Probes, or “questions or comments that follow up on something already asked” (Merriam & Tisdell, 2016, p. 122) were included in the interview protocol. Interviews averaged one hour in length and were recorded and transcribed using the Otter.ai transcription platform. The interview data collected helped me develop rich descriptions of participant perceptions and experiences with the help of quotes and excerpts that supported study findings (Merriam & Tisdell, 2016). Additionally, observations made during the interviews allowed me to develop interpretations that were independent from how participants’ conveyed their stories (Gall et al., 2003 p. 267).

Follow-up Procedures

Because qualitative research involves certain aspects of research design to be emergent as the study progresses (Gall et al., 2003, p. 45), participants agreed to be available for additional questions and clarifications after the interviews concluded. No additional follow up was necessary.

Data Analysis

Data collected from the questionnaires and interviews were analyzed through coding (Appendix P), narrative description, and highlighting themes for each case and across cases (Merriam, 2016). To increase validity, decrease bias, ensure accurate representation of participants, and promote transparency, answers from the questionnaires and transcripts from the interviews were structured into initial themes for analysis (Gall et al., 2003). To support the accuracy of my interpretations, triangulation of sources was necessary (Stake, 1995). In addition,

the use of questionnaires, semi-structured interviews with probes, and observations helped me establish a system of checks and balances to determine whether my new views were “consistent with what is already well known” (p. 77). A version of member checking was utilized to protect the confidentiality of each family member. This entailed sending a synthesized family profile to a point person within each family to check for factual accuracy. Asking my committee members to review my work at points throughout the study also offered purposeful opportunities to check for accuracy in my “seeing, hearing, coding, analyzing, and writing” (p. 77).

I started with a deductive coding process and a set of predetermined codes given my conceptual framework and research questions suggested particular “codes, categories, themes, or concepts” (Saldana, 2021, p. 40) were likely to appear in the data collected. To further ensure validity, I approached coding inductively, with an open mind and interest, in order to search for new or unexpected codes as I worked through the data (p. 41). I started by reading through the collected data, applying an initial round of predetermined codes to the excerpts, organizing the data by category or theme using a thematic map and color coding, and then conducting a second round of coding to add an interpretive lens and search for new codes.

A detailed written analysis of each family’s case allowed for a deeper holistic understanding of experiences while generalizations about the experiences of families with twice-exceptional children drawn from common cross-case themes were related to the literature and produced as findings (Merriam, 2016).

Aspects of Trustworthiness

The increased prevalence of action research in the literature has resulted in growing concern for validity (Gall et al., 2003). This is especially important in cases where research results are directly relevant to professionals in applied fields who become involved in the lives of participants (Merriam et al., 2016). When considering trustworthiness in qualitative research,

“the question then is not whether findings will be found again but whether the results are consistent with the data collected,” (Merriam et al., 2016, p. 251). Therefore, I remained disciplined and committed to the validity and authenticity of my research in order to achieve what the research was intended to do, which was to convey and honor the lived experiences of participants.

Adhering to best practices for these qualitative methods included discussion with my dissertation committee about the questions on my questionnaires and interview protocols and reviewing the congruence of emerging findings with raw data and tentative interpretations (Merriam & Tisdell, 2016, p. 259) throughout the process. Triangulation was achieved by providing the point person within each family a written family profile that synthesized questionnaire responses and factual information from the interviews with a request to correct any factual inaccuracies. I also met regularly with my committee members to discuss my data collection and profile development processes.

Ethics Statement

All participants in the study were volunteers and did not receive compensation of any kind. Confidentiality for the institution and all participants was maintained. This researcher had an approved dissertation proposal and approval from the IRB before beginning research.

In summary, I used a case study qualitative research approach to learn about the lived experiences of participants and families through their own words and to explore their stories from multiple family member perspectives. Research questions focused on gathering rich descriptions of the lived experiences of twice-exceptional students, their parents, and siblings with attention to individual participants and families. Data were gathered through online questionnaires and individual virtual interviews, and the data collected were analyzed through coding, narrative description, and highlighting of common themes identified across cases.

Trustworthiness and conducting an ethical study were of utmost importance, therefore I remained disciplined and committed to a transparent and comprehensive process.

Chapter 4: Findings

The purpose of this study was to describe and analyze the experiences of twice-exceptional students and their families through their own words and perspectives. The first three chapters of this dissertation offered an introduction to the problem surrounding the effects of toxic stress in learning environments, a review of related literature, and the methodological design that was utilized for this study. This chapter will now present the findings that emerged from the data collected and analyzed using the conceptual framework that was constructed for the purpose of this study.

A qualitative study employing a multisite case study methodology was conducted with data collected from interviews and questionnaires (Yin, 2008; Merriam, 2009). Pseudonyms for the families of participants were created to ensure that all participants' identities were kept private. The cross-case findings are presented as themes and serve to answer the following research questions for this study:

1. How do twice-exceptional students who experience difficulty and stress in school describe their educational journey?
2. How do parents and siblings of these twice-exceptional students describe their family's journey?
3. What common experiences and themes related to stress and trauma do the students and families share?
4. What is the impact of stress on learning?

Five families participated in this study and their profiles are presented to describe the sense of their lived experience. Each profile is synthesized to include data collected from all

family members. The profiles are followed by additional study findings sorted by major themes and sub themes that emerged from this process.

Family Profiles

Family A

Family A included a mother (Ann), father (Arthur) and 18-year old son (Adam). Adam is twice-exceptional and in the process of completing his last semester of twelfth grade. Although information provided by the family suggested an applicable 504 accommodation plan, they were not advised to seek one. Ann and Arthur indicated Adam attended schools in two districts during his K-12 journey. The family left their home district in sixth and seventh grades due to difficulties Adam experienced in learning environments, attributing the difficulties to a lack of advanced learning opportunities. Although Adam's grades were above average, the traditional learning environment of their suburban public school district failed to offer the academic challenge he needed with very few teachers and administrators understanding his behaviors, asynchrony, and twice-exceptional profile.

Adam expressed a significant "appetite for learning" and advanced ability in math from an early age, however, was denied entry into the multi-year elementary gifted math program in his suburban school due to a single test score in first grade. Adam missed the eligibility cutoff by mere points and was devastated to see his intellectual peers benefit from a program he knew he belonged in as well. The school district refused to reconsider his eligibility despite his parents' efforts to advocate for him. Although his parents were not surprised, Adam successfully met or exceeded testing and eligibility requirements for a number of subsequent gifted and talented camps and programs.

Adam described his overall school experience as "mostly unpleasant" and shared details of physical and emotional discomfort throughout his school journey. Adam also shared details of

experiencing significant stress and frustration in learning environments due to boredom, “irrelevant” lessons, repetition of content already mastered, lack of choice in learning, inability to move around as needed, and intolerance by teachers for his questions and application of logic. As early as first grade, Adam recalled teachers who appeared unprepared to teach material, “talked down to” him or other students, or seemed not to care about him, while at the same time he expressed great joy in the few experiences where teachers offered him “special” advanced learning opportunities outside of standard grade-level curricula.

Ann described Adam’s overall school experience as “very difficult” with strength-based talent-focused opportunities “never” offered. Arthur described Adam’s overall school experience as “moderately difficult” with strength-based talent-focused opportunities “rarely” offered. They detailed significant frustration, stress and exhaustion in their home life related to unsuccessful efforts to help Adam gain access to appropriately challenging work despite performance and assessment data to justify it. They also detailed their concern for behavioral issues attributed to Adam’s frustrations over school. In elementary school, Ann recalled Adam “sobbing” in her arms at the bus stop after school as if “he had to hold his breath all day long” and could “finally exhale.” She also recalled a teacher pulling Adam aside in fourth grade to ask if his mother’s request for harder math was what he wanted or what she wanted. Both parents indicated the vast majority of their requests and suggestions were met with “excuses” from teachers and administrators for why additional challenge was not available to Adam. Teachers and administrators pointed to the lack of testing evidence, behavior issues, and school policies for justification. When it became apparent their efforts to access advanced learning opportunities in school would continue to be unsuccessful, they made significant efforts to obtain advanced learning opportunities outside of school, such as gifted and talented programming with the Northwestern Center for Talent Development, for which Adam easily qualified.

The family was hopeful things would change when he earned access to his sixth and seventh grade out-of-district gifted programming experiences; however, both parents indicated amplified social, emotional and behavioral difficulties arose for Adam during that time with teachers expressing concern for his well being. His parents believed the difficulties were fueled by academic pressure, bullying by teachers and other students, and a concerning student culture focused on suicide. The family obtained counseling services for Adam, and he returned to his home school district in the middle of seventh grade. A counselor at the middle school assisted the family with the transition back into the school community, including the opportunity for Adam to choose his schedule and classes. The parents indicated this time frame involved significant healing for the whole family.

Although more opportunities for advanced learning through challenge and AP classes were available to Adam in middle and high school, he described these learning opportunities in his areas of interest as woefully “lacking” and support for his learning style as solely dependent upon individual teachers and their ability or willingness to understand him. He described the same curriculum being offered year after year, which provided him with little opportunity to advance his knowledge or prepare for life beyond high school.

The family concluded only isolated K-12 learning environments met Adam’s need for advanced learning while also providing support for his developing skills and needs. They described the vast majority of learning environments as producing their own aspects of stress and difficulty at school and home. Echoing frustrations shared by Adam and Ann, Arthur expressed resentment for school structures and standardization that “teach to the masses” and hurt the “outliers”, while Ann added that much of their struggle was that each learning environment “fed just one half of him.”

Adam was accepted into the college of his choice and will pursue an engineering degree. Adam and his parents expressed hope that college will be different enough that he can learn and perform as he was designed to.

Family B

Family B included a mother (Barbara), father (Bill), 18 year-old twice-exceptional son (Brian), and 21-year old sibling (Brad). Brian graduated from his local suburban public high school one year ago. Though information provided by the family suggests a 504 accommodation plan was applicable, it was not pursued. Brian's parents considered changing schools for Brian on a number of occasions due to lack of academic challenge and related behavioral difficulties; however, the prospect of starting over socially led Brian to remain at the same district for his entire K-12 journey. Brian's behavioral and emotional difficulties in learning environments were attributed to boredom, a painfully slow pace of learning, lack of access to advanced academic options, and a lack of understanding by school teachers and administrators around his varying abilities. He and his family shared that he applied himself when the subject area and work interested him and when teachers allowed him to work at his own pace, yet he struggled to find relevance, logical connections, or interest in most of the school curriculum. Brian's grades were well above average, and his parents indicate the majority of teachers and administrators were "unwilling" to provide help to the family because of it. Barbara and Bill shared frustration that available resources were heavily concentrated on students struggling to reach grade-level expectations while their son remained largely unsupported.

Brian's grandmother, a retired teacher with 40 years of experience, recognized his advanced abilities at a very young age and on a number of occasions encouraged Barbara and Bill to have him assessed. His first grade teacher discovered he was reading at a fifth grade level and also encouraged his parents to seek an assessment. Barbara and Bill knew Brian picked up

on concepts very quickly but were reluctant to pursue an assessment given the possibilities for “labels,” yet they made the decision to have him assessed in the second grade. Results confirmed a jagged, twice-exceptional profile which prompted his parents to become more “activated” in terms of “pushing” Brian’s teachers and school administrators to provide appropriate accelerated learning opportunities and support for his lagging skills mostly related to writing. Upon presenting the assessment data, Bill and Barbara described school personnel as not “happy or enthusiastic about accommodating his needs” and their efforts as “half hearted at best.” They indicated very few teachers understood his asynchrony and need for logical connections despite the assessment data provided.

During Brian’s challenging early elementary school experience, the family experienced additional stress and difficulty at home. Barbara described a significant health crisis for Bill and the death of a grandparent as requiring the family to carefully “balance all those things” which was challenging. Bill shared frustration over a lack of resources available to high-ability students like his son, whom he described as just as worthy as students struggling to meet grade-level expectations. Brian recalled difficulty relating to other kids, acting out and getting into trouble, and not being in “tune” with the feelings of others during this time. With a three-year age difference between Brian and Brad, the two had a difficult relationship that Brad described as “almost mortal enemies.” Their relationship produced additional stress and conflict for the family until late middle school and high school when the two began to connect through shared interests in music and band.

Brian described his overall school experience as “very unpleasant” and “very boring” with fourteen years of “waiting for it to be done.” He recalled being able to finish in-class work well ahead of his classmates and resorting to quietly reading fantasy books as a “coping mechanism” for the boredom. Some teachers saw him resorting to books as disrespectful

behavior, going so far as to take his books away, which greatly upset Brian. His parents repeatedly advocated for him explaining his reasons for turning to books yet rarely received suggestions from teachers for alternative activities. Brian was very advanced in math, and his brother, Brad, described it as “math and him just get each other.” Brian recalled picking up on abstract concepts faster than other students but having “no one to talk to about them,” which led to building an “incredible capacity or tolerance for boredom.” Lack of access to intellectual peers frustrated Brian and persisted throughout elementary school. He was offered opportunities to advance grade levels in math, and throughout middle school, took high school math courses with much older students. Once in high school, Brian gained access to college level math through the local community college. The significant age difference between Brian and his classmates in these circumstances again produced limited opportunity for connections with intellectual peers.

Barbara described Brian’s overall school experience as “very difficult” with strength-based, talent-focused opportunities “rarely” offered. Bill describes Brian’s overall school experience as “moderately difficult” with strength-based, talent-focused opportunities “never” offered. They detailed challenges, frustration, and stress at home thought to be carryover from Brian’s school experiences. Both feared Brian would turn to drugs and worried consistently that they would “lose him” because of school experiences. Every member of the family mentioned two specific teachers who seemed to understand Brian’s unique profile and needs, describing interactions with them as something of a haven for Brian.

Brian found relief from boredom in a technical construction program offered through the school district between his sophomore and junior years. He described his willingness to “slog through the first half of the school day” for the opportunity to spend afternoons in the hands-on vocational trades program. However, the pandemic shut the hands-on program down halfway through the school year. Frustrated with a return to “rote learning” and virtual school, Brian

convinced his high school counselor to help him secure a work study position with a local finish carpenter. Upon graduation from high school, Brian started as an apprentice with the same carpenter and remained there one year later. Although Brian's parents encouraged him to pursue his interests and advanced abilities in college, he described the prospect of sitting another four years in a classroom as "just worse than hell."

Brian and his family described a significant transformation in him after graduating high school. His parents and brother expressed pride in his work ethic and shift in attitude. They expressed hope that he will continue to thrive and find joy in his success. Brian shared that he doesn't believe his learning journey is over but will always wonder how things might be different had he been allowed to learn with no limits.

Family C

Family C included a mother (Cora) and 16 year-old daughter (Claire). A father and younger twice-exceptional sibling were not interviewed for this study. Claire is twice-exceptional and was in the process of completing tenth grade at a suburban public high school. Cora reported Claire had a 504 plan in elementary school and an IEP beginning in the sixth grade. She attended a number of public and private schools, changing numerous times as the family struggled to find an environment where she was psychologically safe, challenged academically, and appropriately supported for learning difficulties.

Cora described Claire as in the 99th percentile for intelligence and "5, 10, and 15 years old" at the same time, explaining she was "both younger and older" than her same-aged peers and differed from them emotionally and academically. Claire taught herself to read at age two and a half, which led her parents to believe she would "knock it out of the park" at school, but instead Cora recalled Claire "just spacing out" at school without the "developmental capacity to get through a day," adding she was barely able to hold it together at school and often would "lose

it” upon arriving at home. Cora recalled advocating for Claire early on, but described her efforts as “trying to get her to be like all the other kids.” Claire’s situation at school continued to deteriorate as she struggled with writing assignments and experienced constant “micro and macro aggressions” by teachers and students, which Cora believed were reactions to Claire’s differences.

The family decided to seek an assessment at Stanford University when Claire was in the first grade. After four months of working with experts there, the assessment team came back with inconclusive results and no ability to calculate an IQ score because the subscores were two and a half to three standard deviations apart. Despite exhibiting common behaviors related to ADHD and “all the textbook stuff” related to ASD, the assessment team did not conclude with any diagnosis. Cora recalled the team stating they were “not sure what’s wrong with your daughter,” but asked Cora and her husband to follow up with them if they ever found out.

Claire described her school experiences as “mostly unpleasant” and “lonely” with occasional feelings of discomfort or nervousness because the pace of learning was too slow, the assignments did not interest her or were too difficult to complete, or teachers were not willing to make adjustments to assignments so that she could complete them. She shared “it’s hard to write without help” and described often encountering inflexibility of teachers to accommodate her needs. Claire shared she is “always tired” and points to “memory loss” when trying to recall traumatic experiences in learning environments; however, she clearly recalled not being treated the same as her peers and of her peers trying to “keep away” from her. She suspected that when other students tried to be her friend in elementary school, it often was so they could identify her weaknesses and bully her. She recalled her most valued possessions being taken or destroyed by other students, including a personal drawing journal, favorite pencil, and beloved stuffed animal. She recalled “hating” her second and third grade teacher and described fourth grade as “a

nightmare” because of a “hardcore” approach to teaching. She indicated she “didn’t learn anything” in fifth grade and blocked out many memories from middle school. As an older student, she spoke of always being tired and liking only the classes in which she had the “best grade.”

Cora described Claire’s school experiences as “very difficult” with strength-based, talent-focused opportunities as “never” offered. Cora described Claire feeling chastised for being “who she is” as the trauma escalated and Claire struggled to find friends. Cora reported the 504 plan did not provide adequate services at school, and because Claire “met all the academic standards,” the school refused to offer an IEP that would have provided access to speech and other services that the family believed Claire needed. Claire was in the eighth percentile in some areas, however, she did not meet the sixth percentile cut off for the school to offer services. Frustrated with the lack of support, the family sought care from psychiatrists when Claire was in elementary school, which resulted in an ADHD diagnosis and long term use of “off the charts” stimulants prescribed at “a 16 year-old dose.”

After “a really terrible” fifth grade experience, Claire’s teacher suggested the family look into the state association for the gifted. Cora didn’t know anything about giftedness at the time and, as a person of color, recalled difficulties finding the acknowledgement, support, and resources the family needed to help Claire. Looking back, Cora believed that due to the lack of appropriate intellectual challenge, Claire began to even out with her peers academically, which Cora understood to be common among gifted girls.

Desperate for more support and services at school, the family pushed for an ASD diagnosis and received one along with a 107 page report detailing Claire’s complex profile, which also included dyslexia. The family hadn’t realized Claire was a stealth dyslexic given she’d taught herself how to read at age two and a half. The SLD and ASD diagnoses qualified

Claire for an IEP and services at school, and Cora recalled a distinct change in how the school perceived them and Claire. It wasn't until Claire was 13 years old that she received a pathological demand avoidance (PDA) autism diagnosis, which Cora described as an "anxiety-based form of autism" that presents itself much differently than other forms of autism. Cora added that while Claire studied college-level math, her social anxieties were representative of a ten-year-old child. This created complexity for her in school, and Cora's advocacy shifted away from trying to get Claire to be like other kids and toward securing the services Claire needed to live her best life. As Claire matured, Cora shifted into a "sounding board" role while teaching Claire to self-advocate at school.

Cora described "all hell breaking loose" when Claire entered school and her own cortisol levels as "off the charts" throughout the experience, with "physical manifestations" similar to PTSD and fears of having an "early heart attack." She put her career as a college professor on hold when faced with the choice to "be a good parent or a good teacher" and described having "given my life to this." Cora indicated that when Claire was young, all one could see were her gifts and no deficits. The more time she spent in school, the more her deficits overshadowed her gifts. Cora believed Claire "would be a happier person" if she hadn't experienced all of the trauma at school and described watching Claire's joy for life and "beautiful smile" literally fade away in photographs over the years.

Heading back to her local suburban public high school with a "clean slate" was a better experience for Claire. Although she continued to face issues with teachers not following her IEP, she spoke of feelings of accomplishment as the support she needed arrived and her grades improved. Self-advocacy and consistent help and support from Cora helped. Claire also described gaining social confidence and talked of a neurodivergent best friend who shared her

interests and brought her happiness. Claire added that she could “live without” her friend, but it “wouldn’t be the same.”

Family D

Family D included a mother (Deborah) and twice-exceptional child (Dana). Dana (they/theirs) is 16 years old and in tenth grade at an urban high school. During their K-8 journey, Dana attended five different schools due to difficulties and trauma experienced in learning environments. They attended a small Montessori for the first few years of school, where teachers thought Dana was struggling with a sensory processing disorder, describing Dana as “wiggly” and “scattered”. Deborah did not believe the teachers had an appropriate read on Dana and consequently hired an educational consultant to conduct a classroom observation. The consultant recommended additional assessment by a child psychologist which resulted in Dana being identified as gifted. With the newfound information, Deborah, who also had been identified as gifted as a child, began to research giftedness and determine a path forward for her gifted child. By the third grade, Deborah felt Dana needed more intellectual challenge, so she pursued assessment by her public school district to gain entry into its gifted and talented magnet school. Although Dana’s advanced abilities gained them access to the gifted magnet school, she wasn’t performing to her abilities and became increasingly disorganized. She also had some traumatic experiences with a teacher who accused her of being “lazy.” Deborah indicated that Dana’s time at the gifted and talented school was especially “bumpy” as Dana “really began to struggle.” As the family considered middle school options, Dana was assessed again by the original child psychologist. This second assessment revealed “dramatically different results” than the first, resulting in an added ADHD identification. The family decided to try a large but highly regarded public school for middle school, where Deborah secured a 504 accommodation plan for Dana based on the ADHD identification. Despite the 504 in place, Dana’s difficulties in learning

environments persisted, with many teachers “not understanding ADHD” or how to provide support. Dana was performing at an average level in school, despite missing several days for mental health reasons. Deborah described the timeframe as “very dark” for Dana, and she “agonized” over what to do next. Perceiving Dana as “disconnected from themselves,” Deborah made the difficult decision to pull Dana from school altogether, a decision she would have to staunchly defend against questioning and criticism from friends and family. Deborah described the break from school as an opportunity to “just let them be who they were” without the “awful” pressures she attributed mostly to school and partially to puberty. Dana flourished intellectually during this time of independent learning, but concerns about their social and emotional challenges lingered. An ASD identification soon followed, which Deborah described as “the missing link” needed to begin to repair Dana’s damaged self-concept. With information and knowledge in hand, the family has since re-entered the public education system better prepared to choose the best learning environment and advocate for Dana’s advanced abilities and learning differences. Both Dana and Deborah described it as a “turning point,” and although some challenges persist, they agreed Dana’s current experience at a small, competency-based high school and early college that attracts “similar students” was significantly better.

Dana describes their overall school experience as “mostly unpleasant” indicating kindergarten through middle school were the most difficult. Dana knew they needed accommodations and described their deepest troubles as “nobody realizing how much I was struggling.” Knowing “baseline average” performance was not the best they could do, they struggled knowing others in their life were content to accept it. Issues they experienced in the classroom, like “spacing out for hours on end” or floundering on assignments was not “normal” from Dana’s perspective, yet convincing adults that they needed help proved difficult. Being “bullied” by teachers and students for their differences was traumatic for Dana, and much of

their self-esteem became “wrapped up in grades.” Dana acknowledged a persistent and stressful connection between the frequency with which they check their grades and subconscious uncontrollable thoughts that they are judged by their grades. Dana points to middle school as the most traumatic and expressed difficulty in understanding how other students “made it work” while they were “falling apart” and unable to “show up,” which led to school avoidance and truancy. The ASD identification that came in eighth grade was not a surprise to Dana as they finally felt their lived experiences and profile were validated. As Dana continued to mature and their twice-exceptional profile came into focus, advocating for themselves became easier and the stress of school lessened.

Deborah described Dana’s overall school experience as “very difficult” with strength-based, talent-focused opportunities as “rarely” offered. Deborah also reports Dana’s school experiences had “very” strong effects on Dana’s self-confidence and “very” significant effects on the family, prompting her to “regularly” worry about Dana when they were at school. Believing Dana frequently felt “uncomfortable or nervous” at school, Deborah expressed regret for not understanding they were struggling sooner. She believed “masking” of gifts and difficulties, often noted as significant for twice-exceptional girls, was a significant contributor to the delay in understanding Dana’s total profile and not moving to intervention and advocacy sooner. Both Deborah and Dana mentioned a disproportionate focus on Dana’s learning differences resulting in limited access to advanced learning opportunities and loss of learning along the way. Spending significant time trying to “explain things” to family and friends, many of whom did not understand, was a difficult reality. Dana described dealing with family members as “fighting an uphill battle” as they were forced to explain “why I am the way I am.”

Per Deborah, it took pulling away from school to allow the family to “decompress”, “regulate”, and “trust” each other. She believed leaving school also allowed her to better “see”

who her child really was while also giving her child time to “find themselves.” Combatting doubts and trusting my “gut” and “intuition” helped Deborah “stop fighting.” Deborah also shared that traumatic elementary and middle school experiences, in particular an experience with a fifth-grade math teacher, have stayed with Dana and continue to affect their academic and social confidence despite progress. Deborah shared that Dana has developed a number of fears related to “existential things” where the threat is minimal but Dana can’t help but “think six steps ahead.” School safety was one such fear.

The family concludes that the K- 8 school journey was “challenging” and “stressful” with “high highs and low lows” and significant difficulty and stress related to misunderstandings around Dana’s giftedness and learning differences. As Dana’s school experiences improved, Deborah indicated seeing a “whole different kid,” one who was able to overcome the challenges of ADHD and ASD and set sights on the future. The child she worried might not finish high school let alone go to college “now wants to get their Ph. D.”

Family E

Family E included a mother (Ellen), father (Edward), 18 year-old twice-exceptional son (Eliott), 15 year-old sibling (Ethan). A seven year-old twice-exceptional sibling (Evan) was not interviewed due to his age. Eliott was a senior in high school and in the process of completing his last semester of 12th grade. Although the family considered other learning environments for Eliott due to persistent difficulties in school and at home, he spent his entire K-12 journey in the same suburban school district. Eliott’s difficulties related to learning were attributed to the slow pace of the standardized curriculum, difficulty with homework related to content already mastered, rote memorization, disinterest in subject matter, and lack of opportunities in areas of interest. Eliott’s parents indicated he is in the “top 1%” for IQ with a definite and long-standing ability to “ace tests.” Additionally, they described Eliott’s most challenging issue with school as

persistent and significant difficulty completing required classwork without procrastination, frustration, and considerable parental involvement, noting executive functioning skills, lagging social skills, and delayed emotional maturity as contributing factors. They described Elliott's social and emotional development as about "three years behind" his peers, which often kept him from "fitting in" and being accepted.

Elliott was assessed at a private practice for the first time on his fourth birthday with results indicating a sensory processing disorder and signs of early giftedness. Difficulties in preschool prompted an occupational therapy evaluation by the school district resulting in recommendations for the family. IQ testing by the district took place when Elliott was in kindergarten. Ellen shared that the school psychologist, who conducted the IQ testing, indicated she had not seen scores like Elliott's in the 21 years she had been testing students in the district, adding the family should brace for a challenge and prepare to advocate despite the school reputation for excellence and student success. Although the school identified the need for ongoing occupational therapy for Elliott, administrators determined he did not qualify for services because his scores were too high and he did not have a qualifying diagnosis. As an alternative, the school psychologist suggested a 504 plan to gain access to a gifted pull-out program, adding Elliott likely would be looked over for gifted programs because he presented so differently than traditionally gifted students. Ellen added the elementary school principal tried to convince her a 504 wasn't necessary. She persisted, and Elliott was granted a 504 plan that included extended time for assessments and preferential seating for first grade through high school. Continued difficulties prompted reassessment in middle school which resulted in ADHD and autism diagnoses. Elliott was assessed again during his sophomore year in high school, which resulted in ADHD and being "close to the autism spectrum." The licensed psychologist/clinical neuropsychologist who assessed Elliott at that time indicated the family had a potential lawsuit

against the school for their handling of Elliott's case. Ellen and Edward indicated awareness of and adherence to the 504 plan by teachers as "inconsistent" throughout Elliott's elementary, middle and high school experiences, which prompted the need for continuous advocacy and engagement. They also described the school district's repeated attempts to "whittle away" at Elliott's 504 over the years and some school years when required 504 plan reviews did not take place. An IEP was not pursued.

Elliott described his school experience as "mostly unpleasant" and that he "occasionally" felt comfortable at school, noting that when there was opportunity to engage in small group activities and "someone to talk to", he was most comfortable. He acknowledged his needs differed from those of other students and that the school "does what they think is enough" for him, although he felt his needs were unmet. When asked to talk about the effectiveness of his 504, Elliott shared that extended time for tests was helpful while preferential seating was not. He described wanting to sit next to someone "who just is really all about the class" so they could help him learn, yet he indicated "there's not somebody like that in every class." He went on to share that comprehension was not an issue for him, but rather the "sitting down to do things" was difficult as he often would become distracted or disinterested in the task at hand. He described being able to learn "anything that was told to me by teachers" without "any real effort," and went on to share that he wanted to do the work and considered it important yet saw school as holding him back while he "waits patiently" to graduate from high school. He described seventh grade math class as when he "really started to learn some things" and fall semester of twelfth grade English class as being his "favorite class ever" because of the project-based curriculum and opportunity to learn about himself and others, noting he finally learned something that he could "use in life." Elliott acknowledged his parents' advocacy as significant throughout school and described them as serving as his "frontal lobe" for many years.

Ellen described Elliott's school experience as "moderately difficult" with strength-based, talent-focused opportunities as "rarely" offered. Edward describes Elliott's school experience as "very difficult" with strength-based, talent-focused opportunities as "occasionally" offered. Both noted the professionals working with them to assess and provide recommendations for Elliott provided conflicting information related to diagnoses yet agreed he was extremely bright. Ellen and Edward believed individual teachers were the most effective avenue for support yet described teachers as "left on their own" with little to no help from the district. When Elliott was younger, Ellen provided an "intro letter" to his teachers describing his twice-exceptional profile and detailing Elliott's need to move around. In the letter, she explained that although he may appear to be distracted, he likely "was listening and absorbing what was being taught." Many teachers expressed gratitude for the information, however, many did not realize Elliott had a 504 plan in place until they received the letter. Edward described Elliott as often very frustrated, which led to destructive behaviors at home up until early high school. Both parents described reports from high school counselors as indicating Elliott was "fine" and "doing great" despite mid-semester grades of Cs and Ds, which they attributed to an ongoing struggle to complete and turn in assignments. Ellen and Edward shared their differing approaches toward Elliott and detailed extreme exhaustion, worry, and frustration about the level of involvement required to keep Elliott on task and engaged with school. They described Elliott's school experience as having significant impacts on their home life, as the majority of their attention and energy was directed toward Elliott's needs, leaving them with fewer resources for their other two sons. Ellen indicated she has been unable to work outside of the home due to the level of attention required. Both referred to recommended interventions from school personnel and clinical professionals as effective only for short periods of time, resulting in a constant need for them to find new solutions. Ellen and Edward described unsuccessful efforts to secure an IEP for Elliott and

significant regret over not being able to access the school services and support that could have improved life for Elliott and their family.

Ethan, Elliott's neurotypical sibling, is three years younger and described Elliott's school experience as "extremely difficult" while describing his own as "slightly difficult." He shared that he had a difficult relationship with Elliott except during the summer months, when they were not in school and Elliott seems generally "happier." Ethan added that if his brother would have "had a friend, just one friend" things would be "exponentially better." He shared hope that Elliott would find a good friend and do well and "flourish" in college and in life, adding that an "epiphany moment" would be necessary for Elliott to do so. Ethan described their parents as having little to no patience left after focusing so heavily on Elliott's needs. Ethan also described feeling more prepared to understand and empathize with other students who experience difficulties because of his lived experience with Elliott.

All family members mentioned Elliott's connection with his seven-year-old twice-exceptional brother, Evan. Evan was not interviewed for this study due to his age. Ellen shared that when Evan had difficulties or a "meltdown," Elliott was "the one who can bring him out of it." Edward shared that Elliott and Evan can spend entire days together doing creative things, like collecting and studying spiders and their habitats, adding that Evan often got upset and defended Elliott when difficult situations arose at home. Elliott and Evan have different twice-exceptional profiles, yet Ellen and Edward plan to use everything they've learned from Elliott's school experience to forge a different educational path for Evan.

Elliott decided to attend his parent's alma mater for college. He will be a fourth-generation family member at the institution as an undecided major. His family is cautiously optimistic about the future, and Elliott described looking forward to being responsible for his own success and his belief that he will succeed. When asked about one thing he would

change about his K-12 school experience, he expressed sadness over a lack of social acceptance for people like himself, adding he wondered if he would be a “different person” today if the world were more accepting.

Themes from the Findings

Additional study findings sorted by major themes with sub-themes (Appendix Q) emerged from the data, which were (a) issues with access to appropriate learning environments, (b) lived experiences of family members, and (c) influence of experiences on emotional, behavioral, social, and mental health.

Issues with Access to Appropriate Learning Environments

Although each family reported unique experiences related to gaining access to learning environments that appropriately challenged and supported their twice-exceptional child, they shared many things in common, including environments that lacked focus on strengths, talents, and interests; inflexible and limiting standardized curriculum; incomplete, inconsistent, and confusing observations and psychological assessments; ineffective and disrespectful handling of 504 plans and IEPs; positive and destructive experiences with teachers; and exhausting experiences with advocacy.

Lack of Focus on Strengths, Talents, and Interests

All families described difficulties finding learning environments where the primary focus was on their child’s strengths and interests. Unsuccessful attempts to find these opportunities in school drove the majority of families to invest significant time and effort into searching for other schools and advanced learning opportunities outside of school.

Failed attempts to gain access to advanced math in first grade for Adam were the source of great frustration and aggravation for Ann and Arthur. Ann described what she saw in her son as he was forced into the mainstream:

I think his frustrations started as he got into school, and then he could see that he wasn't like all the other kids. You know, in daycare, they were kind of all the same. They all learned their words at the same time, you know, I mean, like, they learned a lot of stuff together, but then, but then he was ready to take off and fly. And we didn't know how to help him. We kept going to the school and they wouldn't, couldn't, didn't help us. And so and so, it just became a frustrating situation for us all, because we were like, you gotta go do this, buddy. Sorry.

Deborah recalled especially difficult experiences for Dana in middle school, as their learning disabilities masked their intellectual gifts:

Because they performed so average, that was also part of it. I mean like nobody was really acknowledging, particularly in middle school, nobody was really acknowledging strengths or weaknesses, you know, so they sort of floated in the middle. I don't think that was great for their self-confidence either. There was a disproportionate focus on the ADHD, for example, because they had a 504 plan. Their teachers knew that, right. And some teachers, they'd have no idea what ADHD is or what that means for a kid or how they can work with that as a teacher.

Barbara recalled her disappointment and frustration after trying to convince their school district to start a gifted and talented program that Brian could access. The district finally agreed, however, it would not be available to Brian:

He was already in like 10th grade, and they started it at seventh grade or fifth grade. They were starting behind him. So, I met with the Gifted and Talented program coordinator to talk to her about his experience in school and what was frustrating. I tried to help them [by saying] here's been my experience. Here's where I'm frustrated as a parent with a kid who has these test scores.

Inflexible and Limiting Standardized Curriculum

All families described their children as needing more intellectual stimulation than was offered in traditional learning environments. Three families reported realizing early on that the standardized curriculum of their public school district was not rigorous enough for their child, which detrimentally impacted their twice-exceptional child's motivation for learning.

Arthur recalled an early experience with attempts to access more challenging math for Adam:

I'll say, first grade, he just wasn't being challenged academically enough. And there was always an excuse as to why he couldn't get better material. His first grade teacher actually told us she wasn't supposed to give him second grade math, but she would as a reward. So as long as he did his first grade homework, she would get him second grade math to do over the weekend. She's sneaking this stuff in telling us don't make any show of it. Don't say anything of it. I'm not supposed to do it. And to me, it is aggravating because, like, why not? Why can't we help this kid? If he was at the other end of the academic spectrum, then we'd be doing everything we could to pick him up.

Ann recalled Adam's frustration over the standardized curriculum and "busy work" that often had no bearing on future learning or skill development:

They told the kids every year you're gonna need this next year, you're gonna need this next year. They scared the kids. You have to know cursive, you have to know these things. And so he would work really hard. And he would learn what they said he had to learn for next year, and then there was nothing. There was no correlation. None whatsoever. And so that was very frustrating to him. And he quickly believed that he was being lied to. And he felt slighted. And that happened over and over and over.

Ann went on to describe the longer term impact of denying Adam advanced work and regularly requiring completion of content already mastered:

His appetite for learning was really, really big. But the more times he got turned down, the dimmer that light became, which was super discouraging. His desire to, you know, grow and learn, experiment and see the world dimmed significantly as he continued to be forced into the mainstream. I remember our kindergarten teacher in tears, because they didn't have anything more challenging for him.

Brian's family articulated similar experiences with their suburban public school district. Bill recalled observing his son losing a love for learning as the traditional curriculum confined Brian to learning what everyone else was learning:

I remember his attitude deteriorating as he was forced to take classes that he just either didn't see the need for or didn't want to take. And until you get to high school, and even probably through sophomore in high school, you don't really get to choose your classes. He was always one who wanted to go his own way, and the fact that he couldn't really rubbed him badly.

Brian recalled an excruciating 14 years of schooling, describing his overall school experience as:

Sitting and waiting for everyone else to catch up. That was pretty much it. That was my entire experience. The teacher would say, go do this thing. I'd do the thing in three quarters of the time it took everyone else, and so I just sat and waited and was kind of bored. Again, being bored, and having not found that escape into reading yet in elementary school, I acted out a lot, and I got in a lot of trouble.

Three families left traditional school systems for gifted and talented programs in the hopes of finding more appropriate intellectual stimulation. Ann indicated their family was

“forced to choose” between support for their child’s differences and opportunities for accelerated learning, adding “we couldn’t have both.”

When asked about their decision to move Claire to a gifted and talented school, which Cora described as a huge mistake given the picture of Claire’s learning profile was incomplete:

She's super gifted, highly gifted. I think she's in the 99th percentile. We sent her to a gifted school, and it was probably the worst thing we could have done to her because we didn't know that she was necessarily twice exceptional. And I mean, not in the twice-exceptional, not ASD and gifted, not ADHD and gifted, but [specifically] SLD and gifted. So we didn't realize that she was dyslexic.

When describing Dana’s gifted and talented school experience, Deborah spoke about her own personal attachment to the school and awareness that her child was struggling:

The place where she actually had some of the worst experience was in that particular school. It was an interesting experience, in retrospect, to have that like homogenous group of like, gifted kids. I'm not sure it was the best thing, ultimately, but there were so many things I loved about that school. And I still love that school. Right? But I don't know, like, maybe I shouldn't have. I just knew that they weren't happy in the school. We're also just trying to find a place where they could be more content. And so there were certainly things about that school that were good, but it also hurt their self-confidence. Like that math thing. They have very little confidence in their ability in math.

When asked to describe Adam’s experience moving from a traditional education system to the first of two gifted and talented schools, Ann described the lack of a support system and the shock of a rigorous shift in curriculum:

It was terrible. He had a personality conflict with one of the teachers. And later, one of his friend's parents told us that her child had said, "Oh, yeah, Mr. Whatever totally bullies Adam in class all the time." He didn't have any friends there. He didn't know anybody. Other kids had friends there. So other people had a much better support system than Adam did. And the work was overwhelming. He went from you know, he went from like, zero to 60 [miles per hour in pacing speed] and was completely unprepared for that. And without a lot of support at the school, we were just trying desperately to figure out what to do.

Not surprisingly, all three families left the gifted and talented programs within two years and headed back to public schools.

Incomplete, Inconsistent, and Confusing Observations and Psychological Assessments

All parents mentioned observing early behaviors in their child associated with signs of giftedness and learning differences, however, the realization that their child was twice-exceptional didn't come until much later. In most cases, parents talked about family members, caregivers, or early childhood development teachers as pointing out superior intelligence, developmental delays, or both. Parents described feeling intimidated by the suggestion of giftedness, defensive about suggestions that there might be developmental issues, and puzzled about the possibilities of their child experiencing both.

Ellen described the significance of a difficult conversation with her mother and her own realizations about Elliott:

When he was about nine months old, she said to me, "I think he's autistic." And I was like, you're insane. You're a horrible person for trying to tell me when he's nine months old. Nobody can diagnose that at nine months old, at least they couldn't 17 or 18 years ago. A lot has changed. And a lot changed between Elliott being born and Ethan being

born three years later, like those child development surveys they give at every well-child visit changed a lot. A month shy of his third birthday, I realized watching other kids his age, those kids could walk alongside their moms and hold their hand, and Elliott couldn't do that.

Conflicting observations caused confusion for families, and parents struggled to know who to listen to. Ellen recalled a distinct shift in the conversations with daycare providers and early childhood development teachers when Elliott was very young:

And daycare told us that when he was 18 months old, like you should have Elliott tested. I think he's crazy smart. And I was like, yeah, whatever. Every kid is smart. But in preschool, they were like, there's something weird about him. He'll go into this mode where he looks like he's completely zoned out. And I don't think it's a seizure, but he'll be completely zoned out. And it's like he has no idea what's happening. But then you'd ask him what just happened, and he can tell you. It's really weird.

In all five cases, parents felt pressured to seek psychological assessments. In some cases assessments were conducted in order to gain access to gifted education programs, while in others, concerns regarding developmental delays drove the parents to look for answers. Some parents struggled to decide if assessment was the right thing to do for their child. As Bill described, he wasn't sure he wanted to know the answers:

But, I was personally very reticent to get him tested. You don't know what you're going to find out and oftentimes there's a big fat label associated. I did not want to see him get labeled early on like that, but with my mother being the master teacher having taught for 42 years, we eventually acquiesced. And sure enough, my mother was right. He was exceptional in a couple of ways.

Complex twice-exceptional profiles and difficulties in school began to surface, and the majority of families obtained multiple assessments for their twice-exceptional child over the course of PK-12 experience. They described significant and often perplexing inconsistencies in IQ and diagnoses, which made decisions incredibly difficult for them.

Cora talked about the significance of the missing parts of Claire's learning profile and the lack of understanding by teachers in the classroom:

We didn't realize that she was dyslexic. So she's hyperlexia. But she is also severely dyslexic. And we didn't know that because she's a stealth dyslexic. And because she taught herself to read at two and a half, by the time she got to school, she's a sponge. She just picked up on sound systems, but she doesn't necessarily sound things out. Well, she does, but then she doesn't have the reading competency. So, she doesn't have the underlying stuff that you need to understand inference. There's a whole hour-long story on that. But the teachers didn't understand this.

Edward described a winding path of disagreement among professionals who assessed Elliott over the course of several years:

So, back then when he was five, they said yeah, there's some things that we can work on. So we took him to OT, and those kinds of things for the more large motor, small motor things. He's been retested a few times. And then ADHD. I think that was the end of elementary school or first part of middle school, and then maybe his sophomore year, we did some testing. They said, "He's close to the autism spectrum. Not sure but probably. We're gonna give him this diagnosis so we can get more help." But then his ADHD coach said, "I think you are just ADHD and not autistic." Different people have given different opinions on that.

All eight parents reported that at least one assessment revealed an uneven, twice-exceptional profile that included IQs in the gifted to highly gifted ranges. They eventually all received a diagnosis of a physical or mental impairment which substantially limited one or more major life activities applicable for a 504 accommodation plan under the Rehabilitation Act of 1973. Four families received assessment results that included a diagnosis applicable for an individualized education program (IEP) under the Individuals with Disabilities Education Act (IDEA).

Dana's first assessment in third grade revealed giftedness only, and Deborah acted on that by moving them to a gifted and talented school. The experience was not what she expected, and it turned out to be a very difficult situation within the first year. She described a teacher destroying her daughter's confidence and the path back to assessment:

In fifth grade things got really hard. Dana probably told you about the math teacher and the whole thing with the math class, and that was even in a gifted and talented school, which is kind of sad. That particular teacher just didn't get it really at all and thought Dana was lazy. And he pretty much said as much to me. That's when I got very involved. We had Dana evaluated again, and I needed to do it anyway because I was looking at a private school, and so I needed to go get an updated WISC. That's when they [the evaluators] said, you know, "Here's what else is going on with Dana." Scores came back dramatically different on that second one, like much lower and really messy. That's when Dana got the ADHD diagnosis.

Of the twice-exceptional participants diagnosed with autism, all were diagnosed in late middle school or early high school, often after years of difficult school experiences and parents chasing down solutions and resources based on incomplete assessments. Nearly all parents described not knowing the full picture of their child's profile early enough to avoid exposing them to traumatic experiences.

Cora described realizing the “off the charts” stimulants for ADHD weren’t helping her child or improving her school experience:

It wasn't managing the developmental stuff. It wasn't attentional issues. So, we switched to someone else, and they put her on some other medications. Claire has seriously been on every ADHD medication ever made. She's tried them all. And we finally took her off and found our way back into testing. And so this was probably when she was in sixth grade. And this, by the way, you're asking about trauma? All throughout this entire time she had school trauma, she doesn't have trauma at home. It's only things that are happening at school.

When reflecting on the experience of putting the pieces of Dana’s twice-exceptional profile together over the course of several years, Deborah recalled having a gut feeling they didn’t have the full picture:

Dana was unhappy, and I knew that there was more going on. So, we had to keep looking, figuring it out. I think there's something to be said for trusting your gut. If it doesn't seem like the right identification or you're not getting the information or the right answers, then keep looking because it could still be out there.

Deborah pulled Dana from that difficult experience at the gifted and talented school and headed back to public school where she immediately secured a 504.

Ineffective and Disrespectful Handling of 504 Plans and IEPs

Of the parents whose children had 504 plans at some point, only Deborah indicated the plan was helpful and managed appropriately. The other families described significant issues with a lack of receptivity when presenting assessment data to school personnel, obstructive and practices by school administration, inappropriate administration of plans in place, and missing accommodations and services that would have benefited their child and their families.

Brian's parents described his teachers as becoming more and more frustrated with his boredom in class, which prompted them to head for an assessment. They hoped results would help them secure advanced learning opportunities for Brian but also acknowledged results would be necessary for them to pursue a 504 should they need to. Barbara described the discouraging experience of sharing assessment results with the school:

We took it to the school principal, and they [school personnel] didn't seem too happy or enthusiastic about accommodating his needs. The doctor had warned us about labeling. If Brian got labeled in a certain way with both of us working full time, I would have to stay on it. Is it worth the fight? Is it not worth the fight? As long as he stays interested, is making friends, learning something, having experiences, then, okay, we'll keep going.

Barbara and Bill weighed their options, considered implications of labels for their son, and decided it was best not to pursue a 504. Brian completed his K-12 education in the same school district with no plan in place.

Ellen described an upsetting and patronizing meeting with the elementary school principal when she went in to discuss Elliott's assessment results and secure a 504 plan:

In kindergarten, they told us, "Nope, [you] can't do an IEP, but you could do a 504. So, I kind of pulled some things together and went in to do the 504 paperwork. He was a really charming, handsome, older man. And I think he used that to his advantage in certain cases. "Our teachers really work together, and we communicate, and you don't need a 504. You don't need it, we know what's going on, we'll work with you. It'll be just fine." I went home bawling.

Ellen and Edward decided to secure a 504 plan for Elliott despite the principal's attempts to convince them the school would manage his needs without one. The plan remained in place

through 12th grade, and Elliott struggled for the duration. Edward described the ineffectiveness of the plan and frustration that it didn't better support his needs:

He's very good at taking tests. He knows material. In the AP environmental science, he got a couple of tests 99 out of 100 or 104 out of 100 because he got extra credit. But his reading guide would be half done when turned in, so he got like a C on that, because he didn't do the work. He doesn't like writing. That's hard for him. Takes a long time. He was so behind on schoolwork last spring that he would just not do anything. He'd go to bed early and would sleep just to avoid his work. But it just kept piling up and piling up and piling up.

There were no accommodations in Elliott's 504 plan to support his issues with executive function, and repeated requests for more support from the school were denied. Ellen explained how school personnel justified the 504 and IEP denials going back to elementary school:

He didn't qualify because he wasn't behind enough. Well, he's getting A's. He doesn't need an IEP. He's getting A's. He's doing fine. But do you know the hell we go through at home because he cries on the floor for half an hour before he starts his homework? I always felt like he needed more than what he was getting. He really could have used occupational therapy and social work. And, I think that would have helped with the executive function skills long term. Right? That should have been happening all along. And the school did crap in that department. Just nothing.

Elliott tested in the top 1% on intelligence assessments, yet Edward went on to share uncertainty about Elliott's fate in his last semester before high school graduation:

He's just not turning in the labs. He's not using his class time, so they just got half done. So we assume he's gonna graduate. But you never know. I think they're gonna pass him because he does know the material.

The clinical psychologist who evaluated Elliott in high school told the family they had a lawsuit against the school if they wanted to pursue one. Edward and Ellen decided it was too late given he was so close to graduating. The couple learned from the difficult experiences with Elliott and planned to approach advocacy for their youngest son, who is also twice-exceptional, in a very different way.

Three more families reported similar experiences with school administrators denying access to support services despite them providing necessary assessment data and qualifying diagnoses. Similar to Edward and Ellen's experience, the schools were said to defend the denials based upon academic performance falling above standards. Cora described a similar experience when a public school denied Claire access to speech services because her 8% test score exceeded the 6% cutoff. She was doing too well to qualify.

Positive and Destructive Experiences with Teachers

Families reported a variety of circumstances and outcomes related to experiences with individual teachers. In all cases, families indicated individual teachers either made or broke the learning experience for their twice-exceptional children. Each talked about teachers who made significant and lasting contributions for their child resulting in great relief for the family. Each family also described teachers whose choices wreaked havoc on the child's self-esteem, motivation in school, and joy in learning.

Families shared experiences with individual teachers who had made significant efforts to understand, support and appropriately challenge their child, and described them as making positive differences in their child's school experience and their family's lives for the period of time in which they interacted, going so far as to suggest the teachers provided a haven from the difficulties their children typically experienced in school. The twice-exceptional participants

indicated feeling most comfortable and capable with teachers who expressed caring and genuine interest in their abilities, needs, and developing skills.

When asked about his favorite teachers, Elliott described them as providing interactive group learning opportunities and that which he could apply to his life:

I took a senior English class, and that was maybe my favorite class ever. Why? I learned a lot about myself and a lot about my classmates, it was very project-based. A lot of discussion. I think it was almost everything we did. I think it was three days out of the semester when she was teaching the whole class. Everything else was working in groups and these projects were all very meaningful, at least to me. Then, in the second semester lit [class] I feel like I finally was able to start using what I learned last semester from that class.

Claire described not being treated as fairly as her peers because of her differences, adding:

I've already mentioned the fact that the teachers don't treat me very fairly. But I've only had, as far as I can remember, four teachers that have actually understood that I have learning disabilities and need to be in a different room during the test and am allowed to listen to music. They give me good notes, like good instructions.

Rather than pointing to a specific teacher, Dana described their best case scenario as highly dependent upon the teacher understanding their needs and abilities:

Most of the teachers that I like teach the subjects that I like. But the one teacher, [of] the few teachers that I really liked, who taught subjects that I really hated, understood that no matter how hard they were going to try and make me do something, if I said I wasn't going to do it, I wasn't going to do it. And they found a workaround to that. They were like, "Okay, here's what we want from you, we want you to pass, we want you to show us

that you have the knowledge necessary to complete this at a competent level and to succeed later on using this knowledge. And that's the only thing we need from you. And we're willing to stick by and help you if you need it.”

Brian mentioned math and band teachers who had a passion and enthusiasm for the subjects they taught as among his favorite and most inspiring teachers. He also shared details about his very favorite teacher, explaining that he offered more than just a good experience in class:

Give the man a shout out because he is probably one of my favorite teachers of all time. I'd give him a medal if I could. Mainly because he kind of let me work at my own pace. If you got it, then you got it, and I don't need him to teach me. He had no problem with me, you know, reading during class if I had already gotten the material, or coming in at lunch if I didn't. This class was pretty much always open to me. I spent a lot of my time there in sophomore year of high school in his classroom. During lunch I'd help him teach his other students or I would just sit in because I knew nobody at lunch and I'd rather spend my time in his class than alone.

A majority of parents described their twice-exceptional child's favorite teachers as those who treated them with respect and didn't talk down to them. Ann provided insight into the teachers who were most influential in Adam's educational journey and created the most enjoyable learning opportunities indicating, “His favorite teachers don't blow smoke up his ass.” Bill reported Brian's favorite teachers were those “who allowed him to ask questions” and really dig into a concept or theory, with freedom to debate its logic and validity. Ellen recalled Elliott's early years in school and shared:

There have been a few teachers and I would say [in] lower elementary that worked really hard and knew him. Actually his fifth grade teacher has since retired. I laughed and said,

it was because of Elliott, but it wasn't. She was about the age that somebody might retire. I often felt like it was because they were spread so thin that they couldn't take the time because he is so complex. But there were a few teachers over the years that really knew him. But then he would move on to the next grade.

All parents and twice-exceptional participants indicated a high percentage of teachers did not understand twice-exceptionality or how to approach a unique and complex learning profile with many teachers not believing their child was gifted. Families described teachers marginalizing or ignoring their child in a learning environment and attributed it to the teachers not understanding the child's differences, abilities, or needs.

Ann described most teachers were frustrated and not equipped to have a kid like Adam in class because he was so far ahead of his peers intellectually. She indicated:

Because he would ask questions, and he would jump to other logical things. And he could take things, the concept that they were trying to teach, Adam could take it down the road around the block, and then back it into the garage, you know, and so he was, you know, difficult to have in class, I think.

Deborah recalled needing to talk with a teacher about the disrespectful and damaging nature of his approach toward Dana's struggles with anxiety and ADHD:

I mean, I had to sit down with a teacher in middle school and just be like, "Hey, you're not getting it, okay? Like this tapping, tapping on the desk to get their attention. That's not cool. That's not what you do. You know, if they could pay attention they would. So, perhaps we need to talk about some other ways to make sure that they're engaged, but you tapping on their desk is not the way to do it.

When asked about his favorite teachers, Elliott shared an optimistic attitude despite his journey:

This one teacher, he timed everything and would just give so much work that could be done in a different way and take much less time. And he would talk for the whole hour in class. Just the way he delivered that information when he was talking, I'd have to go home and learn it all by myself.

Barbara described a difficult situation with a teacher who was not thrilled about having Brian, a middle schooler, in her high school math class:

The teacher had absolutely no interest in having him and two other seventh graders in her first hour. It was a flipped [classroom] and had a huge online component. So he had to come home and go online and learn geometry and then go to the class to hear the lecture or whatever it was, right? And again, geometry was not how his brain worked. He was very frustrated. He was struggling with the online component. We sat on the couch together, and we went through the exercises and the problems together. At the first conference, I went to meet with that math teacher and said, "He's struggling. He's usually very good at math, and the stuff usually comes easy to him. So I don't know what the issue is."

Barbara described the teacher remaining disinterested in Brian's difficulties and offering no solutions, but rather leaving Barbara with the sense that she was not going to "spoon feed" Brian because math was supposed to be hard. Barbara noted that the school willingly did so with students who were below average and struggling in school, but that support was not available to her accelerated son.

Reflecting on why Adam had such difficulty with teachers, Ann explained:

I've always talked to him like he mattered. We have always let him vote, we always let him have an opinion, we have always let him make choices. And so when teachers didn't follow suit with that, when teachers didn't talk to the kids as if they were real people, like

[those] in a grocery store or places like that. They're just people who aren't good to kids, who don't talk to them as if they matter or have an opinion. And at our house, we think that that's really, really wrong. And so, Adam has grown up like that.

More stories surfaced during the interviews. Cora described refusing to allow teachers to use behavior charts with Claire because of the trauma her daughter endured by “no longer being on the good list.” Deborah described a traumatic experience with a fifth-grade math teacher who, instead of recognizing Dana’s issues with ADHD, openly referred to her as “lazy”, crushing Dana’s belief in her abilities in math. That experience continued to affect Dana’s self-confidence in math five years later.

Exhausting Experiences with Advocacy

All parents reported being very involved in their twice-exceptional child’s education and advocating for their child’s gifts and differences for as many years as they’d been in school. Cora shared her early experiences of trying to advocate for Claire’s strengths and weaknesses and how her advocacy changed over the years:

In the beginning, it was hard because I didn't have other kids like this. I didn't know what gifted was. I'm a person of color and people can't see me. They never even flagged Claire as gifted until fifth grade. And, she had a teacher who suggested, after a really terrible year, that maybe we should look into the California Association for the Gifted. I still didn't know what that was. And so advocacy before was very personal, and now after some time, advocacy is more about Claire’s life.

Parents described repeatedly advocating for their child with school administration and reported significant frustration and difficulty related to their attempts to secure accelerated academic opportunities and support for learning differences. After striking out with the school to

secure advanced learning opportunities for Adam, Ann and Arthur decided providing assessment data reflecting a high IQ would help. Ann recalled:

We had hoped that it would open doors for us at school. We had it added to his files, thinking that teachers would go through [it]. At the beginning of the year, you know, maybe we could pull in counselors and things like that. [Doing this] did nothing for us in the school system. It helped us get into the curriculum that we wanted to at Northwestern, it did get us into that program. And that was a good program. But it didn't do anything as far as school went. And it probably motivated us to look harder, in more places for challenging work for him.

Ellen shared feeling “very jaded” when it came to their school district, which was held in high esteem for its high-performing schools:

I feel like our school district has a certain mold they expect students to fit into, and I know their tagline for public schools is like helping every student reach their potential or something ridiculous like that. And I call bullshit.

Most parents indicated their twice-exceptional child advocated for themselves in school as well. Edward described Elliott as decent at self-advocating for himself and willing to admit he hasn't done the work he needed and added, “He's not afraid to talk to the teacher about what he hasn't done and how he can make it up because he's always been able to advocate for himself.”

The twice-exceptional participants recognized their parents as being their most important advocates, and parents described efforts to teach their twice-exceptional child how to advocate for themselves in school. The twice-exceptional participants described their efforts to self-advocate for their needs as inconsistently successful and noted reliance on their parents for help with advocacy. All eight parents shared that the child was most successful advocating for themselves in high school, with one of eight adding elementary and another adding middle

school. A father described his son as a better advocate for himself than most kids because, “He’s not ashamed to say I didn’t do it” when referring to the unfinished course work.

In four families, the mother and father lived in the same household as the child, and the mother seemed to serve as the primary advocate. Dana’s parents were divorced, and Deborah served as the sole advocate. In three families with a mother and father participating in the study, all three were regularly involved in advocating for their child and described advocating as a partnership with the mother.

Deborah shared her thoughts on the realities of advocacy for parents of twice-exceptional kids that extend beyond school:

You're never done advocating. There's always going to be that part [of advocating], whether it's at school or with family members, or if it's not with a family member then it might be with a friend. I think you always have to get real comfortable educating other people about who your kid is because a lot of them are not going to get it and then the rare people that do are a real gift.

She went on to say advocacy efforts went beyond school and into family life. Deborah described struggles with family members:

And it's just very hard to get people to come around, and particularly when your kid is neurodivergent. Especially if they're questioning their identity or questioning their gender, and questioning all these things. Like the grandparents and all that. It's just a lot. You have teachers at school who don't get it, but then you come home and you have people who don't get it either. So it's a lot.

Once Deborah realized Dana wasn’t just “looking for attention or being overly dramatic” about difficulties at school, she made the controversial decision to pull them from school altogether. She described defending the decision with many people, including her own parents

and Dana's biological father. They did not understand why she would take such a drastic step.

She added:

I had to defend it to everybody, but it was actually really empowering. It just made me more convicted about it. And Dana saw me doing that, advocating for them with a lot of different people in a lot of different ways.

Difficult Lived Experiences of Family Members

Because the focus of this study was to explore what it was like for these families to live a life riddled with difficulties related to school, the qualitative approach allowed for rich and vivid descriptions of the struggles each family faced. The following includes excerpts of the family's lived experiences represented by different voices: the twice-exceptional participants, parents, and siblings.

Twice-exceptional Participant Experiences

On the questionnaire, four twice-exceptional participants indicated their school was "very unpleasant" and one indicated "mostly unpleasant." When asked to indicate which grade levels were the most difficult for them, they responded K-12, K-5, K-8, K-8, and 9-12 for families A-E respectively. During the interviews, each twice-exceptional participant was asked to articulate their reasons for feeling the way they do about school. Portions of their responses follow:

Adam expressed frustration around the amount of repetition and irrelevance in school, stating:

I feel like if I took the time to learn something that I shouldn't need to worry about spending the time to learn it again. A large majority of my classes I didn't feel were very useful. English, every year of high school has pretty much been the same grammar curriculum, just reading some different books and writing similar essays about them every time. So that felt really copy pasted, and not very beneficial.

Brian reflected on his fourteen years of schooling and described his experience as follows:

I spent the entirety of my public school career waiting for it to be done. That's actually where my reading came in, call it a problem but it really wasn't. You know, it was more of a coping strategy to just deal with the boredom. Crack a book and read quietly while everybody else was still working on their tests or whatever. I had sort of learned how to play the game, so to say, you know, sit and wait, take the test, read in between everything that doesn't interest you and just take this, you know, one day at a time.

When asked to describe how her school experience was different from that of others, Claire indicated:

I blocked out most of elementary school except for first grade. First grade wasn't that bad. Fifth grade, I didn't learn anything. Fourth grade was a nightmare because my teacher was like hardcore for fourth graders. Third grade, I hated my teacher. Second grade was the same teacher as third grade. First grade is the only time at that school I remember in vivid detail, or not vivid detail, in sort of detail. It's mostly my teachers that I've had an unpleasant time with. My teachers wouldn't follow my IEP, then treat me different [ly] than all the other kids, maybe, because they knew about my IEP.

Cora described Claire's journey with the following:

Once we figured out that Claire wasn't gonna be like the other kids, it became a lot easier to just embrace that. You know, I'm a real huge advocate for diagnoses even though some people are a little wary of why that's important. But I think that's important because it gives people a place to land and gives them an identity. And so, I think in the beginning, it was really hard [for Claire] because she didn't [have an identity]. I didn't know there were other kids like this all around us. It was just Claire.

When describing their school overall school experience, Dana reflected on the variety of learning environments experienced over the years:

So I've had seven schooling experiences, and I've been to six separate schools. But most of them weren't super great. There's a reason why I left a lot of them. There's a reason why I've been to so many. There are a lot of environments and a lot of people at a lot of places that really did not get me and really tried to force me to be something that I wasn't. Most of my life, most of my greatest anxieties have come from school. Most of my greatest insecurities have come from schooling. Schooling has definitely been a huge part of the most negative part or aspects of my life thus far.

Elliott contemplated his K-12 school experience and described his overall perspective of it with the following:

I feel like the school does what they think is enough. But when it's obvious that I'm having trouble with something, they kind of go back to the same solutions as before. I could sit for hours and sometimes I do sit for hours and learn about music or fly fishing. We feel like it's, for a long time it's been, school is holding me back, keeping me away from these things. I just have to be patient to be out of high school before I can start exploring what I really care about.

Elliott's parents indicated he was in the top 1% for IQ, yet Ellen summed up her son's school experiences as, "He was stifled by school, by the school community, because he didn't fit into the smart kid box. The teachers haven't connected with him. He's always passed over."

Parents indicated their children's lived school experience negatively affected their self-confidence and used adjectives such as difficult, frustrating, boring, underwhelming, disappointing, arduous, stifled, one-sided, stressful, isolating, and lonely to describe it. They reported their child's frustration with school as affecting their home and family life in significant

ways, detailing how daily routines revolved around supporting their child's needs and often were disrupted by things such as phone calls from the school, meltdowns over homework, and refusal to go to school.

When Brad, Brian's older sibling, was asked to reflect on his brother's lived experience with school, he commented:

It was almost like school was kind of, I don't know if this is accurate, but I would say was beneath him. Because at least that's the way he acted about it. He didn't really like most of his classes, especially because the American education system is mostly like—I talk and you listen—sort of scenario. And Brian doesn't do that. Brian learns with his hands, and always has.

Brad went on to add:

I guess he's kind of a minority. I'm in the majority of people who don't get it, right. I'm in the majority of the people who try, who benefit from the like, “listen and understand things”, but Brian processes it so quickly. I'd imagine that he could probably pick up whatever material in however many minutes and then be good to go for the test. Whereas everybody else needed to like practice and learn and practice some more, and listen to the teacher some more and ask for help. It's mostly because high schoolers have, especially nowadays, the attention span of goldfish, at least I did. But I think Brian would actually intently listen and get it and then be bored for the rest of class. So that's why he was so uninterested about doing it, for he was very, very adamant near the end of his high school career that he did not want to go to college, not only for that, but he can't handle another four years of people droning at him.

Ann indicated that Adam struggled when things did not seem logical, adding his advanced intellectual abilities and emotional immaturity were at “very different levels.” She

went on to say, “While he was ready to handle more difficult work, he didn't always demonstrate that emotionally in class. He didn't always keep things together.”

Deborah shared her thoughts on the impact school has on kids and, in particular, impacts on Dana:

I think that the school environment is huge, it can crush their confidence, or it can totally build it up. They have a lot of fears, like existential things, threats that are probably [unlikely] to happen. They're always kind of thinking six steps ahead. I think that's a big part of it. It's just sort of this anxiety. It's not the school so much, just more internal where that's coming from.

When commenting on her son's overall experience, Ann shared, “Once he figured out how things work, he got emotionally better but lost his appetite for learning,” explaining that no learning environment had taken care of her son intellectually and emotionally. This was a common experience for all parents.

Parent Experiences

All parents described difficult experiences for themselves, their twice-exceptional children and, if they had them, their other children. The stresses of school-related issues were difficult to manage as they and their children were often misunderstood by school administrators and teachers. Three parents mentioned not having the knowledge, information and resources they needed to improve the experience or make informed decisions. Frustration over lack of guidance was a common theme during all parent interviews.

Ellen described an interaction with a private practice social worker, who after listening to her description of difficulties with her child's behavior at home, said “It sounds to me like the problem here is you.” Ellen added, “That messed with my head for a long time.”

All parents indicated significant time and energy were devoted to supporting their twice-exceptional child's needs, which often created difficulties for the family. For families with more than one child, parents indicated feeling badly for not having more time and energy for their other children. Each parent indicated emotional distress, exhaustion, frustration, and worry as common experiences and part of everyday life.

Bill and Barbara shared a constant fear that their son would turn to heroin to ease his own suffering. Bill described his fears as:

I don't think that there was ever a question in my mind that we wouldn't make it through. The biggest worry that we or I had, because of all that was going on, is that he would get involved in drugs.

Barbara recalled finding out the school was developing a makerspace. Brian was really struggling at that point, and Barbara thought a space where he could put things together or tear things apart would be of great interest to him. However, she learned it was a long way off and commented:

It won't be ready until the end of his junior year. That doesn't help me. He's a sophomore now. In 18 months, he could be a heroin addict. That's what I was really worried about. So keeping him engaged and keeping him on a very short leash was my biggest concern. Ellen and Cora, discussed giving up professional careers to focus on their children's complex needs. Ellen described her experience:

It's so emotionally exhausting as a parent, especially when there's other kids and you're trying to get a meal on the table or whatever else. I honestly do not know how I could have worked. There have been little snippets of time where I've worked part time throughout his schooling, but I do not know how I could have done more.

Cora described her experience as, “It's our life. I had to quit my job because of this. All hell broke loose with Claire, and I had to choose whether to be a good parent or good teacher. I couldn't do both.”

Deborah shared school was a hard place for Dana to be and talked about how adolescence, on top of being twice-exceptional, was a recipe for difficulty. Deborah described the realization that she needed to change herself if things were to improve. When commenting on what changed after gaining clarity around her daughter's learning profile, she indicated:

I think our relationship changed big time because I just stopped fighting who Dana was. If they need to come home and sleep for four hours and then come alive from 9pm to 1am and then go back to sleep again, that's just their rhythm, then fine. I'm not gonna fight that anymore.

Arthur described dealing with an exceptionally bright son who was under stress from school:

When he's under stress, he gets a little pissy and yells just to get it out of his system. But he ends up doing it [homework], he just needs to vent it out. As a family, we take some of that. We've learned to shut up and listen. We're going to take the abuse so that he gets his work done. So how's it impacting our family? That's how it impacts us. When he's under stress, we are all walking around on tiptoes and don't want to disrupt the bear downstairs so to speak.

Ann described questioning whether she was doing the right thing for Adam as a parent:

I couldn't get my kid what he wanted. And maybe my kid wanted the wrong things. And maybe nobody just said to me, Ann, he wants the wrong things. You gotta be careful with it. We, we went through some therapy, Adam did, but I ended up seeing his counselor to

talk about some parenting issues because some of the counselor's advice didn't line up with what I thought was the right thing.

Edward described trying to take care of Elliott's needs while also attending to their other two boys:

It was years and years of non-stop trying of different things. You're exhausted. There's not enough hours in the day to do everything that needs to be done between work and school and extracurriculars, and try to make it even when one just needs all that extra attention.

Ellen contemplated how the overall experience has affected her as a parent and shared:

My first reaction is to say see my gray hair. It's been really hard. At every turn, there's some other challenge. It always feels like we're working against the grain with him. He processes information so differently that we have to be two steps ahead. He changes so quickly in terms of what works one day doesn't work the next.

When contemplating the difficulties she and Edward have faced while raising Elliott, Ellen went on to say, "I think it's been difficult on our marriage. I wouldn't say that it's detrimental or anything, but, man, it hasn't made it easy."

Deborah shared that she and Dana's biological father got divorced when Dana was very young. She described the situation as follows:

I think part of it was just because we weren't aligned on parenting, but particularly with a kid who was kind of challenging, right? Like it was tricky. And honestly, as much as I don't wish it upon any kid to have to have a split household like we do, Dana's dad and I have a fine relationship. We've always had a very amicable relationship. We're both super rational, logical people. But, but in many ways, honestly, I think it was the exact right

thing that needed to happen, because I needed to be able to have some autonomy to do what I thought needed to happen.

Parents reported experiencing very high levels of stress and exhaustion themselves, attributing them to navigating the school experiences of their twice-exceptional child. These parents described persistent feelings of uncertainty and worry about the future and what would happen next to their children.

Sibling Experiences

When asked to describe how their twice-exceptional sibling's school experiences affected them and their family, both sibling participants described observing their parents consistently advocating for their twice-exceptional sibling and that stress, frustration, and exhaustion from that process spilled over into their family life.

Ethan, who was three years younger than his brother, described a difficult relationship with Elliott and shared details regarding physical and verbal altercations:

I feel like any interaction we have, he just feels like he needs to bother me, or annoy me and make me mad in some way. Like, even when he's on his meds, he tries to do that. And I feel like sometimes he just does things like that, just to get attention from my parents because I guess he feels like he just needs the attention even if it's negative.

When asked if there were good things about their relationship, Ethan indicated:

I mean, sometimes it's fine. Like in the summer, we usually get along like, 80% of the time. But like, when it's during the school year, even if I just like, walk by and do something mildly annoying to him, like not even directed at him, just like something he finds annoying. He'll just yell at me. And sometimes he throws stuff at me, like his pencil or something around him.

Ethan went on to describe what he thought school was like for Elliott:

I guess his navigation through school hasn't been great. Like he's smart. But he just hasn't figured out how to get up on time, and how different things affect so much I guess. He hasn't figured out how different things affect how he feels and how much better things could be if he just like woke up on time and actually turned in his homework.

When asked to comment on how he thought the experience with Elliott has been for their parents, Ethan added:

I think it's really stressful for them. And I think when Elliott refuses to do his stuff, it stresses me and my little brother too. And then my parents spend all their energy on Elliott, and they have no patience for anything Evan and I want or do. I mean, that's pretty annoying. Elliott uses all their patience. So if I ask for something that they find mildly annoying, it just amplifies their stress, you know? Elliott struggles to get his homework done, and it stresses everybody else out. So I just try to get my homework done at school. And if I have homework at home, I try to get it done as soon as I can.

Brad, Brian's older brother by three years, expressed empathy for his brother and regret over his own decisions when Brian was in school. Brad believed he "fell short" on his obligations to his brother and wished he could go back in time to tell himself how much his brother needed to vent and talk about his feelings. He recalled their relationship before high school, indicating:

I used to beat him up a lot. And that's one of the things that I'll regret for like the rest of my life. Brian and I were almost mortal enemies for a while. Because I was so mean to him. I was so mean to him.

Brad recalled often leaving home to escape stressful situations that revolved around Brian and expressed regret for not thinking to take his brother with him:

One of the things that I enjoyed when I got my license is just being able to drive and just get out of the house. Like sometimes when stuff got heated, just to drive, especially between him and my dad. Or, you know, the mood wasn't right in the house, I'd be able to go drive and go visit a friend, or go get some ice cream or do whatever. But Brian didn't have that luxury for a little while. Especially not, when I had it, he had to wait another three years to get it. So I would tell myself he needs to be able to get away from mom and dad to tell you his feelings, and you just need to be there for it. That's all you need to do.

Brad described his relationship with Brian as getting better as time went on, sharing they now were “really good buds”, attributing it to so many things changing since Brian’s high school graduation. He said, “Especially because he's not in that environment anymore. Where he's just like, oh, here's another place where I have to waste seven hours of my time.”

When asked to describe how their parents were affected by Brian’s overall experiences with school, Brad shared:

But I think they're much less worried about him now. Because he's not as moody, and he's willing to open up. Because I think he would just bottle things up, like, bottled his feelings up. Especially because he felt like he was bored at school.

When asked what needed to change for twice-exceptional kids in school, Brad stated, “there has to be something for these kids other than no hope.”

Both siblings were hopeful the future would be brighter for their brothers yet expressed uncertainty about what that might look like. Ethan indicated he believed it would take an “epiphany moment” for Elliott to be able to support himself at college without help from their parents, while Brad shared, “Brian’s still got some stuff to learn, but so does everybody.”

Influence of Experiences on Emotional, Behavioral, Social, and Mental Health

Interviews revealed that school experiences created significant issues for twice-exceptional participants both in and out of learning environments. Although some issues were unique to individual participants, common threads strung throughout the interviews related to emotional tolls and distressing behaviors; responses to extreme stress; difficulty with social interactions; and struggles with mental health.

Emotional Tolls and Distressing Behaviors

Families described significant emotional issues related to school for their twice-exceptional child, and all parents expressed regret over not being able to do more for their child. Every participant spoke of an emotional toll, with the majority of parents indicating they felt helpless and lost at times. While reflecting on the mistakes she believed she made along the way, Ann shared:

So sometimes I feel really bad because I think I was just a shitty parent who, you know, didn't read my kid well or didn't read the situation. So I felt, I felt super bad about that. And maybe we shouldn't have pushed all the time. Maybe just because he wanted harder work doesn't mean he should have had harder work. There was a big emotional price that was paid all across the family.

Deborah described the lowest point in her relationship with Dana by sharing:

They had to get mad at me, you know, a couple years ago, and really, like, let me have it. And I took it right, like I needed to and said, "You know, you're right." I didn't handle it very well. And I didn't know what I didn't know. We made peace with the whole situation. And now we have a much better relationship. But yeah, it was hard.

Arthur described what it felt like to watch his son struggle:

You see a kid struggling and you don't know how to fix it. You don't know why he's fighting so hard against something and he doesn't have the right words to tell you really.

You're not with them 24/7, so you don't know that someone kicked him at lunchtime, and that was two days ago, you know, it's hard. It bothered him enough to carry it over for a couple of days, and that's where it was hard, because you can't fix it. You don't know what's wrong to even talk about it.

While describing uncertainty around their son's upcoming transition to college, Ellen shared:

He's either going to soar, or he's going to crash and burn so flipping hard, and it's going to be painful. And we're going to have to pick him up and dust him off and regroup and figure out what he can do next. But we know that he can't just sit in our house. And we're not going to let him. He's, he's going to do something. So if he does crash and burn. I just hope we can all make it through there. Because I feel rundown already.

Parents discussed ongoing issues with anger, exhaustion, sobbing, yelling, anxiety, depression, sadness, destructive behaviors, and defiance, and three mothers described the most difficult times for their child as “very dark.” Edward shared that if he's having a frustrating time with homework, [he] doesn't want to do it, adding:

Again, this is more when he's a little younger, you know, he would take his pencil and just break it, jam it into the kitchen table, scribble on the walls, doesn't want to go to bed. You know, it's time to go to bed, you can't stay up, and he will go slam the door and punch a hole in his walls or take something sharp and just gouges walls, just I think to show us frustration, but also, you know, that ticks us off, so I think he does it to kind of get back at us for having him do things he doesn't want to do.

Responses to Extreme Stress

Parents described uncertainty around what to expect from their twice-exceptional children when their stress levels were high. Bill shared that Brian was the kind of kid “where you didn't quite always know that there wasn't going to be some kind of issue.” He went on to share:

In first grade, he pulled the fire alarm at school. And not only did the custodian watch him do it while he was in a fight with another kid, [but I am] not quite sure how that all worked out. The school principal was able to call the fire department and keep the truck from actually leaving the station because, in our particular district, if a kid pulls the fire alarm at a school and the truck leaves the firehouse, it's a \$500 ticket. And, to this day, he still denies it. He didn't do it. I'm like, Well, how did it get pulled? And how come the custodian says that he saw you?

Bill went on to share he was constantly wondering:

What landmine has been placed for me today? What phone call am I getting? I got a call from Mr. Black [the principal, when] Brian threatened to kill his classmate. Oh, okay. Yeah, I wish I had a manual. Where's the manual? You know, right. You can't say that at a school. Not a good thing. Right. So I mean, your overall question of what did that do to the family? I think it just heightened the stress level and made things a little bit more uncertain.

When recalling adolescence for Dana, Deborah described what it took to get them to school each day:

It was like, early February of that school year, it was a little past the middle. But pretty much almost every day, when we got to school, if we even went to school I would have to walk them around the block, or I'd have to calm them down. Like they literally would be like hyperventilating by having to go to school. That's how anxious they were. If they did go to school without issue, at least two out of three times I'd get a call from the nurse's office or the front office later that day saying they were not there and not in class.

Deborah pulled Dana from school shortly thereafter and described the outcome in the following way:

We changed, and I just let them be who they were without all the pressures, and the pressure was awful [for] both of us. We'd have to get them to school and deal with all that. So, that helped a lot. And then of course, our relationship health [improved] just because we sort of developed this better, trust with each other.

Edward described how the pressure of being behind at school, a regular occurrence, affected Elliott:

It's part of his MO too. He always seems to pull it out at the end. Like he always does great on exams, he always gets just enough to go from like a, you know, C's to a B+ or an A- all at the last minute. I think he's done that before. He thinks he's just going to do it again. And that he can skip the work, put it off, and then somehow it'll come together at the end. But it makes him down and just mopey and depressed. Just because when he gets buried in that much work, he can't see a way out of it.

Ethan shared an observation that his relationship with Elliott largely depended upon how far behind Elliott was in school. He added:

I've noticed when he has his work done, he likes to do things with me. And he doesn't get as mad at me, and he doesn't try to annoy me as much. When he doesn't have his work done, I think he's mad at himself, so he tries to take it out on me. But when he's on top of his stuff, and he's just chill, it's fine. It's like a normal brother relationship.

Parents discussed their child as developing coping mechanisms to deal with frustration and stress over school, including emotional outbursts, memory loss, excessive need for sleep, and destructive behaviors. All parents mentioned issues with debilitating perfectionism that affected their child's ability to complete school assignments.

Difficulty with Social Interactions

Families spoke about the importance of access to intellectual peers, indicating it was difficult to find learning environments that were academically challenging enough while also offering their child, who often had lagging social skills, the opportunity to stabilize socially and emotionally. Most of the parents indicated that adding to this difficulty was the fact that their twice-exceptional peers were introverts.

Edward said, “I can’t blame other kids for staying away.” Ellen described difficulties related to Elliott interacting with his peers, including:

And then we started getting calls from school every single day. He's under the table, he punched some kid in the face because the kid said he was a ghost. And Elliott thought, well, if he's a ghost, and I punch him in the face, and my hand goes through, then he's a ghost. But if my hand just hits him, then he's not a ghost. He's a person.

Claire described the difference between her own experience and that of other students as “They had friends, I didn't. I had a few friends, neurotypical friends for a while, until they just decided not to hang out with me anymore or decided to turn their back against me.” Claire went on to share:

So I'm tired. I'm always tired. Every time I come home, I just say I'm tired. I'm an introvert because I do not like to interact with people very much like at school. I only have like one friend. I try to keep to myself.

Dana talked about her experiences during middle school, recalling a strong desire to pull away from peers:

I went to school, and I worried about that. And I went home, and I went up into my room, and I just avoided people, and just really didn't like being around people. So I would go to school, and that was about the only interaction with other people I ever had. And then I would just sulk when I was at home. And I would, you know, stay up all night. And I

would, you know, engross myself in books and videos and movies and whatnot. Because like that school was the only part of my life that seriously mattered to me. And even then it barely mattered.

Eliott, who described realizing he wasn't an introvert in middle school after all, spoke about challenges with social interaction during high school, sharing:

Well, in high school, I had a lot of trouble with friend groups. But I kind of distanced myself from my old friend group because I [thought] people are gonna judge me for hanging out with bad kids. But once I kind of left that friend group it was very hard to join another because most of the kids in my high school have been friends since kindergarten, like most of them have known each other since at least elementary school or middle school. And it was just difficult to kind of infiltrate some of those groups.

Ethan, Eliott's younger brother, expressed concern about him "not having any friends." He went on to describe the he believed things would be different for his brother if friends were in his life, adding:

I feel like if he had just one friend to help them do schoolwork and to hang out with him all the time, he would be generally a lot happier. He would be less annoying to me because I feel like he wouldn't try to annoy me as much. I just feel that it would be good for him.

Edward and Ellen didn't see evidence that Eliott had any real friends, mentioning he never received invitations to go anywhere. They sought assistance with social skills from an occupational therapist but didn't see things change. Edward indicated not seeing Eliott build friendships beyond acquaintances but recalled nothing outside of "normal bullying" by peers. He described one troubling experience that sticks in his mind:

When he was a freshman wrestler, some of the older wrestlers would tell him, “You're so terrible. Why even come into practice? You should just quit.” I guess some kids were like, “Eliott, you're so annoying. Why don't you just kill yourself?” It's just hard because I know he can be that way. I can see kids don't understand, differences in kids, and it can be annoying to them. But I just wish that it wouldn't come out like that.

Ellen described how Eliott's differences affected other kids and his options for social interaction:

He's very slow sometimes to answer things and has to think. I think that's part of the reason he struggled socially with other kids because they're not accepting of that. I think adults have the patience and understanding that somebody's kind of trying to be thoughtful before they answer. Kids were kind of wary of him. He would be excited to see other kids, and his reaction would be to like to get too close and like hug them too hard and like plow into them. He wasn't real good at interacting. It's weird how he's always he's been on the outskirts. Probably freshman year he really tried to fit in. But, he's clearly behind a couple years socially and emotionally.

Arthur described Adam's emotional level as “not advanced as his intellectual level”, going on to describe his social experiences with peers:

His emotional level was behind the class. He maybe acted out or did things a little differently than other students. I think they picked on him for it, but intellectually, he knew he was obviously smarter than they were. It was like, “Why are you picking on me because you're dumb?” But they were picking on him because he acted out. I think some of that carried into his middle school years. I think that kind of affected his confidence. He wouldn't get picked to be on teams or go on playdates, or stuff like that. He kind of felt excluded a little bit.

For the 2 of 5 twice-exceptional participants who took college classes while in high school, access to intellectual peers was easier but did not produce lasting relationships or friendships due to age differences or geographical barriers. Both siblings described their twice-exceptional siblings as having difficulty finding peer groups and intellectual peers, and when asked to reflect on the social aspects of his brother's experience, Ethan shared, "I think if he had a friend, just one friend at all that he hung out with all the time, things would be exponentially better."

Struggles with Mental Health

Concerns over their child's mental health arose in each of the eight parent interviews and included difficulties such as depression, anxiety, obsessive behaviors, dissociating or detaching from happened in the past, and suicidal thoughts. In some cases, parents were comfortable sharing the details of their child's mental health issues and, in other cases, parents were guarded, asking that certain details of their child's mental health journey not be shared in this study. The following details were openly shared by families of Elliott, Claire, and Dana.

Edward, Ellen, and Elliott talked about their interactions with different psychologists along the way. Ellen indicated:

You know, as a little kid, he never slept, and now he wants to frickin sleep all the time. He would stay in bed till two o'clock in the afternoon every day if we let him. I don't necessarily think it's because of depression, though he is on a depression medication. I think it [sleeping] may be chemically just how his brain operates.

Cora and Claire described Claire's detachment from memories as related to her most traumatic school experiences, including a very traumatic six month stretch spent at a boarding school within the past year. Claire added, "It's hard to explain because I can't remember."

Dana recalled their mother being the only family member who worked toward accepting them as they were. They recalled difficulty with other family members who refused to acknowledge the realities of their lived experience:

My dad really didn't understand any of this, and [he] was very hesitant to really acknowledge it. One time, I had seen an alternative school. I remember he said, "You don't want to go there. That's where kids who are suicidal go." I responded, "Dad, you do know that in fifth grade, I was very suicidal, right? You do process that." No, he didn't know. That was his first time knowing [this]. That was a difficult conversation to have.

Brad described seeing a totally different person in Brian after he graduated from high school:

I think he realized he's not bogged down by a time waster of school. He can focus on the things that he wants to do, which has improved his mood, like tenfold. He's not like depressed all the time.

In summary, twice-exceptional participants, parents, and siblings who participated in this study shared critical insight into what their lived experiences were like as they navigated the complex waters of twice-exceptionality and schooling. Although there were a number of differences across all five cases, including the make-up of each child's twice-exceptional profile, the geographic region in which the families lived, the type of school the twice-exceptional students attended, and whether it was a single or multi-child household, families shared far more common experiences. All participants indicated school was a difficult journey for the twice-exceptional member of their family and described the persistent difficulties as resulting in exhaustion, frustration, stress, and trauma that have left lasting impressions on every member of the family.

Chapter 5: Conclusions, Discussions, and Recommendations

In the prior chapter, I summarized the findings from interviews completed in 2022 with five families, which included five twice-exceptional participants between the ages of 16 and 18, eight parents, and two siblings. Families lived in the Pacific and Midwest regions of the United States. In this chapter, I discuss the literature in relation to the selected theoretical frameworks and themes that emerged from the data, followed by implications, recommendations, and limitations of the study.

Conclusions from the Study

The goal of this study was to describe and analyze the experiences of twice-exceptional students and their families through their own words and perspectives. I wanted to understand how the twice-exceptional participants described their educational journey, how their parents and siblings described their family's journey, what common experiences and themes related to stress and trauma the students and families shared, and the impact of stress on learning.

This qualitative study yielded findings in the following three main themes: (a) issues with access to appropriate learning environments; (b) difficult lived experiences of family members; and (c) influence of experiences on emotional, behavioral, social, and mental health. The following is a summary of each theme and its sub-themes in relation to the literature.

Discussion of Results in Relation to the Literature

How do these findings relate to the literature described in Chapter Two and other pertinent research? Reflected in the following section is a brief review of the theoretical frameworks of Cognitive Activation Theory of Stress (CATS) (Ursin & Eriksen, 2004), Polyvagal Theory (Porges, 1994), and the Window of Tolerance concept (Siegel, 1999) followed by how the theories relate to the lived experiences of participants in this study.

Cognitive Activation Theory of Stress (CATS)

Through CATS, a cognitive theory, Ursin and Ericksen (2004) describe the “unpleasantness” of internal alarms that pose no threat to health in the short term, but when endured over time, can be problematic. They describe an “alarm” as what happens “whenever there is a discrepancy between what should be and what is” (p. 567). CATS theory states that specific behaviors develop as coping mechanisms to deal with stressful situations and that depend upon the level or intensity of the alarm. Low-level alarms may be manageable, but a consistent barrage of alarms at any level affects physiological systems in the body, which require the student to use the same critical resources they could otherwise use for learning.

Twice-exceptional participants and their parents in this study described many experiences that they thought should have been happening in learning environments, but they were not happening. These experiences produced frustrating and stressful distractions that seemed to siphon resources that could have been used for other things, namely learning. Although some stress in life helps to activate problem solving (Eriksen, 2017), general consensus is that excessive stress over long periods of time can produce negative effects on the body and mind with arousal levels becoming too high for adequate performance (Ursin, 2011).

A significant aspect of CATS is “expectancy”, which is the knowledge we collect along the way and use to deal with difficult or challenging situations (Ursin, 2011). CATS explains that we appraise each situation using the knowledge we’ve gathered from previous experiences and, more specifically, how an individual doing the appraising believes they will be able to manage or cope with the circumstances (Eriksen, 2017).

When considering the CATS model alongside experiences of the twice-exceptional participants in this study, a clear difference arose between occasional stress that “trained” the brain and the long term stress which “strained” and challenged their brains and bodies to regulate

and perform optimally (Ursin, 2004). Resources these students needed to focus on learning were likely used instead to react to and process the stresses of daily life in school.

The following descriptions illustrate the concept of CATS applied to select examples shared by participants. Ann described finding out through the parents of another student in Adam's gifted and talented school that Adam was being bullied on a daily basis by a teacher with whom he had a personality conflict. Adam spent a full school year with that teacher. Arthur described Adam during this time as often upset and needing to vent his frustrations at home in order to relieve the pressure before returning to school the next day. Ann described Adam as becoming overwhelmed academically and experiencing great difficulty managing his behavior during that time despite easily qualifying for the highly selective gifted program. Their descriptions suggested Adam's arousal levels were high enough to divert resources needed for cognition and academic endeavors toward attempts to regulate emotionally and behaviorally.

Dana recalled feeling totally misunderstood and bullied by teachers and peers in school and described themselves as "falling apart" and struggling to "show up" as their academic performance fell to "baseline average" and school avoidance became an issue. Dana described regularly "spacing out for hours on end" and "floundering on assignments" as they battled to remain connected to learning. Deborah recalled needing to explain to a teacher that tapping on Dana's desk to get their attention was worsening rather than improving Dana's ability to pay attention, learn, and regulate in their class. She also described Dana hyperventilating before school spurring the need for Deborah to calm them down each morning by walking around the building. Despite attempts to help Dana manage the stress, Deborah regularly received phone calls from school personnel reporting Dana had not shown up to class. Deborah described that period of time as "very dark" for Dana, who often would sleep for several hours after school each day. This description suggests Dana expected they would not be able to manage or cope

with the circumstances at school, which ultimately affected their belief in their ability to manage the situation.

Throughout school Elliott often was very frustrated by the slow pace of learning and lack of options for showing what he had learned. Meltdowns over homework were a regular occurrence even though Elliott was quite capable of completing the work with little effort. Edward described Elliott as developing destructive behaviors, which he thought to be an expression of the ongoing frustration he experienced at school and brought home. Despite Elliott testing in the top 1% on IQ tests, Edward described Elliott “digging holes” related to unfinished coursework that were difficult to escape, and Ellen described Elliott as regularly receiving mid-semester grades of Cs and Ds in high school. It became more and more difficult for Ellen and Edward to wake Elliott up in the morning, as he slept past alarms and accumulated many unexcused absences. This description suggests Elliott was overwhelmed and unable to perform optimally due to an inability to manage the same circumstances repeatedly. This suggests that how stress affects an individual person is totally dependent upon their cognitive evaluations of a situation and its consequences (Ursin, 2011), meaning two individuals experiencing similar stressors may react quite differently from one another. This could explain why some students in a classroom are able to manage certain situations while others cannot.

CATS explains that our brains take in, store, and utilize information that tells us one stimulus precedes another (Eriksen, 2017), essentially teaching us what to expect as certain stimuli and responses occur. This could partially explain the long standing behavior patterns that proved difficult for twice-exceptional participants to break.

Polyvagal Theory

Polyvagal theory (Porges, 2018) indicates feelings of safety are a prerequisite for humans to be creative, solve problems, and have to access higher cognitive function. Porges describes

feeling safe as dependent upon the following three conditions: (a) the autonomic nervous system cannot be in a state that supports defense; (b) the social engagement system needs to be activated to shift the nervous system out of fight or flight mode; and (c) cues of safety need to be available and detected. Porges goes on to describe that feeling safe, despite the removal of a perceived threat, is “not well integrated into educational, medical, and mental health treatment models” (p. 25).

In the theory Porges describes an autonomic nervous system connected to the central nervous system that responds to stimuli in the environment as well as to organs in the body without any conscious awareness. This neural evaluation of risk is managed by an automatic process scanning the environment for cues of “safety, danger and life threat” (p. 19). The theory helps to explain that participants may have been completely unaware of what triggered them but very aware of how their body felt when faced with a trigger (p. 19). It also may help to explain why twice-exceptional participants often were unable to identify the source of their challenges, “fix” what was wrong, or benefit from interventions.

Polyvagal theory also emphasizes a link between the brain and internal organs and how experiencing emotional stress or trauma can intensify symptoms of physical and mental illness (Porges, 2018). Twice-exceptional participants and parents in this study described struggles with anxiety, depression, obsessive behaviors, and PTSD, which resulted in a necessity for mental and behavioral health counseling and medication.

The following descriptions of participants illustrate the Polyvagal Theory concept of the relationship between physical and mental stressors. Cora described “all hell breaking loose” when Claire entered school, describing her own cortisol levels as “off the charts” with “physical manifestations” similar to PTSD and fears of having an “early heart attack.” The family struggled to find a learning environment where Claire felt psychologically safe and able to think

and learn as she was designed to. Claire described not knowing why stretches in school were so bad for her, indicating she “blocked out most of elementary school” and explaining ongoing difficulties connecting with teachers and peers. Cora described Claire’s experiences at school as “traumatic every single day” and riddled with difficulties as Claire “spaced out and didn’t do the work” everyone else was doing. This description suggests Claire’s autonomic nervous system may have been in a state that supports defense; a social engagement system not activated; and no detection of cues for safety.

Deborah described Dana as suffering from anxiety and developing existential fears during the most difficult stretches of school. Although she saw Dana’s fears as having a “small chance of happening”, Dana described feeling “actively unsafe” all the time at school. Dana described attending a large middle school where moving from class to class involved hallways packed with students and noise, sharing “I just remember being banged around the hallway as I’m desperately trying to make my way to math class, which is on the other side of the school.” Dana described retreating from all social interaction and just waiting each day for the bell to ring in order to escape the environment. Deborah added that Dana slept for hours after school each day. This description suggests Dana’s social engagement system was not shifting out of fight or flight mode, and cues of safety went undetected throughout the school day.

Edward described several years when Elliott regularly destroyed things in their home, including a baseball glove his younger brother, Ethan, received as a gift. Ethan indicated that during the school year Elliott often yelled at him and threw things at him. Ethan connected Elliott’s aggressions toward him as a direct result of being behind in school. Ethan described a very different Elliott during the summer months when they got along “80% of the time” and liked to do things together. Ethan described Elliott as “happier” and “not everything bothers him” during the summer months. These descriptions suggest that Elliott’s autonomic system was in a

state of defense during the school year and not so in the summer months. His activated social engagement system also shifted his nervous system out of a fight or flight mode when not faced with the challenges of school, and cues of safety were available and detected.

Without the lens of Polyvagal theory, the emotions, behaviors and reactions expressed by twice-exceptional participants may be viewed as challenging, disruptive or non-compliant, generating any number of negative outcomes for them and their families. Through the lens of Polyvagal theory, the emotions, behaviors, and reactions can be viewed as signals reflecting the state of the participant's nervous system. Because expectations and interventions both in school and at home can be based on the participants' need to have conscious control, we could consider the twice-exceptional participants in this study as being unable to experience success in school.

Window of Tolerance

The Window of Tolerance (Ogden et al., 2006; Siegel, 1999) concept describes that there is an ideal and unique state in which individuals are able to function and thrive in everyday life. Operating within this window allows for learning, playing, and relating well to self and others (Siegel, 2009). It supports the notion that the autonomic nervous system and emotional responses are connected and that emotions are central to understanding the human condition (Raju et al., 2012).

As arousal approaches the upper limits of the Window of Tolerance model, emotions and thoughts are altered by physiological changes in the body resulting in increased heart rate and breathing that affect feelings of safety and trigger survival instincts and emotions, such as fear to take over (Lohrasbe, 2017). Over time, traumatic experiences can narrow a child's Window of Tolerance (Hershler, 2021), and reactions to stressors in the environment may intensify making it difficult to tap into strategies for managing distress (Hershler, 2021). As “overwhelming

emotions, unwanted thoughts, uncomfortable sensations, or unhealthy behavioral impulses” (Herschler, 2021, p. 25) arise in school, they may disrupt the learning process.

The participants’ statements illustrate the concept of the Window of Tolerance model. Brian often found himself finishing work well ahead of his peers and experiencing excruciating boredom in school. He described his entire school experience as “waiting for everyone to catch up.” Before Brian discovered the relief of popping open a book while other students finished the task at hand, Bill described Brian’s behavior and attitude as quickly deteriorating. He wondered, “What phone call would come today?”, knowing Brian’s frustration with school was quickly overwhelming his ability to cope with the boredom, resulting in behavior issues. Barbara and Bill shared that the school focused resources on students struggling to reach grade-level expectations, leaving Brian largely unsupported and challenged in the classroom. They feared his tolerance for such an existence would eventually fail, and he would turn to drugs. This description suggests that Brian’s Window of Tolerance narrowed over time, and uncomfortable impulses began to overpower his ability to endure school.

Each day after elementary school, Ann recalled Adam “sobbing” in her arms at the bus stop as soon as “his feet hit the pavement,” as if he couldn’t hang on a moment longer. She described holding on to him long enough for her arms to hurt, knowing he needed her to endure while he unwound tension from the day. She described occasional efforts by the school to offer Adam respite from the monotony of standard curriculum; however, she went on to describe the efforts as creating additional frustration for Adam, given the monotonous strings attached to gaining access to high level work. Arthur described Adam’s patience as having worn thin, resulting in behavior issues in the classroom, such as disrespectful comments to the teacher or ignoring the teacher altogether. His behavior then influenced his access to higher-level work and social connection with peers. This description suggests Adam’s Window of Tolerance was

exceeded as intolerable stressors in the environment made it difficult for him to tap into strategies for managing stress.

As Dana became increasingly disorganized during a traumatic middle school experience despite having a 504 in place, Deborah saw her daughter as “disconnected from themselves” with little to no self-confidence and beyond the point of being able to thrive in school. Dana described themselves as suffering from anxiety and being “completely obsessed with grades” as they struggled with feeling everyone was looking down on them. Dana’s self-concept was so damaged, Deborah knew there would be no healing under the circumstances, adding “the school environment is huge, it can crush their confidence or totally build it up.” Deborah decided to pull Dana from school altogether and witnessed a significant transformation as Dana recovered and re-engaged with a joy of learning. This description suggests that overwhelming emotions and unhealthy behavioral impulses at school exceeded Dana’s Window of Tolerance and triggered emotions and fears that Dana was unable to overcome.

Knowing whether an individual is operating within a state that allows them to process, learn, and regulate emotions is essential (Raju et al., 2012). In every twice-exceptional participant’s case, tolerance levels were exceeded, and suffering in school was endured. In no case was the state of their nervous system a consideration for solution development. The next section of the chapter discusses the major themes and sub-themes of the study in relation to the literature.

Issues with Access to Appropriate Learning Environments

All families experienced difficulty finding or gaining access to learning environments that provided opportunities to foster their twice-exceptional child’s intellectual gifts while supporting their lagging or developing skills. The twice-exceptional participants in this study often were misunderstood in school and received only a portion of what they needed in any given

learning environment, which produced significant hardship and difficulty for them and their families. All families described the suffering and a difficult existence for twice-exceptional participants in school, with long periods of being misunderstood, and in some cases mistreated by those positioned to help them at school. Most families pieced together a learning profile that accurately reflected the advanced abilities as well as lagging or developing skills in their child over the course of several years but not before experiencing an exhausting and complicated search for appropriate learning environments.

The families of Adam, Brian, and Elliott reported never finding sufficient accelerated learning opportunities that met their child's needs within public school systems, with Elliott's family indicating that support for lagging and developing skills were absent as well. Each of these families expressed a sense of relief that the K-12 journey for their child was or would soon be over. Claire and Dana's families struggled through a number of public and private learning environments, finally finding public high schools where they felt mostly comfortable, academically challenged, and supported with an IEP or 504.

The literature reflects twice-exceptional students who are both gifted and have one or more disabilities (Moon & Reis, 2004) often exhibit a jagged profile of academic abilities (Baum et al., 2017); however, they also are very motivated and crave opportunities to pursue learning and gain new knowledge (Willard et al., 2013). These students require learning environments in which their strengths and interests are fostered; social and emotional support is available; learning needs are accommodated; and they feel safe, supported, and intellectually challenged (Baldwin, Omdal, & Pereles, 2015). Nuances around twice-exceptionality create significant confusion about what it means, how prevalent it is in a population, and the interface between it and services available in schools (Foley-Nicpon et al., 2013). As advanced abilities in some areas collide with failure to meet expectations in other areas, traditional methods for teaching and

learning clash with the learning profiles of twice-exceptional students (Assouline & Whitman, 2011; Baum et al., 2014; Reis et al., 2014). Skills are known to develop only when the appropriate environment, educational opportunities, and psychosocial variables exist (Gagné, 2015), which perhaps reveals a major reason why these families struggled so badly. Six sub-themes were related to access to appropriate learning environments.

Lack of Focus on Strengths, Talents, and Interests

Twice-exceptional participants and their parents noted a distinct lack of opportunity to focus on areas of strength, talent, and especially interests, in school. The majority of families described this lack of opportunity as a major stressor during elementary and middle school, forcing them to look for opportunities outside of school to feed their childrens' hungry minds. Parents of the twice-exceptional participants who complained of boredom and lack of challenge at school described their child as also struggling with emotional and behavioral issues and not excelling academically. Some families reported that the schools placed a disproportionate focus on learning difficulties over areas of strength.

For study participants denying access to accelerated learning began as early as first grade. Families reported that schools justified this lack of access by not using evidence from testing, by a child's misbehavior, and by policies that denied students' access. In limited instances, access to accelerated learning in a particular subject, such as math, was afforded in public school settings. Gifted pull-out programs were available in limited cases as well; however, access was dependent upon placement testing criteria, which some twice-exceptional participants struggled to meet requirements. For all participants who gained access to pull-out gifted programs in public schools, the pull-out programs eventually were eliminated, and these twice-exceptional participants remained in mainstream general education classrooms full time.

Some families headed to gifted and talented schools in search of more intellectually

rigorous learning opportunities. Those experiences were short-lived because understanding and support for needs and learning differences were not provided. Learning disabilities masked intellectual gifts which fostered disbelief in the child's giftedness. Families in this study expressed regret over not being able to find enough opportunities to recognize and develop their child's strengths and interests, attributing family difficulties to this issue.

Long-term lack of access to learning opportunities that developed children's strengths, talents, and interests was a source of great frustration and stress for families, ultimately impacting academic performance, self-confidence, and motivation in school for twice-exceptional participants. Parents described their twice-exceptional children as losing their appetite and motivations for learning which affected their children's emotional well-being. All families thought choice and access to subjects of interest would improve the school experience for their twice-exceptional children in high school; however, most twice-exceptional participants indicated this was not the case due to standardized curriculum requirements and limited course offerings in the school. However, Deborah and Dana were pleased with their small competency-based high school in which students had a number of ways to define their own path.

The literature tells us that only when gifts and talents are recognized can each learner find opportunities to utilize their unique abilities, interests, and learning styles (Renzulli, 2012). Students with a combination of superior ability and learning disabilities often receive instruction that is similar to students with average ability and learning disabilities (Baum, 1988), and such circumstances place the twice-exceptional child at risk for issues with self-efficacy, self-confidence, and motivation, as well as the loss of joy for learning and belief in their own strengths (Baum et al., 2017). Research reveals that believing in one's own academic abilities heavily influences a twice-exceptional student's actual academic performance (Wang & Neihart, 2015).

For decades, researchers have indicated that gifted students with learning differences often experience a reduction in accelerated learning opportunities because of behavior issues and low academic achievement (Moon & Reis, 2004). This lack of opportunity to foster the gifts for participants is a missed opportunity not only for them as individuals, but for society, as we lose out on what they could have done in this world (Kim et al., 2013).

Inflexible and Limiting Standardized Curriculum

All families described needing more intellectual stimulation than was offered in traditional learning environments for their child. Realizing early on that the limitations of the standardized curriculum would detrimentally impact their twice-exceptional child's motivation for learning, families searched for ways to counteract the boredom and frustration of "busy work," including asking individual teachers for more challenging work.

Failed attempts to find any flexibility in the curriculum for Adam, Claire, and Dana resulted in their families withdrawing them from traditional school systems and enrolling them in gifted and talented schools. The families soon realized that although the academic rigor may have improved, understanding and accommodation for their child's differences did not exist in the gifted programs. The trade-offs were difficult, and families began to recognize their children's learning needs were not met in any learning environment.

The literature tells us misalignment between children's learning strengths and needs and a school's curriculum and instructional approaches can create trauma for twice-exceptional learners and their families (Baum et al., 2017). Understanding organization, class participation, and planning can challenge twice-exceptional students to the point when they fall behind, experience inconsistent academic performance, have difficulty with expression, emotions and social interaction, and spend much of their time frustrated (Baum et al., 2017). Researchers also indicate diminished attention on a twice-exceptional student's disability in lieu of concentration

on their gifts (Bender & Wall, 1994, Olenchak, 1994) helps students become more successful in school (Moon & Reis, 2004, p. 111), further substantiating the need for flexibility in curriculum design.

Incomplete, Inconsistent, and Confusing Observations and Psychological Assessments

All parents described observing signs of giftedness in their twice-exceptional children at young ages and of a strong, sometimes heavy sense of responsibility to keep them intellectually challenged once the gifted identification arrived. Suggestions that their child may also have differences or disabilities, however, were more nuanced. Some parents were hurt, upset and defensive because of comments from family members suggesting something might be wrong with the child as well as observations from care providers noting differences in their child. In all cases, complete understanding of learning differences or disabilities came well after the identification of giftedness.

Some families sought assessments to gain access to gifted and talented programs while others searched for answers to perplexing difficulties with learning. Parents described receiving conflicting information about their child's profile from teachers and clinicians, further fueling a difficult journey through school and uncertainty around what to do next. Pressure to keep searching for answers led some families to seek multiple assessments over the course of several years, with three families not gaining insight into their child's full learning profile until they were well into high school.

The literature tells us that a primary caregiver, often the mother, is the first to see gifts and disabilities in twice-exceptional children and takes the lead on pursuing evaluations and advocating (Neumeister et al., 2013). There is no single psycho-educational profile for twice-exceptionality and no single method for identification (Foley-Nicpon et al., 2011), which complicates the process for families who, in most cases, have no previous experience or

foundational knowledge as a place to start. Psychologically-based diagnosis of disabilities and their connections to appropriate interventions in educational settings are highly complex because diagnoses are determined by psychologists using clinical diagnostic manuals while intervention strategies and funding for such interventions are determined by education legislation (Assouline et al., 2011).

A tendency to focus on academic performance as the indicator of ability and disability limits visibility into varying profiles of twice-exceptional students further complicating identification of academic strengths and weaknesses (Maddocks, 2020). The complexities of twice-exceptional student profiles can result in the masking or concealing of learning differences and deficits by compensating with their talents and abilities (Baldwin, Omdal, Pereles, et al., 2015). Often labeled as lazy and unmotivated, twice-exceptional students also can become known as underachievers (National Association for Gifted Children, 2021), and their need for programs and services that address both their academic and emotional development in school are overlooked (Moon & Reis, 2004).

Lack of understanding about twice-exceptional students often leads to inaccurate conclusions by professionals, as observed behaviors belonging to one diagnosis mimic the traits of another (Reis et al., 2014). For many years, twice-exceptional students have lacked opportunities to build upon their strengths and talents and interests, as access often lingers just beyond their reach.

Ineffective and Disrespectful Handing of 504 Accommodation Plans and IEPs

A majority of families in the study obtained a Section 504 accommodation plan or an IEP for their twice-exceptional child. Only one of those families described a collaborative relationship with those administering the plan at school. The other families described difficulties obtaining a plan despite providing the necessary assessment data. Twice-exceptional participants

with a Section 504 accommodation plan or IEP referred to inconsistent and disrespectful handling of the plans at school and in the classroom, requiring them to remind teachers of the details within their plans. All parents and twice-exceptional participants described the need for diligence with teachers and administrators, with Elliott's family describing efforts by the school to "whittle away" at his Section 504 accommodation plan over time despite assessment data reflecting diagnoses of ADHD and ASD.

The literature indicates that in addition to taking on the important role of pursuing professional evaluations, primary caregivers also take a leading role in advocating for support and services in school, teaching the child self-advocacy skills and sustaining high expectations for the child no matter the disabilities (Neumeister et al., 2013). Twice-exceptional students and their families often interface with a number of professionals from education and clinical disciplines throughout the evaluation and plan administration processes, leaving them vulnerable to the serious gaps in understanding between disciplines (Reis et al., 2014).

Section 504 plans and IEPs that are inappropriately designed or implemented leave twice-exceptional students at risk. Levine states, "repeated failure inflicts penetrating wounds in a child's psyche" (2002, p. 263) and goes on to say, "kids who grow up feeling that their minds are globally defective are definitely in peril" (p. 267). Effective strategies for twice-exceptional students involve fostering strengths and interests, providing social and emotional support, adjusting approaches to leverage strengths and accommodate learning needs, and establishing safe, supportive environments and cultures where every student has the opportunity to succeed (Baldwin, Omdal, & Pereles, 2015). Families cannot achieve this without support from the school.

Positive and Negative Experiences with Teachers

All parents reported positive experiences with supportive teachers at some point during their twice-exceptional child's learning journey, and all twice-exceptional participants confirmed those positive experiences, recalling with fondness their time with the teachers. These teachers were described as offering the support needed to develop or overcome lagging skills while also presenting opportunities to pursue interests and use strengths. Twice-exceptional participants described feeling comfortable talking to these teachers and appreciating their approaches to teaching and learning. Parents expressed great relief to find such teachers, noting academic, emotional, behavioral and social benefits developed for their child during the time they interacted with the teachers, adding home life was better because their child's school experience was positive. In many cases, these teachers taught in a regular classroom or at the high school AP level.

Some of the most negative teacher experiences parents and twice-exceptional participants described took place within gifted and talented programs, where teachers were seemingly more accepting of traditionally-defined gifted students. Parents described gifted education teachers bullying their twice-exceptional child when signs of lagging skills, behavioral issues, or emotional difficulty were detected. In some cases, these families only had a gifted identification at the time their child experienced difficulty with the gifted education teacher. In other cases, the child had been identified as twice-exceptional before heading to the gifted and talented program, and the parents believed more academic rigor in their school experience would quench their thirst for learning. Parents and twice-exceptional participants described great difficulty with self-efficacy, self-confidence, belief in strengths, and emotional distress for the participant during these experiences, causing significant hardship for the whole family.

The literature says teachers have a "major impact upon the educational achievements and

psychological well-being of gifted students” (Rowan & Townend, 2016), and teaching practices can “nurture, frustrate or even thwart what is a natural human process of learning, growth and change” (Deakin-Crick, 2015, p. 152). Effective teaching practices that are used with twice-exceptional students require teachers to have knowledge about the students’ “abilities, their diversity, and indicators” in order to identify methods that are appropriate for the individual student (Gierczyk & Hornby, 2021).

The literature also indicates teachers with a gifted education speciality are likely to have a better understanding of twice-exceptionality in general (Foley-Nicpon et al., 2013); however, it is largely dependent upon teacher preparation (Gierczyk & Hornby, 2021). Twice-exceptional students commonly experience low academic self-concepts and “see themselves as imposters or as inadequate” (Baldwin et al., 2015), which can be in stark contrast to gifted students with no learning differences or disabilities who are academically confident. In classrooms and in life, only when gifts and talents of each learner are considered, can each have the opportunity to tap into their unique abilities, interests, and learning styles (Renzulli, 2012).

Exhausting Experiences with Advocacy

All families reported being exhausted by navigating complex educational situations for long stretches of time. Parents saw themselves as the primary advocates for their twice-exceptional child yet felt largely unsupported in most cases. In some cases, mothers were unable to work outside of the home as they balanced advocacy at school with supporting their child and family at home. Parents described not knowing what they needed to know about their child’s total learning profile early enough to successfully avoid traumatic experiences and maneuver through complicated experiences with school administration, teachers, and clinicians. Parents described having to remind teachers of plans in place for their child and experiences while school administration attempted to diminish their child’s need for support. All parents

acknowledged realizing early on that they needed to teach their child to advocate for themselves since they could not be with them at school. This proved to be effective for most families; however, extreme circumstances such as bullying by teachers and peers reduced their child's ability to effectively advocate for themselves. Parents described years of worrying about their child at school despite having taught them advocacy skills.

The literature indicates a primary caregiver takes on the important role of helping the child by pursuing professional evaluations, advocating for support and services in school, teaching self-advocacy, and sustaining high expectations no matter the disabilities (Neumeister et al., 2013). In the case of families in this study, the primary caretakers were parents, with the most prominent advocate being the mother. The literature also tells us that parents become successful advocates for their twice-exceptional children only after they master educational language, policies, and the lacking resources (Barber & Mueller, 2011; Besnoy et al., 2015; Wang et al., 2004), which adds to the difficulty for parents. Positive advocacy experiences leave parents feeling they are fulfilling their obligation to their child (Rossetti et al., 2021), while antagonistic situations with teachers and other school personnel which appear to be regular occurrences, leave parents feeling overwhelmed because the task of advocating is far more difficult than it should be.

In addition to advocating for their child, parents in this study realized a need to teach their twice-exceptional child to advocate for themselves. The literature offers many definitions of self-advocacy; however, there is general agreement that self-advocacy is essential for twice-exceptional students if they are to succeed in school and beyond. The literature indicates developing self-advocacy skills at a young age is more beneficial than waiting until high school or adulthood given the complexity of advocacy that increases at every stage of school (Test et al., 2005), and learning how to overcome barriers in school is important for students, especially

those with developmental disabilities (Kleinert et al., 2010). Over time parents must learn to “hand off” the advocacy role to their twice-exceptional child through a process of “scaffolding” (Neumeister et al., 2013, p. 271). There is agreement that self-advocacy skills are important for overall success in school, but they also help to prepare twice-exceptional youth for dealing with social and emotional issues brought on by experiences such as bullying (Mohammed, 2018). A number of frameworks for developing advocacy skills exist. The Conceptual Framework for Advocacy (Test et al., 2005) includes four components of self-advocacy as knowledge of self, knowledge of rights, communication, and leadership. The literature also tells us that self-advocacy by twice-exceptional students is essential for challenging the very perceptions of their abilities held by others. Frameworks based upon the delivery of authentic education where learners are “given consideration and accepted as they are”, promote inclusive teaching and learning practices appropriate for every learner (Watagodakumbura, 2013). It seems creating environments where every student is supported to succeed rather than literally fighting for themselves would be more humane.

Difficult Lived Experiences of Family Members

All twice-exceptional participants, parents, and siblings in this study described living through difficult experiences related to a lack of acceptance, support, information, and resources, which was described in their family profiles and theme exploration in the previous chapter. The difficulties experienced at school seeped into every corner of their lives leading to long-term frustration, exhaustion, stress, and trauma.

As families navigated the complexities of school, they were confronted with many challenges and felt largely unsupported for the majority of the K-12 experience. Although some families eventually found learning environments that appropriately served their twice-exceptional child, the journey to those environments was riddled with heartache,

disappointment, anger, regret, and missed opportunities. Three of the participant groups described experiences that are also mentioned in the literature.

Twice-exceptional Participant Experiences

The twice-exceptional participants in this study shared detailed accounts of troubling experiences throughout school. Each of their stories was unique, however, there were many common threads. Feeling misunderstood in learning environments with a lack of intellectually challenging opportunities or a disproportionate focus on learning differences or disabilities left these gifted students susceptible to difficulties with self-efficacy, self-confidence, and self-actualization. In every case, twice-exceptional participants were left wondering how things might have turned out for them if school had been better for them.

In general, the literature tells us twice-exceptional individuals experience a complex and unique existence which differs significantly from peer populations. Although twice-exceptional students have gotten more recognition from schools in recent years (Foley-Nicpon et al., 2011), only a limited number of studies related to their continued struggle exist. Twice-exceptional learners “do not fit the stereotypical characteristics of students with disabilities or giftedness” (Baldwin et al., 2015, p. 217), but rather are a unique blend of both, which can create complexity for them, their families, and school personnel. They are more susceptible to the stress associated with adolescent development (Coleman, 2001) as their advanced abilities and special needs or disabilities coexist, and school and home are filled with misunderstanding, missed opportunities, and challenges (Baum et al., 2017).

Not being able to connect with intellectual peers or reach the high expectations they set for themselves in their areas of giftedness causes great frustration for twice-exceptional learners, which often leads to social and emotional challenges (Mohammed, 2018). Twice-exceptional children often act out as they are bullied and teased by peers, resulting in “psychological and

emotional issues often hidden behind negative behaviors” (Mohammed, 2018, p. 16). The literature also tells us that twice-exceptional students differ from their peers when it comes to how they perceive social interactions and family life (Conrad & Mueller, 2011) and that they often experience negative perceptions of their relationships with parents, especially mothers, because of feeling they are not living up to their potential in their parent’s eyes (Conrad & Mueller, 2001; Barber & Mueller, 2011).

Parent Experiences

Parents described heartbreaking experiences with school administrators, teachers, clinicians, and family members as they traveled this journey with little to no support. Parents talked about significant disappointment and stress as their child’s gifts were left largely untapped and their differences blamed for issues with teachers and peers. Descriptions of extreme exhaustion and frustration surfaced as they described learning they could not depend on the majority of professionals involved in their child’s life and education. Parents revealed a heavy sense of responsibility requiring constant diligence and significant energy.

The literature tells us parents of twice-exceptional children typically maintain high expectations for their child’s performance (Neurmeister et al, 2013) yet find schools ill-equipped to balance support for their child’s lagging skills while also providing opportunities for advanced learning and higher-level thinking (Rubenstein et al., 2015). This imbalance perpetuates the need for parents to advocate for gifts and disabilities simultaneously (Besnoy et al., 2015). Fighting through the frustration is a necessity if parents want to educate themselves enough to bridge the gap between wanting to advocate effectively and actually being able to do so.

The literature confirms twice-exceptional students who perceive support from parents believe in their own abilities and potential (Wang, 2015) while care and support from teachers improves self-confidence while encouragement and modeling from peers fosters belief in their

academic abilities. Knowing success for their child requires a carefully balanced educational and social experience, parents live with ongoing concern and worry for their twice-exceptional child's well-being (Besnoy et al., 2015). Parents learn that twice-exceptional students rarely receive services for both of their exceptionalities (Baum et al., 2001) and learn the hard way that low academic self-concept combined with social difficulties can be crushing for their child (Baum et al., 2001). Parents often experience a loss of faith in the professionals they look to for help in protecting, teaching, and nurturing their child (Besnoy et al., 2015) and feel left to go it alone.

Research indicates that believing their family has the capacity to develop the desired outcome is directly related to how satisfied family members are with their family life (Bandura et al., 2011). Diligent advocacy can create stress for families and interruption of their careers (Dyson, 2007) with only positive advocacy outcomes producing positive experiences (Rios et al., 2021; Wang et al., 2004). Frustration within marital relationships can occur in cases where advocacy experiences are not positive or productive (Rios et al., 2021) leaving parents discouraged and angry. Parents of learning disabled children have feelings of guilt over difficult relationships and interactions they've had with their child (Dyson, 2010), adding to the stress endured by the entire family. Parents often perceive working to secure support and resources for their twice-exceptional children as a fight or battle producing high levels of stress (Wang et al., 2004), especially when educators do not value their input.

Sibling Experiences

Brad and Ethan described very different lived experiences. As an older sibling, Brad was not as acutely aware of what his parents went through to support Brian; however, he clearly recognized they provided support and advocacy. Brad described his relationship with Brian as very difficult when they were young and expressed deep regret for being mean and physically

abusive to him for a number of years. Brad described Brian as incredibly smart and recalled Brian's school experiences as mostly difficult with the exception of experiences with two high school teachers. Brad recognized the positive influence these teachers had on his brother and expressed regret they were short lived given both teachers left the school district for other opportunities. Brad described his relationship with Brian as improving significantly after Brian graduated from high school, noting his brother had become a very different person when he didn't have to go to school each day. He expressed pride in his brother's accomplishments and felt their parents were beginning to accept that it was OK for Brian's chosen path to not include college.

As a younger sibling, Ethan described significant annoyance and frustration with Elliott. He recognized their parents as exhausted and as funneling significant energy and time toward Elliott's needs, which meant he and their younger sibling were left with impatient and often distracted parents. Ethan described their daily home life as mostly spoiled by constant attention to Elliott, noting Elliott's disregard for the negative impact he had on the family as difficult to accept. Ethan attributed Elliott's challenges directly to school and described Elliott as taking out his frustrations on him. Ethan indicated that things were different during the summer months when school was not in session, adding these were the best times with his brother. He also described better understanding of neurodivergent peers at school because of his experiences with Elliott at home. Ethan expressed hope that his brother would be able to support himself and succeed in college yet described reservations that it was possible.

Limited research specific to the experiences of siblings of the gifted or siblings of the learning disabled is available; however, very little research related to the experiences of siblings of twice-exceptional individuals is available. In the case of gifted individuals, the literature indicates gifted students are not a homogenous group and have varying experiences with

“morale, stress levels, health, coping, continuous motivations, family challenges, and peer relations” (Peterson et al., 2009, p. 44). These findings suggest experiences with their siblings vary greatly as well. Expectations for difficult relationships based on one sibling being identified as gifted and the other not typically are said to be based upon opinion rather than reliable research (David, 2021). Literature related to the siblings of learning disabled individuals also is largely inconsistent, with some researchers concluding that having a learning disabled brother or sister has negative effects on self-concept and behaviors of the sibling but the sibling relationships are typical (Lardieri et al., 2000) while other researchers determined having a learning disabled sibling had no effect on self-concept but was a predictor of a negative sibling relationship (Dyson, 1996). More research in this area is needed as siblings are integral to the families.

Influence of Experiences on Emotional, Behavioral, Social, and Mental Health

Interviews with study participants revealed twice-exceptional participants did not feel comfortable at school the majority of the time. All families described experiences and concerns about their child feeling lonely and socially isolated with the majority of families discussing behavior, ability to cope, and general attitude toward school improving with age, maturity, and self-understanding. The following sub-themes expand on the emotional, behavioral, social and mental health influences on the twice-exceptional participants.

Emotional Tolls and Distressing Behaviors

Parents described the emotional price paid by the whole family as their twice-exceptional child endured learning environments where they were misunderstood, unsupported, and even abused simply for being who they were. With little to no clear understanding of their child’s full learning profile, most families were left to watch their child struggle despite their best efforts to advocate for them. As unresolved frustration mounted, overwhelming emotions emerged from

their twice-exceptional child, and difficult and distressing behaviors followed with angry outbursts, sobbing, verbal abuse, destructive behavior, and defiance.

The literature tells us that a misalignment between a child's learning profile and a school's approach causes significant hardship for the child, family, and teachers (Baum et al., 2017), and as a student experiences repeated failure to meet expectations they begin to believe they are deficient and abnormal, which puts them at risk for greater difficulties (Levine, 2002). If the child's basic needs go unmet, it eventually will show up in their behavior (Maslow, 1943), which draws further attention and begins to dismantle their self-concept, self-efficacy, and ability to remain regulated emotionally (Dole, 2000, as cited in Barber, 2011). The literature also indicates that when a child's strengths are disregarded or suppressed, serious damage takes place deep inside the child (Levine, 2002). Over time, ongoing stress changes the brain resulting in behavior issues, difficulty acquiring knowledge and understanding, and disorders in mood (Li et al., 2008 as cited in Yaribeygi, 2017).

Responses to Extreme Stress

As the stress mounted for these families and parents looked for answers and support, many of the twice-exceptional children reached their limits. From getting in fights at school, to angry outbursts at home, hyperventilating before school, blocking out traumatic school experiences, and experiencing academic failure, each twice-exceptional child responded in their own way to overwhelming degrees of stress. Parents struggled with knowing to whom to turn and described very difficult stretches of time for their family. The bottom line is that twice-exceptional students faced extreme stress in school and they suffered greatly, which undoubtedly influenced their ability to fulfill expectations and contribute to the school community.

The literature indicates stress is any intrinsic or extrinsic stimulus that evokes a biological response which in turn produces a stress response (Yaribeygi et al., 2017). As the body experiences stress in its many forms and levels of severity, it responds accordingly with reactions ranging from achievement of balance, to life threatening reactions, and in the most extreme cases, death (2017). While mild forms of stress can train the brain (Ursin & Eriksen, 2004) and facilitate improvement in cognitive function, “too much stress has an adverse effect” (Yaribeygi et al. 2017, p. 1061) resulting in a reduction of cognition while toxic levels of stress early in life leave indelible scars that disturb brain architecture and developing “organ systems and regulatory functions” (Shonkoff et. al., 2011, p. 243).

Awareness of what triggers a response is not required; however, acute awareness of how the body feels in response to the trigger is certain (Porges, 2018). Primary physiological systems can be overwhelmed when stress exceeds a person’s individual capacity or ‘window of tolerance’ (Siegel, 1999), resulting in cognitive disorders related to judgment and memory (Yaribeygi, et al., 2017). Polyvagal Theory (Porges, 2018) indicates that the importance of feeling safe in learning environments is often overlooked and internal resources needed for learning are redirected toward survival. Applying these concepts and findings to what is observed and experienced in educational settings seems a logical suggestion.

Difficulty with Social Interactions

All families described difficulty with social interaction for their twice-exceptional child with significant difficulty described for autistic, twice-exceptional participants. In all cases the presence or absence of intellectual peers influenced the child’s confidence and ability to connect with peers. Parents understood why peers tended to steer clear of their children, noting their behavior as something of a red flag for other students. Most parents indicated adults appreciated their child much more than same-aged peers, which perhaps served as more reason for peers to

stay away. Families described difficult, hurtful, and sometimes chronic experiences with bullying by peers and even teachers. In some cases, these experiences resulted in the twice-exceptional child pulling farther away from social interaction altogether. Parents described their children as a few years behind in social skills and as not knowing how to engage with peers. Parents shared feelings of sadness and helplessness given their child had few to no friends and desperately needed them.

The literature tells us twice-exceptional students may be doubly disadvantaged socially due to unique stigma related to learning disabled students and to gifted students (Barber & Mueller, 2011) and may also struggle with social interaction because of their own perceived failure to live up to their giftedness because of their learning differences (Coleman, 2001). They struggle to find intellectual peers who share their passions and interests (Baum et al., 2001) and experience a high incidence of disruptive behaviors which may be connected to their having difficulty finding intellectual peers (Neihart, 2008; Nielsen, 2002). Parents, teachers, and peers may not always know how to respond to the behaviors of gifted children, as they typically exhibit intensity when trying to express what's inside (Daniels & Piechowski, 2014).

Twice-exceptional students often experience isolation, mockery, and bullying by other students (Mohammed, 2018) with the negative social interactions often leaving them afraid well into adulthood. Researchers indicate friendship is critical to the development of gifts and talents because it is within those friendships that one can develop and experience an impact on "inner life" (Conejeros-Solar et al., 2021).

Struggles with Mental Health

Most parents shared insight into difficulties their child experienced with mental health that they directly attributed to difficult educational and social experiences. Depression, anxiety, obsessive behaviors, dissociating or detaching from happened in the past, and suicidal thoughts

were described. Medication to treat mental health issues was mentioned in some cases, and most families mentioned seeking mental health counseling services for their child. Two families sought professional clinical assistance to help their child overcome suicidal thoughts, and a third family described ongoing concerns their child's suffering would lead them to drug use or an overdose.

The literature tells us that intensities are common in the gifted population (Daniels & Piechowski, 2014) and classifying behaviors such as “obsessions, compulsions, and panic attacks” as psychiatric problems (Van Der Kolk, 2014) are frequently cited. Twice-exceptional children often feel shame for performing below their potential and seek counseling for social and emotional problems ranging from mild depression to contemplating suicide (Moon & Reis, 2004). Studies suggest the consequences of adverse experiences early in life have enduring effects (Herzog & Schmahl, 2018) and evidence from epidemiological and neurological studies suggests adverse experiences are connected to brain dysfunctions that influence physical and mental health for life (Herzog & Schmahl, 2018, p. 2). The signs of trauma in children reveal patterns of “withdrawal, depression, and anxiety across different traumatic event types” (Chafouleas et al., 2018, pp. 43-44) and externalize as things such as “aggression, hyperactivity, impulsivity, and oppositional defiant behaviors” (p. 44). Researchers agree stress can cause many diseases and pathological conditions, and people exposed to ongoing stress have a much higher likelihood of developing disease (Herzog & Schmahl, 2018). When operating in stress-enhanced mode, the students' basic need for safety is jeopardized, their internal resources needed for learning are redirected for coping and survival, and they are left at risk for the onset of mental and physical illness (Porges, 2018; Ursin & Eriksen, 2014).

Limitations of the Study

To increase validity, decrease bias, ensure accurate representation of participants, and promote transparency, answers from the questionnaires and transcripts from the interviews were structured into initial themes for analysis (Gall et al., 2003). To support the accuracy of my interpretations, triangulation of sources was used (Stake, 1995). In addition, the use of questionnaires, semi-structured interviews with probes, and observations helped me establish a system of checks and balances to determine whether my new views were “consistent with what is already well known” (p. 77). A version of member checking was utilized to protect the confidentiality of each family member. This entailed sending a synthesized family profile to a point person within each family to check for factual accuracy. Asking my committee members to review my work at points throughout the study also offered purposeful opportunities to check for accuracy in my “seeing, hearing, coding, analyzing, and writing” (p. 77).

This study had some potential limitations. First, I invited student peers from Bridges Graduate School to participate and share the call for participants with their contacts. I also distributed the call for participants to my personal network of colleagues and acquaintances. Given my studies and personal advocacy efforts, participating families who chose to be included in this study may have been motivated to share their stories due to difficulties experienced in educational environments. Second, because the data collection process achieved through questionnaires and individual interviews was time consuming, the sample size selected for this qualitative research study was limited to five families and a total of 15 participants. Findings are not generalizable, and readers will make their own inferences based on the description of the participant selection and methods used in the study. And third, because interviews were conducted via video conference where I could see each individual, I was able to see each participant's environment and capture body language and facial expressions. However, I may not have achieved the same level of comfort and context as in-person interviews may have afforded.

Recommendations for Policymakers, Higher Education, and DEI Action Groups

I recommend policy makers and institutions of higher learning who develop teacher education, special and gifted education, school administration, school social work, school counseling, and psychology degree programs prioritize increasing awareness of the twice-exceptional population by integrating comprehensive content about twice-exceptional learners into all of the aforementioned degree programs across the country. In addition, requiring continuing education programs to include and regularly update research-based content regarding twice-exceptional students is recommended. I also recommend these educational programs require interdisciplinary collaboration to bridge the gaps and best serve twice-exceptional students and their families.

I also recommend those working to advance research and practice related to Adverse Childhood Experiences (ACEs) broaden the scope of adverse experiences to include trauma experienced in educational settings. This should include adding school-related trauma to ACEs assessments which currently are limited to 10 categories of adversities within the three domains of abuse, neglect, and household challenges (Felitti et al., 1998).

I also recommend training for teachers who work in both public and private schools, and in special education and regular classrooms, that focuses on identification of twice-exceptional students, serving their unique learning needs, and providing appropriately challenging work based upon the student's areas of strength, talent, and interest.

In addition, I recommend diversity, inclusion, and equity (DEI) action groups acknowledge the marginalization of neurodiverse populations and broaden definitions of ability and disability to include neurodiversity as equally relevant and important as other forms of diversity.

Recommendations for Further Research

Building upon the foundation of ACEs research, I recommend additional research on toxic stress and trauma experienced in schools and other educational settings to unearth the realities of traumatized learners. Better understanding of how a dysregulated nervous system can hijack a student from the learning experience is critical for a number of populations, including the twice-exceptional. This essential research could help to build a shared understanding of the gaps between a student's lived experience and the perceptions of those managing the student's learning environments and interventions.

I also recommend more research on the lived experiences of the siblings of twice-exceptional individuals given the current body of research is insufficient. Siblings are an important part of families and have the potential to advance our shared understanding of the lived experiences of families with twice-exceptional members and perhaps would benefit from resources developed specifically for them.

I recommend research studies be conducted that focus specifically on the teachers and school counselors who compassionately and empathetically support twice-exceptional students and their families throughout their educational journey. We can learn from their insight and approaches and amplify their stories so that the positive experiences with teachers and counselors have as much exposure as the difficult experiences.

And finally, I recommend replication of this study, with larger samples of twice-exceptional participants and families located in different regions. We must learn from those who have traveled this complex journey.

Closing Reflections

Mate' states, "We, as caretakers in the world, need to see the human in front of us, not the problem" (Benazzo et al., 2021). Clearly, there is much work to be done on behalf of twice-exceptional students and their families. For decades researchers, educators, and clinicians

have forged a path to understanding and equal treatment for twice-exceptional students, yet history continues to repeat itself in schools around the country, and the suffering continues. As society focuses on improving conditions for marginalized populations, twice-exceptional students and their families must be included, for if they are not, then efforts are not truly inclusive.

Parents protect their children from danger and bad influences, but very few ever think they will need to protect their children from school. Toxic stress and trauma are known to be disruptive and harmful, yet twice-exceptional students continue to endure them in learning environments. Less than adequate services and missed opportunities are fueled by a lack of understanding and acceptance that every mind is unique and worthy, and standardized approaches and expectations inflict damage on those who do not neatly fit into their limits. Within the extraordinary differences of neurodivergent minds, our society may find answers to long-standing problems, but we first must eliminate the unnecessary stress, trauma, and marginalization these minds endure.

Brilliant and compassionate teachers, administrators, counselors, and psychologists are gaining the knowledge to serve twice-exceptional students in school. Parents are educating themselves and boldly searching for anything to help them improve the educational journey for their children. Researchers and clinicians are discovering more wonders of the brain body connection, the impacts of stress and trauma, and the extraordinary capabilities of the neurodivergent mind. And while all of this is happening, twice-exceptional students are suffering, waiting.

It is time for the excuses to end. We must come together on their behalf.

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Appendix A: Participant/Demographic Table

Participant	Role	Age	Gender	Region
Ann	Mother	Not collected	Female	Midwest
Arthur	Father	Not collected	Male	Midwest
Adam	Twice-exceptional participant	18	Male	Midwest
Barbara	Mother	Not collected	Female	Midwest
Bill	Father	Not collected	Male	Midwest
Brian	Twice-exceptional participant	18	Male	Midwest
Brad	Sibling	21	Male	Midwest
Cora	Mother	Not collected	Female	Pacific
Claire	Twice-exceptional participant	16	Female	Pacific
Deborah	Mother	Not collected	Female	Pacific
Dana	Twice-exceptional participant	16	Non-binary	Pacific
Ellen	Mother	Not collected	Female	Midwest
Edward	Father	Not collected	Male	Midwest
Eliott	Twice-exceptional participant	18	Male	Midwest
Ethan	Sibling	15	Male	Midwest

Appendix B: Recruitment Letter for Parents Requesting Their Participation**Institutional Review Board for the Protection of Human Subjects**

Date

Dear (parent),

As a graduate student at Bridges Graduate School of Cognitive Diversity in Education, I am conducting a research study in partial fulfillment of a doctoral degree. You were recommended to me as a potential study participant by my peers at Bridges Graduate School.

My research study entitled “Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments” is designed to capture and convey the realities of difficult school experiences for twice-exceptional students and their parents and siblings, through their own words and stories. Providing this view is expected to offer valuable insight into why twice-exceptional students have difficulty thriving in certain learning environments in spite of strategies in place to help them.

Study participation includes completion of a questionnaire and an interview of at least one parent, a child, and a sibling in the family. Questionnaires can be completed online or on paper and are anticipated to take 20 - 40 minutes to complete. Interviews will take place via Zoom, with audio and video recorded for transcription purposes and are anticipated to take 45 to 60 minutes to complete. Your responses will be kept confidential.

If you are comfortable with the subject matter of the study and willing to participate, I will request written consent for your participation and written consent for any child under the age of 18. Written consent will be sought from any child over 18 years of age and signed assent from those under 18 years of age will be required. You are welcome to contact me at kelley.monterusso@bridges.edu or 616.481.4483 with questions.

If you would like to participate, please reply to this email indicating so by [Month, Day, Year]. Additional information regarding participation will be provided upon receipt of confirmation.

Thank you for considering this opportunity to contribute to my research study. Your time and input will be greatly appreciated.

Sincerely,

Kelley Monterusso

Appendix C: Cover Letter for Parents' Participation**Institutional Review Board for the Protection of Human Subjects****Cover Letter for Parent Participation Consent**

Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments

Dear _____,

I am currently a doctoral student at Bridges Graduate School of Cognitive Diversity in Education. For my doctoral research, I am interested in investigating the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings. This study is being conducted via email and the Zoom virtual video conferencing platform.

Before I am able to conduct any research, I need to obtain informed consent from you. The attached consent form provides a detailed outline of my research study and what your role in the study would be. Please read the consent form and contact me with any questions or concerns. If you would like to participate in the study, please complete and return the signed consent form directly to me.

You can reach me at kelly.monterusso@bridges.edu or (616) 481-4483 if you have any questions.

Best,

Kelley Monterusso

Appendix D: Parent Participant Consent Form**Institutional Review Board for the Protection of Human Subjects****Statement of Informed Consent For Parent Participants**

Title of Study: Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments

Study Investigator(s): Kelley Monterusso

Contact information: kelley.monterusso@bridges.edu, (616) 481-4483

Dissertation Co-Chairs: Dr. Karen Westberg, Dr. Jann Leppien

Contact information: karen.westberg@bridges.edu jann.leppien@bridges.edu

KEY INFORMATION:

- The purpose of this study is to investigate the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school.
- As with all research studies, participation is voluntary.
- You are being asked to participate in this study by completing a questionnaire and an interview. The questionnaires can be completed online or on paper and are anticipated to take 20 - 40 minutes to complete. Your responses will be kept confidential.
- Interviews will take place via Zoom, with video and audio recorded for transcription purposes. This interview is anticipated to take 45 to 60 minutes to complete. Your responses will be kept confidential.
- Pseudonyms will be assigned in place of all names and locations. Participants' actual names will be coded and recorded in a password protected file.
- At any point, the participant may terminate the interview and all recordings and data will be destroyed.
- We believe that there are minimal to no risks associated with this research.
- Participants will not directly benefit from the research; however, we hope that your participation in the study may provide further awareness and support for families of neurodiverse and twice-exceptional students.

INTRODUCTION

You are being asked to participate in a research study designed to explore and describe the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings. This study is being conducted through online communication and the Zoom virtual video conferencing platform. This study is being conducted by Kelley Monterusso in the doctoral program at Bridges Graduate School of Cognitive Diversity in Education (BGS).

You were selected as a possible participant because of your response to the participant recruitment letter and expressed interest in participating in this study.

Please read this consent form and ask any questions you have before agreeing to be in the study.

PROCEDURES:

If you agree to be in this study, you will be asked to do the following:

1. You will be asked to complete a questionnaire with 15 - 30 questions in multiple-choice and open-ended formats. The questionnaires or a questionnaire link will be emailed to you. You will have the option to complete this electronically or to print and complete the questionnaire in writing. The approximate completion time for questionnaires is 20-40 minutes. Completed questionnaires will be returned to the researcher via the online link or email within two weeks of receipt.
2. Following completion of the questionnaire, you will participate in a semi-structured interview on the Zoom video conferencing platform. Interviews will be scheduled at a mutually agreed upon time and are expected to last 45-60 minutes. The interviews will be audio and video recorded to aid with transcription and analysis by the researcher. Recording of the interview is required for participation.
3. You will agree to provide additional information, data, and clarification for the researcher should it be necessary after interviews conclude. Such follow-up may take place over email, telephone or the Zoom online conferencing platform within two weeks of the completed interview. Follow-up is not expected to exceed 30 minutes.

COMPENSATION/INCENTIVES:

You will not receive compensation for your participation in this study.

CONFIDENTIALITY:

The records of this study will be kept private and your confidentiality will be protected. In any sort of report the researcher(s) might publish, no identifying information will be included. The only exception to maintaining confidentiality would be if you indicate that there is immediate and serious danger to the health or physical safety of yourself or others.

Research records will be stored securely and only the researcher will have access to the records. All data will be stored on a password-protected laptop. All study records, including approved IRB documents, recordings, transcripts, and consent forms, will be destroyed by shredding and/or deleting after three years. Video and audio-recordings will be erased as soon as they are transcribed. The researcher and Bridges Graduate School faculty members assisting the researcher with the completion of the study will have access to research records.

Your name and other information that can directly identify you will be deleted from the research data collected as part of the study.

VOLUNTARY NATURE OF THE STUDY:

Participation in this study is voluntary and requires your informed consent. Your decision whether or not to participate will not affect your current or future relations with Bridges Graduate School. If you decide to participate, you are free to skip any question that is asked. You may also withdraw from this study at any time without penalty.

CONTACTS AND QUESTIONS:

The researcher conducting this study is Kelley Monterusso. If you have questions, **you are encouraged** to contact the researcher at (616) 481-4483 or kelley.monterusso@bridges.edu or my dissertation co-chairs: Dr. Karen Westberg karen.westberg@bridges.edu and Dr. Jann Leppien jann.leppien@bridges.edu.

If you would like to talk to someone other than the researchers, please contact Bridges Graduate School of Cognitive Diversity in Education's IRB compliance officer, Dr. Marcia Delcourt, at marcia.delcourt@bridges.edu.

STATEMENT OF CONSENT:

I am 18 years of age or older. I have read and understood the above information. I consent to participate in the study.

Signature (Parent 1): _____ Date: _____

I agree to be audiotaped Yes No
I agree to be videotaped Yes No

Signature (Parent 2): _____ Date: _____

I agree to be audiotaped Yes No
I agree to be videotaped Yes No

Signature of Investigator: _____ Date: _____

Please keep the second copy of this informed consent for your records.

Appendix E: Parent Cover Letter Seeking Permission for Their Child(ren) Under the Age of 18 to Participate in this Study



Institutional Review Board for the Protection of Human Subjects

Cover Letter for Parents/Guardians of Minors

Title of Study: Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments

Study Investigator(s): Kelley Monterusso

Contact information: kelley.monterusso@bridges.edu, (616) 481-4483

Dissertation Co-Chairs: Dr. Karen Westberg, Dr. Jann Leppien

Contact information: karen.westberg@bridges.edu jann.leppien@bridges.edu

Dear Parents/Guardians,

I am currently a doctoral student at Bridges Graduate School of Cognitive Diversity in Education. For my doctoral research, I am interested in investigating the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings. This study is being conducted via email and the Zoom virtual video conferencing platform.

Before I am able to conduct any research, I need to obtain informed consent from you for your child and his or her sibling who are under the age of 18. I will also obtain your children's signed assent forms indicating their willingness to participate in the study. The attached consent form provides a detailed outline of my research study and what your children's roles in the study will be. You may withdraw your children from the study at any time without penalty.

Please read the consent form and contact me with any questions or concerns. If you agree that your child and his or her sibling can participate in the study, please sign the forms below and return to me via email. Additionally, I am requesting that you discuss this study with your children and have them agree to their participation in this study by signing the attached informed assent consent forms.

You can reach me at kelly.monterusso@bridges.edu or (616) 481-4483 if you have any questions.

Sincerely,

Kelley Monterusso

Appendix F: Parent-Guardian Informed Consent Form for Children Under the Age of 18

BRIDGES GRAD SCHOOL
EDUCATING THE EXCEPTIONAL²

Institutional Review Board for the Protection of Human Subjects**Parent/Guardian Informed Consent For Children Under the Age of 18**

Title of Study: Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments

Study Investigator(s): Kelley Monterusso

Contact information: kelley.monterusso@bridges.edu, (616) 481-4483

Dissertation Co-Chairs: Dr. Karen Westberg, Dr. Jann Leppien

Contact information: karen.westberg@bridges.edu jann.leppien@bridges.edu

Dear Parents,

Thank you for considering allowing your children to participate in a research study designed to explore and describe the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings.

Your child and his or her sibling are being asked to participate in a research study designed to explore and describe the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings. This study is being conducted through online communication and the Zoom virtual video conferencing platform. This study is being conducted by Kelley Monterusso in the doctoral program at Bridges Graduate School of Cognitive Diversity in Education (BGS).

Please read this information about the study and the parent consent form for allowing your children to participate, and ask any questions you have before signing the consent form.

KEY INFORMATION:

- The purpose of this study is to investigate the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school.
- As with all research studies, participation is voluntary.
- Your minor child and his or her sibling are being asked to participate in this study by completing a questionnaire and an interview. The questionnaires can be completed online or on paper and are anticipated to take 20 - 40 minutes to complete. Their responses will be kept confidential.
- Interviews will take place via Zoom, with video and audio recorded for transcription purposes. This interview is anticipated to take 45 to 60 minutes to complete. The responses from your child and his or her sibling will be kept confidential.
- Pseudonyms will be assigned in place of all names and locations. Your childrens' actual names will be coded and recorded in a password protected file.
- At any point, your children may terminate the interview and all recordings and data will be destroyed.
- We believe that there are minimal to no risks associated with this research.
- Your children will not directly benefit from the research; however, we hope that their participation in the study may provide further awareness and support for families of neurodiverse and twice-exceptional students.

PROCEDURES:

If you give permission for your children to be in this study, they will be asked to do the following:

1. Complete a questionnaire with 15 - 30 questions in multiple-choice and open-ended formats. The questionnaires will be emailed to participants. Your children will have the option to complete the questionnaire electronically or to complete the questionnaire in writing. The approximate completion time for questionnaires is 20-40 minutes. Completed questionnaires will be returned to the researcher via the online link or through email within two weeks of receipt.
2. Following completion of the questionnaire, each child will participate in a semi-structured interview on the Zoom video conferencing platform with the researcher.. Interviews will be scheduled at a mutually agreed upon time and are expected to last 45-60 minutes. The interviews will be audio and video recorded to aid with transcription and analysis by the researcher.

3. I may request your children to provide additional information and clarification should it be necessary after the interviews. Such follow-up may take place over email, telephone or the Zoom online conferencing platform within two weeks of the completed interview. Follow-up is not expected to exceed 30 minutes.

COMPENSATION/INCENTIVES:

You or your children will not receive compensation for participation in this study.

CONFIDENTIALITY:

The records of this study will be kept private and your childrens' confidentiality will be protected. In any sort of report the researcher(s) might publish, no identifying information will be included. The only exception to maintaining confidentiality would be if you indicate that there is immediate and serious danger to the health or physical safety of you or your children.

Research records will be stored securely and only the researcher will have access to the records. All data will be stored on a password-protected laptop. All study records, including approved IRB documents, recordings, transcripts, and consent forms, will be destroyed by shredding and/or deleting after three years. Video and audio-recordings will be erased as soon as they are transcribed. The researcher and Bridges Graduate School faculty members assisting the researcher with the completion of the study will have access to research records.

You and your children's names and other information that can directly identify you will be deleted from the research data collected as part of the study.

VOLUNTARY NATURE OF THE STUDY:

Participation in this study is voluntary and requires your informed consent for your children's participation.. Your decision whether or not to have them participate will not affect your current or future relations with Bridges Graduate School. You or your children may skip questions on the questionnaire or interview and withdraw from this study at any time without penalty.

CONTACTS AND QUESTIONS:

The researcher conducting this study is Kelley Monterusso. If you have questions, **you are encouraged** to contact the researcher at (616) 481-4483 or kelley.monterusso@bridges.edu or my dissertation co-chairs: Dr. Karen Westberg karen.westberg@bridges.edu and Dr. Jann Leppien jann.leppien@bridges.edu.

If you would like to talk to someone other than the researchers, please contact Bridges Graduate School of Cognitive Diversity in Education's IRB compliance officer, Dr. Marcia Delcourt, at marcia.delcourt@bridges.edu .

STATEMENT OF CONSENT:

I am 18 years of age or older. I have read and understood the above information. I give consent to having my children participate in the study.

Name of Your Child Participating in the Study: _____

I agree to having him/her audiotaped *Yes* *No*

I agree to having him/her videotaped *Yes* *No*

Signature (Parent 1): _____ Date: _____

Signature (Parent 2): _____ Date: _____

Name of Your Child's Sibling Participating in the Study: _____

I agree to having him/her audiotaped *Yes* *No*

I agree to having him/her videotaped *Yes* *No*

Signature (Parent 1): _____ Date: _____

Signature (Parent 2): _____ Date: _____

Signature of Investigator: _____ Date: _____

Please keep the second copy of this informed consent for your records.

Appendix G: Assent Form for Children Under the Age of 18 for Participation in this Study**Institutional Review Board for Research with Human Subjects
Form D2-Statement of Minor Assent****Assent Form for Children Under the Age of 18**

Title of Study: Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments

Study Investigator(s): Kelley Monterusso

Contact information: kelley.monterusso@bridges.edu, (616) 481-4483

Dissertation Co-Chairs: Dr. Karen Westberg, Dr. Jann Leppien

Contact information: karen.westberg@bridges.edu jann.leppien@bridges.edu

Hello,

My name is Kelley Monterusso and I am currently a student at Bridges Graduate School of Cognitive Diversity in Education. I would appreciate you taking part in my study. My study is designed to explore and describe the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings. I am asking for your permission to complete a written questionnaire and participate in a video interview. You may see me writing in a notebook and recording my observations. I am just taking notes about what you share with me to be sure I accurately capture your story.

If you decide that you want to participate, you will be asked to fill out a questionnaire that asks about your school experiences. It should take approximately 20 - 40 minutes to complete. Then you will be asked to participate in a video interview that is anticipated to last 45 - 60 minutes.

Your parent(s) or legal guardian have already said that it was okay for you to answer these questions. If there are questions on the questionnaire or pose to you during the interview, you have the right to skip any of those that make you feel uncomfortable. All information you share with me will remain confidential and your name will never be revealed. If you do not want to participate, no one will treat you any differently, and no one will know unless you tell them.

You can ask questions now or during the study. If you have questions after completing the study, your parents have the researcher's contact information.

STATEMENT OF ASSENT:

By signing the form, I agree to participate in this study. I understand that I may change my mind at any time.

Signature of participant (under 18)

Date

Printed name

Birthdate

Signature of witness (18 years of age or older)

Date

Appendix H: Cover Letter for Adult Participation**Institutional Review Board for the Protection of Human Subjects****Cover Letter for Adult Participation Consent**

Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments

Dear _____,

I am currently a doctoral student at Bridges Graduate School of Cognitive Diversity in Education. For my doctoral research, I am interested in investigating the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings. This study is being conducted via email and the Zoom virtual video conferencing platform.

Before I am able to conduct any research, I need to obtain informed consent from you. The attached consent form provides a detailed outline of my research study and what your role in the study would be. Please read the consent form and contact me with any questions or concerns. If you would like to participate in the study, please complete and return the signed consent form directly to me.

You can reach me at kelly.monterusso@bridges.edu or (616) 481-4483 if you have any questions.

Best,

Kelley Monterusso

Appendix I: Adult Participant Consent Form



Institutional Review Board for the Protection of Human Subjects

Statement of Informed Consent For Adult Participants

Title of Study: Lived Experiences of Twice-Exceptional Students and Their Families: The Effects of Toxic Stress in Learning Environments

Study Investigator(s): Kelley Monterusso

Contact information: kelley.monterusso@bridges.edu, (616) 481-4483

Dissertation Co-Chairs: Dr. Karen Westberg, Dr. Jann Leppien

Contact information: karen.westberg@bridges.edu jann.leppien@bridges.edu

KEY INFORMATION:

- The purpose of this study is to investigate the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school.
- As with all research studies, participation is voluntary.
- You are being asked to participate in this study by completing a questionnaire and an interview. The questionnaires can be completed online or on paper and are anticipated to take 20 - 40 minutes to complete. Your responses will be kept confidential.
- Interviews will take place via Zoom, with video and audio recorded for transcription purposes. This interview is anticipated to take 45 to 60 minutes to complete. Your responses will be kept confidential.
- Pseudonyms will be assigned in place of all names and locations. Participants' actual names will be coded and recorded in a password protected file.
- At any point, the participant may terminate the interview and all recordings and data will be destroyed.
- We believe that there are minimal to no risks associated with this research.
- Participants will not directly benefit from the research; however, we hope that your participation in the study may provide further awareness and support for families of neurodiverse and twice-exceptional students.

INTRODUCTION

You are being asked to participate in a research study designed to explore and describe the stress produced by the educational experiences of twice-exceptional students who have had difficult or traumatic experiences in school. This study will entail capturing and conveying the effects of stress through the lived experiences of the students, parents, and siblings. This study is being conducted through online communication and the Zoom virtual video conferencing platform. This study is being conducted by Kelley Monterusso in the doctoral program at Bridges Graduate School of Cognitive Diversity in Education (BGS).

You were selected as a possible participant because of your parents' response to the participant recruitment letter and expressed interest in participating in this study.

Please read this consent form and ask any questions you have before agreeing to be in the study.

PROCEDURES:

If you agree to be in this study, you will be asked to do the following:

4. You will be asked to complete a questionnaire with 15 - 30 questions in multiple-choice and open-ended formats. The questionnaires or a questionnaire link will be emailed to you. You will have the option to complete this electronically or to print and complete the questionnaire in writing. The approximate completion time for questionnaires is 20-40 minutes. Completed questionnaires will be returned to the researcher via the online link or email within two weeks of receipt.
5. Following completion of the questionnaire, you will participate in a semi-structured interview on the Zoom video conferencing platform. Interviews will be scheduled at a mutually agreed upon time and are expected to last 45-60 minutes. The interviews will be audio and video recorded to aid with transcription and analysis by the researcher. Recording of the interview is required for participation.
6. You will agree to provide additional information, data, and clarification for the researcher should it be necessary after interviews conclude. Such follow-up may take place over email, telephone or the Zoom online conferencing platform within two weeks of the completed interview. Follow-up is not expected to exceed 30 minutes.

COMPENSATION/INCENTIVES:

You will not receive compensation for your participation in this study.

CONFIDENTIALITY:

The records of this study will be kept private and your confidentiality will be protected. In any sort of report the researcher(s) might publish, no identifying information will be included. The only exception to maintaining confidentiality would be if you indicate that there is immediate and serious danger to the health or physical safety of yourself or others.

Research records will be stored securely and only the researcher will have access to the records. All data will be stored on a password-protected laptop. All study records, including approved IRB documents, recordings, transcripts, and consent forms, will be destroyed by shredding and/or deleting after three years. Video and audio-recordings will be erased as soon as they are transcribed. The researcher and Bridges Graduate School faculty members assisting the researcher with the completion of the study will have access to research records.

Your name and other information that can directly identify you will be deleted from the research data collected as part of the study.

VOLUNTARY NATURE OF THE STUDY:

Participation in this study is voluntary and requires your informed consent. Your decision whether or not to participate will not affect your current or future relations with Bridges Graduate School. If you decide to participate, you are free to skip any question that is asked. You may also withdraw from this study at any time without penalty.

CONTACTS AND QUESTIONS:

The researcher conducting this study is Kelley Monterusso. If you have questions, **you are encouraged** to contact the researcher at (616) 481-4483 or kelley.monterusso@bridges.edu or my dissertation co-chairs: Dr. Karen Westberg karen.westberg@bridges.edu and Dr. Jann Leppien jann.leppien@bridges.edu.

If you would like to talk to someone other than the researchers, please contact Bridges Graduate School of Cognitive Diversity in Education's IRB compliance officer, Dr. Marcia Delcourt, at marcia.delcourt@bridges.edu.

STATEMENT OF CONSENT:

I am 18 years of age or older. I have read and understood the above information. I consent to participate in the study.

Signature: _____ Date: _____

I agree to be audiotaped Yes No
 I agree to be videotaped Yes No

Signature of Investigator: _____ Date: _____

Please keep the second copy of this informed consent for your records.

Appendix J: Twice-Exceptional Student Questionnaire

The following questionnaire can be completed using the provided Survey Monkey link or in paper format and returned via email. Please answer each of the following questions to the best of your ability by selecting the most appropriate answer(s). If you prefer, you may skip any question.

How would you describe your overall school experience? (select one answer)

1. Not at all difficult
2. Slightly difficult
3. Moderately difficult
4. Very difficult
5. Extremely difficult

What words would you use to describe your overall school experience?

How often do you experience stress at school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How would you describe the stress experienced in educational settings? (select one answer)

1. Not upsetting
2. Slightly upsetting
3. Moderately upsetting
4. Very upsetting
5. Extremely upsetting

What do you think caused stress for you in school?

Which grades were most challenging for you? (select all that apply)

1. Preschool
2. Elementary (Kindergarten through fifth grade)
3. Middle School (sixth through eighth grade)
4. High School (ninth through twelfth grade)
5. College
6. Vocational/post-high school

Why were the grades selected in the previous question most challenging for you?

How often do you recall your parents advocating for you at school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often did you advocate for yourself at school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often were strength-based talent-focused opportunities offered to you in school?(select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often were solutions related to your learning disabilities or differences the focus of attention? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

Who helped you successfully navigate school? (select all that apply)

1. Parents
2. Siblings
3. Friends
4. Teachers
5. Administrators
6. School Counselors
7. School Social Workers
8. Practitioners (i.e., educational therapists, psychologists, medical personnel, social workers, etc.)
9. 504/IEP Coordinators
10. Faith-based leaders
11. Other _____

How much did your school experiences affect your home and family life? (select one answer)

1. Not at all significant
2. Slightly significant

3. Moderately significant
4. Very significant
5. Extremely significant

Appendix K: Parent Questionnaire

The following questionnaire can be completed using the provided Survey Monkey link or in paper format and returned via email. Please answer each of the following questions to the best of your ability by selecting the most appropriate answer(s). If you prefer, you may skip any question.

I attest that my child has scored 120 or above on an IQ test and has been diagnosed with learning disabilities or identified as having learning differences.

1. Yes
2. No

How old is your twice-exceptional child? _____

What is the highest grade or level of education your child has completed? _____

What type of school(s) did your child attend for elementary school? (select all that apply)

1. Rural Public School
2. Suburban Public School
3. Urban Public School
4. Homeschool
5. Private School
6. Microschool
7. Other _____

What type of school(s) did your child attend for middle school? (select all that apply)

1. Rural Public School
2. Suburban Public School
3. Urban Public School
4. Homeschool
5. Microschool
6. Private School
7. Other _____

What type of school(s) did your child attend for high school? (select all that apply)

1. Rural Public School
2. Suburban Public School
3. Urban Public School
4. Homeschool
5. Private School
6. Microschool
7. Other _____

How many times did your child change school settings due to difficulties? (select one answer)

1. 0 times
2. 1 time

3. 2 times
4. 3 times
5. 4 or more times

How involved have you been in your child's education? (select one answer)

1. Not at all involved
2. Slightly involved
3. Moderately involved
4. Very involved
5. Extremely involved

How would you describe your child's overall school experience? (select one answer)

1. Not at all difficult
2. Slightly difficult
3. Moderately difficult
4. Very difficult
5. Extremely difficult

How often do you believe your child experienced stress in educational settings? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

In which grades did your child experience the most difficulty with academic performance? (select one answer)

1. Preschool
2. Elementary (Kindergarten through fifth grade)
3. Middle School (sixth through eighth grade)
4. High School (ninth through twelfth grade)
5. College
6. Vocational/post-high school

In which grades did your child experience the most social, emotional and behavioral issues? (select one answer)

1. Preschool
2. Elementary (Kindergarten through fifth grade)
3. Middle School (sixth through eighth grade)
4. High School (ninth through twelfth grade)
5. College
6. Vocational/post-high school

How often was advocating for your child necessary? (select one answer)

1. Never

2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often were strength-based talent-focused opportunities offered as a strategy for addressing difficulty in school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often were solutions related to remediating learning disabilities and differences offered as strategies for addressing difficulty in school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

Who has helped your child and family successfully navigate the educational system? (select all that apply)

1. Parents
2. Siblings
3. Teachers
4. Administrators
5. School Counselors
6. School Social Workers
7. Practitioners (i.e., educational therapists, psychologists, medical personnel, social workers, etc.)
8. 504/IEP Coordinators
9. Faith-based leaders
10. Other _____

How significant have your child's school experiences been on the quality of your home and family life? (select one answer)

1. Not at all significant
2. Slightly significant
3. Moderately significant
4. Very significant
5. Extremely significant

How often did you worry about your 2e child when they were at school? (select one answer)

1. Never
2. Rarely

3. Occasionally
4. A moderate amount
5. A great deal

How often did you worry about your other children because of your 2e child's difficulty in school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal
6. Does not apply (no other children)

Appendix L: Sibling Questionnaire

The following questionnaire can be completed using the provided Survey Monkey link or in paper format and returned via email. Please answer each of the following questions to the best of your ability by selecting the most appropriate answer(s). If you prefer, you can skip any question.

How would you describe your school experience? (select one answer)

1. Not at all difficult
2. Slightly difficult
3. Moderately difficult
4. Very difficult
5. Extremely difficult

What words would you use to describe your school experience?

How would you describe your sibling's school experience? (select one answer)

1. Not at all difficult
2. Slightly difficult
3. Moderately difficult
4. Very difficult
5. Extremely difficult

What words would you use to describe your sibling's school experience?

How often do you think your sibling experienced stress at school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often do you recall your parents advocating for your sibling at school? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often was the focus of attention on your sibling's learning disabilities or differences? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount

5. A great deal

How often was the focus of attention on your sibling's strengths and talents? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

Who helped your sibling navigate school? (select all that apply)

1. Parents
2. Siblings
3. Teachers
4. Administrators
5. School Counselors
6. School Social Workers
7. Practitioners (i.e., educational therapists, psychologists, medical personnel, social workers, etc.)
8. 504/IEP Coordinators
9. Faith-based leaders
10. Other _____

How much did your sibling's school experiences affect your home and family life? (select one answer)

1. Not at all significant
2. Slightly significant
3. Moderately significant
4. Very significant
5. Extremely significant

How often did you worry about your sibling? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

How often did you worry about your parent(s)? (select one answer)

1. Never
2. Rarely
3. Occasionally
4. A moderate amount
5. A great deal

Appendix M: Twice-Exceptional Student Interview Protocol

(Insert Name), thank you for agreeing to speak with me today and for returning the interview permission form. As you know, I am completing a doctoral program at Bridges Graduate School for Cognitive Diversity in Education, and this interview is part of my final project.

The purpose of this study is to explore the lived experiences of twice-exceptional students and their families and the presence of toxic stress in learning environments. I'll be video and audio-recording and transcribing our conversation for the purposes of my assignment. Although it would be helpful to me if you could leave your camera on during the interview, I will be capturing an audio or sound recording only.

We have the next 45 - 60 minutes to discuss questions around the topic. You may request to skip questions or take a break at any point. Are you ready to begin?

1. I'd like to start by talking about your strengths, talents and interests. What can you tell me about them?
2. When did you first recognize you had these strengths, talents and interests?
3. How have you developed your strengths, talents and interests both in and out of school?
4. What would you like to tell me about your overall school experience?
5. Could you tell me about your elementary school experience? Examples of what you liked, disliked and why would be helpful.
6. Do you remember how you felt about yourself in elementary school? If so, what can you tell me?
7. Could you tell me about your middle school experience? Examples of what you liked, disliked and why would be helpful.
8. Do you remember how you felt about yourself in middle school? If so, what can you tell me?
9. How about your high school experience? Examples of what you liked, disliked and why would be helpful.
10. How did you feel about yourself in school? Are there experiences that helped to shape these feelings?

11. If school was challenging for you, how was it challenging and who helped you through it? How did they help you?
12. Tell me about your favorite teachers? What do or did you like about them?
13. Tell me about your least favorite teachers? Why are or were they your least favorite?
14. Tell me about the social aspects for you in school? Examples of friendships and social activities would be helpful.
15. Who has been most influential in your life and why?
16. Have you or do you plan to attend college or vocational school after graduating from high school? How did you make your decision?
17. If you could change anything about your school experience, what would it be and why?
18. What do you wish your teachers knew about you?
19. What do you wish your friends knew about you?
20. Is there anything else about your school experiences that you would like to share with me?

Prompts for more detail:

- What do you mean by...?
- Can you give me some examples of that?
- What do you think about that?
- Do you believe that?
- Do you have anything more to add about that?
- Would it be fair to say...?
- Would it be correct to say...?

(Insert name), this concludes our interview. I want to thank you for taking the time to talk with me today. It has been a privilege to speak with you.

Appendix N: Parent Interview Protocol

(Insert Name), thank you for agreeing to speak with me today and for returning the interview permission form. As you know, I am completing a doctoral program at Bridges Graduate School for Cognitive Diversity in Education, and this interview is part of my final project.

The purpose of this study is to explore the lived experiences of twice-exceptional students and their families and the presence of toxic stress in learning environments. I'll be video and audio-recording and transcribing our conversation for the purposes of my assignment. Although it would be helpful to me if you could leave your camera on during the interview, I will be capturing an audio or sound recording only.

We have the next 45 - 60 minutes to discuss questions around the topic. You may request to skip questions or take a break at any point. Are you ready to begin?

1. Tell me about your relationship with your twice-exceptional child.
2. What can you tell me about your child's strengths, talents and interests?
3. When and how did you first recognize your child had these strengths, talents and interests?
4. When and how was your child assessed for learning, behavioral, or psychological concerns?
5. Were assessments completed by school personnel or private psychologists?
6. How did your child react to the assessment/diagnosis?
7. How has your child developed their strengths, talents and interests both in and out of school?
8. We will explore their elementary, middle and high school experiences in detail. To get started, what would you like to tell me about your child's overall school experience?
9. Tell me about your child's elementary school experience.
10. If elementary school was challenging for your child, what kind of help did you receive and from whom?
11. Tell me about your child's middle school experience.

12. If middle school was challenging for your child, what kind of help did you receive and from whom?
13. Tell me about your child's high school experience.
14. If high school was challenging for your child, what kind of help did you receive and from whom?
15. Tell me about your child's favorite teachers. Why do you think they were your child's favorite?
16. Tell me about your child's least favorite teachers. Why do you think they were your child's least favorite?
17. Tell me about the social aspects of school for your child. Examples of friendships and social activities would be helpful.
18. Tell me about your home and family life while your child was in school.
19. Did you ever feel like your child wasn't psychologically safe in school? If so, can you explain?
20. Did you ever feel like your child was misunderstood in school? If so, can you explain?
21. If you could change anything about your child's school experience, what would it be and why?
22. What do you wish your child's teachers knew about them?
23. What do you wish your child's friends or peers knew about them?
24. Is there anything else about your child's school experiences that you would like to share with me?

Prompts for more detail:

- What do you mean by...?
- Can you give me some examples of that?
- What do you think about that?
- Do you believe that?

- Do you have anything more to add about that?
- Would it be fair to say...?
- Would it be correct to say...?

(Insert name), this concludes our interview. I want to thank you for taking the time to talk with me today. It has been a privilege to speak with you.

Appendix O: Sibling Interview Protocol

(Insert Name), thank you for agreeing to speak with me today and for returning the interview permission form. As you know, I am completing a doctoral program at Bridges Graduate School for Cognitive Diversity in Education, and this interview is part of my final project.

The purpose of this study is to explore the lived experiences of twice-exceptional students and their families and the presence of toxic stress in learning environments. I'll be video and audio-recording and transcribing our conversation for the purposes of my assignment. Although it would be helpful to me if you could leave your camera on during the interview, I will be capturing an audio or sound recording only.

We have the next 45 - 60 minutes to discuss questions around the topic. You may request to skip questions or take a break at any point. Are you ready to begin?

1. Tell me about your relationship with your twice-exceptional sibling.
2. I'd like to start by talking about your sibling's strengths, talents and interests. What can you tell me about them?
3. How has your sibling developed their strengths, talents and interests both in and out of school?
4. What can you tell me about your home life when your sibling was in elementary school?
5. What can you tell me about your home life when your sibling was in middle school?
6. What can you tell me about your home life when your sibling was in high school?
7. Tell me about the social aspects of school for your sibling. Examples of friendships and social activities would be helpful.
8. Did you ever feel like your sibling was misunderstood in school? If so, can you explain?
9. If you could change anything about your sibling's school experience, what would it be and why?
10. Do you think your sibling's school experience affected your school experience? If so, how?
11. What do you wish your sibling's teachers knew about them?
12. What do you wish your sibling's friends or peers knew about them?
13. Is there anything else about your child's school experiences that you would like to share with me?

Appendix P: Coding Examples

Raw data	Preliminary codes	Final code
<p>¹ Because they performed so average, that was also part of it. I mean like nobody was really acknowledging, particularly in middle school, nobody was really acknowledging strengths or weaknesses, you know, so they sort of floated in the middle. I don't think that was great for their self-confidence either. There was a disproportionate focus on the ADHD, for example, because they had a 504 plan.</p>	<p>no acknowledgment of strengths or weaknesses</p> <p>disproportionate focus on the ADHD</p>	<p>¹ Lack of Focus on Strengths, Talents, and Interests</p>
<p>² I'm an introvert because I do not like to interact with people very much like at school. I only have like one friend. I try to keep to myself.</p>	<p>dislikes interaction with people</p> <p>keeps to self</p>	<p>² Difficulty with Social Interactions</p>
<p>³ I think he realized he's not bogged down by a time waster of school. He can focus on the things that he wants to do, which has improved his mood, like tenfold. He's not like depressed all the time.</p>	<p>improved mood</p> <p>not depressed</p>	<p>³ Struggles with Mental Health</p>

Appendix Q: Major Themes and Sub-themes

Issues with access to appropriate learning environments:

- lack of focus on strengths, talents, and interests
- inflexible and limiting standardized curriculum
- incomplete, inconsistent, and confusing observations and psychological assessments
- ineffective and disrespectful handling of 504 plans and IEPs
- positive and destructive experiences with teachers
- exhausting experiences with advocacy

Difficult lived experiences of family members:

- twice-exceptional participant experiences
- parent experiences
- sibling experiences

Influence of experiences on emotional, behavioral, social, and mental health:

- emotional tolls and distressing behaviors
- responses to extreme stress
- difficulty with social interactions
- struggles with mental health