Bringing It Forward: Identifying International Schools' Needs to Effectively Support 2e Learners

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Abstract

Every human life has the right to an education and an environment that ensures the possibility of reaching self-actualization and self-fulfillment. Human diversity is vast, yet up until now, education systems have focused on equality of education rather than on equity of education. Equity is viewed through the lens of the whole child, taking into consideration not only socioeconomic differences, but also a unique set of cognitive, social, and emotional attributes, along with a complex mix of strengths and difficulties that comprise learning profiles. Schools, communities, countries, and humanity desperately need a shift of focus to move forward.

The purpose of this dissertation was to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. Through this research, the international school community was provided with the opportunity to showcase what they already know and do and to clarify areas of need to become a more inclusive and 2e supportive learning community. More specifically, the researchers recognized perceptions, knowledge, and practices, analyzing common needs throughout diverse international schools, and providing a future research discussion to guide schools forward as they navigate support for their 2e populations.

This dissertation explored and identified key themes and elements that surround the twice-exceptional literature and its complexity, and developed a needs assessment survey grounded on a review of literature and a series of qualitative interviews with experts in the field of twice-exceptionality and international school education. The survey, applied at multiple international school sites, provided data about the professional needs within the international school community. Methods of data collection included questionnaires targeting school leaders

such as directors of learning, who are responsible for guiding curriculum and learning within

their schools. The data obtained from these surveys were examined to provide a discussion to

guide future research and the implementation of best practices.

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Chapter 1: Introduction to the Study

International education is a complex and diverse system that transcends political and cultural borders. As the international school community grows hand in hand with globalization, it became apparent that these unique and diverse schools may require guidance to embrace their abilities to support complex learners including those that are neurodiverse and twice-exceptional. This research project explored the international school community and the current position its schools find themselves with regard to the support provided to neurodiverse and twice-exceptional learners. Acknowledging there are unidentified areas for growth in the international school community, the researchers, through careful research, explored an overarching research question to pinpoint the needs of these institutions in order to initiate positive change.

Do all students receive what they need to support them with the same opportunity to grow, flourish and reach their goals? Every young human life has the right to an education that ensures the possibility of self-actualization (Kaufman, 2013). Educational institutions should be places where each student's diversity is acknowledged, identified, and addressed, where learners are served holistically understanding "the goal is not for children to show how much they know or how bright they are but to show who they are" (Kaufman 2013, p. 88) and aid in their growth and journey towards self-actualization.

Unfortunately, students are typically identified by what they cannot do and may receive special services to fix their deficits if they are looked at individually at all. In schools where they value talent areas of students, opportunities are often provided in terms of advanced courses or extracurricular activities only for students who manifest some advanced ability or talent that begs

attention. The idea of a strength-based, talent-focused approach to education as suggested by

Renzulli and Reis (2014) promoting "a rising tide lifts all ships" approach by providing a

continuum of services comprised of general enrichment strategies to all students (Renzulli &

Reis, 2003, p. 345), is not yet widely acknowledged as a guiding philosophy. Because of this,

students who have both advanced abilities and challenges often are at risk of falling through the

cracks of receiving appropriate services.

Over the past ten years, the researchers, with a combined experience of more than thirty

years serving within international schools, have noticed a shift in the nature of the student body

to include neurodiverse learners, pointing to many institutions' process to begin embracing

neurodiversity. To cater to the neurodiversity movement that is slowly permeating all walks of

society, the international world of education began to integrate multiple layers of change to

cultivate an environment that supports these neurodiverse learners. These schools integrated a

variety of professional development series addressing inclusion, implemented assorted programs

to serve the range of needs of these learners, and adopted intervention processes such as the

Response to Intervention (RTI) model to guide individual student support (Baum et al., 2017).

While these programs are research based and have moved schools in the right direction towards

serving those with learning difficulties or giftedness, effective support for the most complex

population within the neurodiverse spectrum, twice-exceptional learners, still requires attention.

These learners have dual exceptionalities, representing both ends of the neurodiverse continuum,

presenting both giftedness and learning challenges. Closing the gap from current research

surrounding twice exceptionality and the present educational practice is paramount to serving

this population effectively. The researchers have recognized the need to identify areas of

strengths and needs for growth within school programs and cultures. Guiding the international

school community forward in effective support of not only twice-exceptional learners, but all neurodiverse learners, benefits everyone as it elevates services for even the most complex of these learners.

Baum and Olenchak (2002) discuss the complexity of diagnosing twice-exceptional learners, resulting in labeling that is inaccurate and leading to confusion and inadequacy of services. Springing forth from the confusion and misdiagnosis, more and more labels are placed upon these unique children, masking and hiding who they are and their true learning needs and abilities. This complexity is further illustrated best through the description of a twice exceptional individual's personal reflection who participated in the Reis et al. (1997) case study, "She often felt as if she were two different people in the same body: one who was competent and bright who was inside, and another who blocked the smart person inside from communicating" (p. 472).

Hence, identifying twice-exceptional students poses no easy task. These students are difficult to spot because they are "academically inconspicuous and do not grab attention with exceptional behaviors" (Baum et al., 2017, p. 47). Their duality of both giftedness and learning difficulties mask each other and frequently result in posing as an "average" student. An interesting issue arises with this predicament: What is the level of impairment needed to consider a learning difficulty to be present within a child? The concept of negative impact occurring because of this difficulty becomes the focus. Subsequently, the question of just how much impact needs to be observed becomes the focal point (Kaufman, 2018). But this impact is probably skewed because of the duality of their giftedness. If a student would benefit from obtaining differentiated instruction in an area of difficulty, even if the negative impact is not observable when compared to age-like peers, does it mean no service should be provided? Should not the focus of interventions and support be guided by the attempt to aid in supporting learners to reach

their full potential rather than mediocrity? Should not these attempts to aid and support learners

be rooted in guiding them towards self-contentment and self-fulfillment rather than external

impositions, expectations or even averages?

On the flip side of this is the identification of their giftedness. Taking Kaufman's

expanded definition and going beyond traditional intelligence to include "capacity, competence,

commitment, or creativity" (Kaufman, 2018, p. 7) reaches a wider set of the learner population

who desperately need this focus as well.

Marland in a federal definition of giftedness said,

Gifted and talented children are those identified by professionally qualified persons who

by virtue of outside abilities are capable of high performance. These are children who

require differentiated educational programs and services beyond those normally provided

by the regular school program in order to realize their contribution to self and society.

(1971, p. 8)

Using the above definition of giftedness, it is clear the matter revolves purely around the need for

differentiation due to the scope of high capabilities or presence of talents in a variety of realms.

"Talent is best thought of as any package of personal characteristics that accelerates the

acquisition of expertise, or enhances performance given a certain amount of expertise...What is

important is the total package, not the precise mix of personal characteristics" (Kaufman, 2013,

p. 2). Are school systems identifying unique sets of personal characteristics, or only tailored to a

predetermined talent or gift? Are classrooms and curriculum open enough to provide experiences

that have the potential to unveil different forms of talent and support twice-exceptionality?

Rationale for Selecting the Topic

Unfortunately, "often a hidden disability is not discovered until college or adulthood...by that time the student may be discouraged about school and learning and have little confidence in his or her abilities" (Baum et al., 2017, p. 47). The impact of late identification is quite heavy as it leaves the student "without a functional lens with which to view their unique cognitive and affective attributes" (Olenchak et. al, 2016, p. 268) and consequently "tend to inaccurately contextualize their struggles and then create affective schemas centered on self-blame, incompetence and failure" (p. 269). Exploring and promoting self-knowledge and understanding for 2e students, will set the tone for the individual's whole learning experience and self-perception. Currently, high ability students with Specific Learning Disabilities (SLD) share common negative self-perceptions (Foley-Nicpon & Assouline, 2020), and a change could be observed if these learners were served from a young age, identifying their strengths and aiding in identifying and compensating for their difficulties. In doing so, their self-perception shifts as well as their ability to self-advocate, which will prove to be a positive lifelong strategy.

As noted, it is difficult to identify twice-exceptional individuals at an early age, and yet it is crucial that this occurs. By providing an environment that elicits the demonstration of talents and gifted behavior from as many students as possible within the whole school setting, a wider net is cast to identify 2e students as it provides a space where students may be seen through diverse lenses allowing for other forms of giftedness, beyond the academic one, to shine through. This allows for a greater occurrence or possibility of identification of those who are masking their giftedness, their learning difficulty, or even both aspects of their duality. The students who have so often gone unnoticed and who miss out on services and support needed, especially at a young age, have a greater opportunity to rise to the surface and be appropriately recognized

(Renzulli & Reis, 2014; Webb et al., 2016). Coupled with improved training for teachers to better identify twice-exceptional students when the behaviors do come to the surface, will result in more appropriate services being applied and utilized. Educating the child and adults in their life about giftedness demystifies issues, leads to an ease of behavior management, and reduces anxiety. Thus, the single most powerful intervention available is education of the child and the adults in the child's life (Webb et al., 2016).

Statement of the Problem

How might we identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity to enhance students' holistic growth as unique individuals in order to become a more inclusive and 2e supportive learning community? The answer is neither simple nor cut and dried. Encouraging inclusion and building a community in which neurodiversity and twice-exceptionality are embraced, where individual talents are valued, may be an uphill battle for some stakeholders. However, an obvious place to start is education followed by experience: providing opportunities for educators to understand neurodiversity through research, discourse, and exploring case studies.

Providing educator support needs to go beyond a few professional development opportunities for teachers which will then be a precursor to implementation in the classroom and in isolation (Baldwin et al., 2015). A support team including the homeroom teacher, colleagues, parents, administration, and specialists should be utilized to create a supportive community that regularly provides input, adjustments, tools, and guidance from within the classroom and beyond. All must be familiar with an individualized student approach that attempts to understand the student comprehensively, to identify the why behind the student's behavior, motivation and achievement in their classrooms in order to provide appropriate support. This means that adults

in the lives of children must "consider ways in which they can ease the stressor or

environmental triggers that tend to amplify the areas of difficulty" (Foley-Nicpon et al. 2011,

p.14). However, it does not stop here. The student's knowledge of themselves, their strengths,

their difficulties, their learning profiles, and their strategies to compensate are also part of this

foundation.

> Students must engage in activities designed to help them understand themselves.
>
> Self-discovery assists them in identifying their specific talents, areas of strength, interests
>
> and passions, learning styles, and emotional needs...this knowledge empowers students to
>
> negotiate assignments, set personal goals, and accept themselves as total persons.
>
> (Nielsen & Higgins, 2005, p.12)

> Grounding learning environments in the understanding of human diversity, all beautifully

falling at different places within this continuum of humanity, all helping each other to soar

through areas of strength and vice versa, creates spaces where students feel safe to be

themselves. Making this experience a part of everyday life, creates a sense of belonging as all

students reveal their own difficulties and struggles, strengths and talents, and uniqueness, and

helps establish the five interweaving factors essential to 2e student growth; a psychologically

safe environment; tolerance for asynchronous behaviors; time; positive relationships; and a

strength-based, talent-focused environment (Baum et al., 2014).

Research Questions

To achieve these outcomes, the specific question is, how might we identify the needs

within the international school community to promote the development of an ethos that

celebrates neurodiversity to enhance students' holistic growth as unique individuals in order to

become a more inclusive and 2e supportive learning community? The problem to be examined is

multifaceted and consequently demands a collection of research questions:

     1. Do international schools provide 2e friendly environments where neurodiversity is

acknowledged, celebrated and supported?

     2. How widely understood are the characteristics of a 2e learner, leading to early

identification?

     3. How widely understood are the components of a 2e friendly environment and the

strategies and principles to help create it?

     4. How widely understood, and accommodated for, is the asynchronous development of

2e and neurodiverse learners?

     Each individual has the right to learn, grow and strive to reach their full potential. If

provided with the optimal circumstances in which to learn, it is not beyond the scope of

realization that amazing contributions and advancements may be made to every facet of society

and the environment. By conducting the proposed research through a needs assessment survey,

the international school community will be provided with the opportunity to recognize what they

already know about the academic and social needs of 2e learners and what practices or supports

they provide, and gain clarity in the areas of need to become a more inclusive and 2e supportive

learning community. More specifically, recognizing perceptions, knowledge, and practice, and

analyzing common needs throughout diverse international schools, will provide future research

discussions to guide schools forward as they navigate support for their 2e populations.

     To conclude with the words of Margaret Mead, cited in Armstrong (2010),

If we are to achieve a richer culture, rich in contrasting values, we must recognize the

whole gamut of human potentialities, and so weave a less arbitrary social fabric, one in

which each diverse human gift will find a fitting place. (p. 1)

Selection of Participants

International schools around the globe form part of recognized associations such as The

Association of International Schools in Africa (AISA) or The Association of American Schools

of Central America, Colombia-Caribbean, and Mexico (TRI) depending on their geographical

locations. The study targets international schools that are part of their regional international

school associations.

For the purpose of this study, convenience sampling, which is a type of non-probability

sampling technique, was used. Three different groups of participants were utilized for this study

in order to recognize perceptions, knowledge, and practice; analyze common needs throughout

diverse international schools; and provided a future research discussion to guide schools forward

as they navigate support for their 2e populations.

Different participants were used during the three phases of this research study. The Phase

One group consisted of four international school leaders who were recruited to take part in an

interview using the Consensual Quality Research (CQR) approach (Hill, 2012). The researchers

recruited these four participants from their contacts in four different international schools from

different regions of the world. The researchers contacted the participants by email, requesting

voluntary participation in the interview process.

The Phase Two group included four experts, two in the field of twice-exceptionality, and

two experts in international education. The researchers recruited the participants from their vast

group of expert contacts in the fields of neurodiversity and international education by email, requesting voluntary participation in the review process.

Phase Three of this study aimed to incorporate 50 participants composed of school leaders such as Directors of Learning, who are responsible for guiding curriculum and learning within their schools, as participants from diverse continents of the globe to participate via the exploratory survey. They were actively recruited through the following process:

1. The researchers sent an email to the Executive Directors of the following regional associations: The Central & Eastern European Schools Association (CEESA), The Educational Collaborative for International Schools (ECIS), The Association of American Schools in South America (AASSA), The American International Schools in the Americas (AMISA), The Association of American Schools of Central America, Colombia - Caribbean and Mexico (Tri), East Asia Regional Council of Schools (EARCOS), The Mediterranean Association of International Schools (MAIS), The International Schools in Africa (AISA), The Near East South Asia Council of Overseas Schools (NESA). The email contained a letter which was forwarded to Directors of Learning in international schools with the information regarding the study, a link to the consent form found in Appendix C , and a link to the needs assessment survey.

2. These Executive Directors forwarded the letter to the Directors of Learning from the schools within their regional associations.

3. The Directors of Learning voluntarily decided to participate in the study by electronically indicating their consent within the survey and completing the needs assessment survey provided to them in a link with the email.

Identifying and including international schools throughout the globe is instrumental in being mindful of cultural and linguistic differences, and representative of varying ideologies, backgrounds, and potential biases and stigmas present within the international populations, expanding impact and transferability.

Significance of the Research

Importance lies within the identification of key themes and elements that surround the twice-exceptional literature and its complexity. The plethora of information in the overarching area of twice-exceptionality points to a recent shift to recognize and understand this unique population to provide empirical evidence to support them. However, the need for further research is evident to provide a greater body of work pertaining to the individual aspects that surround distinct components and problems of practice of such a complex population and field. Specifically, the necessity to develop an exploratory needs assessment survey to identify key elements and areas for growth in supporting twice exceptional learners within the international school community is apparent.

The National Twice-Exceptional Community of Practice indicated that working with twice-exceptional students requires specialized academic training as well as ongoing professional development (Baldwin et al., 2015, as cited in Lee, 2018). The review of the literature by Gierczyk and Hornby (2021) revealed that the success of twice- exceptional learners depends upon both teachers' competency, positive attitudes, and appropriate preparation, as well as the school community and culture. Thus, it is imperative that administrators and educators are able to identify gaps both in knowledge and skills as well as within the school's culture to provide appropriate and effective strategies for growth. Successfully working with and supporting twice-exceptional and neurodiverse learners, requires educators to attain "fundamental

knowledge and skills such as students' characteristics, approaches to structural flexibility, and collaboration among school personnel and with parents" (Rubenstein et al., 2015 as cited in Lee, 2018, p. 67). Research into the experiences of 2e learners and the observations of educators and family members indicate that 2e learners require a curriculum that focuses on the use and development of higher-level thinking skills, strategies for compensation, strength-based/talent focused environments and be provided with the opportunity to own their learning. Thus, it is recommended that teacher education should focus upon developing knowledge and skills in the aforementioned areas (Lee, 2018).

The demand for an assessment that pinpoints where the international school community lies in respect to their knowledge and implementation of key elements and themes surrounding twice-exceptionality and neurodiversity, allowing them to build upon what they already know and do while addressing areas of opportunities or needs to become a more supportive 2e community, is paramount. Although the researchers recognize each distinct school community breathes a life of its own and exists within its own personal ethos and culture requiring a break away from the one size fits all model, recognizing perceptions, knowledge, and common practices, and analyzing recurring needs throughout diverse international schools helps pave a path to assess the current standing and ability to support neurodiversity, specifically twice-exceptionality, in an effort to improve educational practices.

Purpose of the Study

The aim of this dissertation was to identify the professional learning needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. Through the recognition of perceptions, knowledge, practice, and analysis of common needs discovered via

the exploratory quantitative assessment survey of diverse international schools, the researchers aspire to provide a launching point for schools to discuss the improvement of their current practices and for future research discussion to guide schools forward as they navigate support for their 2e populations. The benefits of the results of a survey that pinpoints where the international school community lies in respect to their knowledge and implementation of key elements and themes surrounding twice-exceptionality and neurodiversity, are multifaceted and observable over time. The research will allow the international education community to build upon what they already know and do while addressing areas of opportunities or professional learning needs to become a more supportive 2e community. The benefits of acquiring this knowledge will help to structure changes to permeate the school ideology, its structures, programs, strategies, and ultimately its learners and other stakeholders to benefit the 2e and neurodiverse learner population. The results can lead to learners receiving more effective academic and social/emotional support as they grow, flourish and reach their goals. The hope is that the research brings the international education community forward in the attempt to provide every learner with an education and an environment that ensures the possibility of reaching self-actualization and self-fulfillment.

Identifying and targeting international schools that are members of regional associations from diverse continents of the globe is instrumental for the transferability and validity of this research. Addressing the cultural and linguistic differences, and being representative of varying ideologies, backgrounds, and potential biases and stigmas present within the international populations is paramount. This in turn expands the study's impact and transferability and provides ample benefits for the international school community to move forward within this field.

Definition of Terms

For the purpose of this dissertation, these operational definitions were used:

Cognitive Diversity: This term refers to "cognitive diversity has been defined as differences in perspective or information processing styles. It is not predicted by factors such as gender, ethnicity, or age" (Lewis & Reynolds, 2017, para. 5).

Gifted: This term refers to "students with gifts and talents perform - or have the capability to perform - at higher levels compared to others of the same age, experience, and environment in one or more domains. They require modification(s) to their educational experience(s) to learn and realize their potential. Student with gifts and talents:

   • Come from all racial, ethnic, and cultural populations, as well as all economic strata.

   • Require sufficient access to appropriate learning opportunities to realize their potential.

   • Can have learning and processing disorders that require specialized intervention and accommodation.

   • Need support and guidance to develop socially and emotionally as well as in their areas of talent.

   • Require varied services based on their changing needs" (National Association for Gifted Children, 2019, para. 1).

Learning Disabilities: This term refers to "any of various conditions with a neurological basis that are marked by substantial deficits in acquiring certain scholastic or academic skills, particularly those associated with written or expressive language. Learning disabilities include learning problems that result from perceptual disabilities, brain injury, and minimal brain dysfunction but exclude those that result from visual impairment or hearing loss; intellectual

disability; emotional disturbance; or environmental, cultural, or economic factors" (American

Psychological Association, 2020, para. 1).

Neurodiversity: This term refers to "the whole of human mental or psychological neurological

structures or behaviors, seen as not necessarily problematic, but as alternate, acceptable forms of

human biology" (Barrett, 2004, para. 1).

Strength-based: This term refers to "curricular and instructional approaches that are

differentiated to align with students' cognitive styles, learning preferences, and profiles of

intelligences" (Baum et al., 2014, p. 312).

Talent Development: This term refers to "encouragement and support of identified talents and

abilities that are nurtured in their own right—neither as an opening for remediation nor as a

reward or motivator for achievement" (Baum et al., 2014, p. 312).

Twice Exceptional (2e): This term refers to "a term used to describe a student who is both gifted

and disabled. These students may also be referred to as having dual exceptionalities or as being

gifted with learning disabilities (GT/LD). This also applies to students who are gifted with

ADHD or gifted with autism" (National Association for Gifted Children, nd.).

Talent-focused: This term refers to a focus that "involves ongoing identification and recognition

of a student's advanced abilities as well as budding interests, along with explicit options for

exploring and expressing those abilities and interests within and outside the curriculum.

Talent-focus is used as an overarching term that includes 'talent development'" (Baum et al.,

2014, p. 312).

Summary

Educational institutions should be places where each student's diversity is acknowledged,

identified, and addressed, where all learners feel safe and secure, in an environment for all

students to develop and thrive. As international schools present a unique set of characteristics, ensuring these environments, with appropriate protocols and systems in place, where neurodiverse and twice-exceptional learners can flourish, has proven to be a challenge around the globe.

Researching where the international school community lies in respect to their knowledge and implementation of key elements and themes surrounding twice-exceptionality and neurodiversity, provided an opportunity to discuss and explore insights in order to become a more supportive 2e international school community. Through this dissertation, the researchers sought to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity to enhance students' holistic growth as unique individuals in order to become a more inclusive and 2e supportive learning community.

Chapter 2: Literature Review

The concepts of neurodiversity and twice-exceptionality are complex and encompass a wide range of variations and characteristics. Therefore, there was an obligation to ensure a deep knowledge and understanding of these two fields before attempting to conduct research within the international school community. The researchers conducted a literature review pertaining to the field of twice-exceptionality and the interrelated domains that impact this unique population. The scope of the literature review consisted of 60 research-based publications from which key themes and subthemes emerged. These publications represent the most current and pioneering research in the field, and through a deep analysis and synthesis, yielded key findings that guided this dissertation's focus and research questions.

Theoretical Framework

The history of international schools revolves arounds the growth of global migration related to diplomatic families and other expatriate families seeking education for children that reflected the education of their home countries (Hayden & Thompson, 2008). The growth of international schools around the world continues and their enrollment continues to grow. Such growth is connected to the increasing dissatisfaction of local or national education, the aim to provide learners with the preparation to successfully assimilate into a globalized world, and to ensure learners experience a global outlook that is not directly tied to a particular system of education nor culture (Hayden & Thompson, 2008).

International education is a term that is widely used within the education world and literature, however, it lacks a clear and agreed definition (Hayden & Thompson, 1995). The definition of international schools follows with the same fate. Hayden and Thompson (2000)

explain that ''at least one thousand international schools exist differing in philosophy either: utilitarian, pragmatic or ideological'' (p. 2). International education, conceptually, is the object of debate clouded by the variability within the terminology. Shaklee (2007) states that the definition of international within the term international school "escapes a clear and well-defined set of principles or characteristics" (p. 266). Finally, Hayden and Thompson (2000) present a basic definition of international schools as having a presence of diversity, particularly in the realms of culture and language.

International schools may be characterized, as described by Shaklee (2007), as providing learners with opportunities to learn about diversity through a population inclusive of a wide range of cultures, languages, nationalities, modes of thinking and methods of learning. Hayden and Thompson (1995) explain that there is a perspective that international education is considered to be an instrument developed to support learners in the preparation of coping with life within an increasingly interconnected world through travel, international marketplaces, development of communication networks, and environmental issues. Thus, these young learners are in touch with a world far larger than their own through the development of an international mindset.

International schools are widely considered to be hidden or unknown to the majority of people and therefore, little research has been conducted within their framework. The truth of the matter is that these schools often educate the children of elite families within the counties they are located in, therefore, they can no longer be approached with indifference (Hayden & Thompson, 2008).

Even though international schools have been identified as places of wide diversity of language, culture, thinking, and teaching and learning practices, it has become apparent that

there is a gap in the services and provisions provided for learners with special needs. Bradley

(2000) identified that learners within international schools are not provided with opportunities to

explore the diversity of ability. The lack of a diversity of provisions, services, and support may

be linked to negative associations towards individuals who are neurodiverse or otherwise

disabled by the host country, perhaps such learners fall through the cracks, economic reasons, or

lack of expertise (Bradley, 2000). Thus, it is imperative that this research shines a bright light on

the needs of international schools in their growth and development as inclusive educational

institutions that guide the growth of neurodiverse and 2e learners with a focus upon ability and at

the same time supporting areas of need.

In 1993, the U.S. Department of Education produced a report entitled, *National

Excellence: A Case for Developing America's Talent*. The report produced several

recommendations including, "Content standards, curriculum, and assessment practices must

challenge all students, including those who are gifted and talented" (Rimm, et al., 2018, p.8).

This statement cannot be denied, however, it should be argued that this statement should be

broadened to include all learners, including learners who are cognitively diverse and

twice-exceptional.

The report also stated that "Teachers must receive better training in how to teach

high-level curricula. They need to provide instruction that sufficiently challenges all students.

This will benefit children at every academic level" (Rimm, et al., 2018, p.8). Ongoing education

and training for educators provide assurance that research-based best practices are being

transferred into classrooms to promote optimal and exciting teaching and learning opportunities

for all learners, including those that are cognitively diverse and twice- exceptional.

Twice-exceptional learners are often identified as grappling with asynchronous development,

thus requiring learning experiences that may be beyond their grade level, and in other instances,

they are in need of learning opportunities to develop a range of skills that are underdeveloped in

relation to the expectations of their age and grade (Baum et al., 2017, p.1).

Importance lies within the identification of key themes that surround the

twice-exceptional literature and its complexity. The plethora of information in the overarching

area of twice-exceptionality points to a recent shift to recognize and understand this unique

population to provide empirical evidence to support them. However, the need for further research

is evident to provide a greater body of work pertaining to the individual aspects that surround

distinct components and problems of practice of such a complex population and field. Moving

forward, there will be a discussion of the themes and subthemes identified from our review of

literature that will form the interfused backbone for this dissertation. The literature review was

developed around the methods of Machi and McEvoy (2016). The problem was identified

followed by the collection and organization of the information found within the search. Based on

the literature review conducted, four major themes emerged: (1) unveiling the wonders of the 2e

mind; (2) establishing safe learning environments; (3) embracing: it takes a village; and (4)

transformational leadership.

Table 1

Themes and Sub-Themes Extracted from the Literature

Theme	Sub-Theme
Unveiling the wonders of the 2e mind	Neurodiversity Common definition Unique profile and nature Fix-it model switch Stigmas and bias Perceptions

Establishing safe learning environments	Social and emotional support
	Strength-based strategies
	Pathways to learning
	Dual differentiation
	Growth-mindset
Embracing: it takes a village	Collaboration/team approach
	Parents (Home-school connections)
	Counselor's role/voice
	External support services
Transformational Leadership	Professional learning
	Leadership (qualities/characteristics)

Unveiling the Wonders of the 2e Mind

Neurodiversity

It is a matter of equity. Human diversity is vast; humanity exists in a long continuum of diversity in many areas, and cognitive diversity is no exception. Acknowledging the richness and strengths that exist within diversity lays a foundation for serving these students holistically and aids in their growth and journey towards self-actualization (Kaufman, 2013). To pretend a "one size fits all" education program will yield best results for all students, and subsequently to society as a whole in the future, deviates from research data. Within this cognitive continuum, the farther away students fall from the standard deviation, the more complex it is to provide adequate support as they navigate their educational journeys (Legget et al., 2010).

It is imperative to understand, as John Dewey pointed out, "the child is the starting point, the center, and the end. His development, his growth, is the ideal. Not knowledge, but self-realization is the goal" (Kaufman, 2018, p. 88). To reach this goal, just as illustrated above, each student will require different support, accommodations and programs that enable growth. An environment where students do not only feel safe but respected must be fostered. One in which one's uniqueness may be viewed as a strength so that "students learn that being different is

okay, then the stigma drops, and the students who are 2e are then accepted into the general

population and even looked to for assistance" (Kaufman, 2018, p. 142). This supportive

environment begins by understanding the unique individual student's profile, should be

supported by a strength-based and talent development program, and is nurtured through a team

approach where we look "beyond the classroom teachers and enlist the support of others-

parents, counselors, psychologists, educational therapist, and community agency and resources"

(Baum et al., 2017, p. 166).

    To build a culture that celebrates and embraces the neurodiverse, there is a need to

provide resources for proper identification, support, and understanding of the neurodiverse and

2e population. A broad approach into the complexity that underlies the variability within atypical

brain development in relation to learning due to differences in brain structure and function is key

to shift towards accurate perceptions and a clear vision about neurodiversity (Gilger & Hynd,

2008). Grounded on the premises that the brain is the basis of behavior, variances within these

behaviors stem from differences within the function and actual structure of the brain, and

learning differences are a result of both genetic and environmental effects. As a society, we can

bring humanity forward by providing individualized, targeted approaches to support 2e

individuals. To truly appreciate the wonder of the 2e brain, acknowledging that it is an

"integrated and multifaceted organ that is more than a simple reflection of its separate parts or

domain-specific symptoms" paves the way for each unique individual to self-actualize and thus

become valuable contributing members of the community (Gilger & Hynd, 2008).

Common Definition of Twice-Exceptionality

    Developing a common definition and understanding of terminology is essential for the

field and important for discussion and research to pave the way for new understandings. To

begin, the term twice-exceptional, in general, refers to individuals who are identified as gifted

and who also carry a diagnosis that falls within the realm of special needs as stated by the

Individuals with Disabilities Education Act (IDEA) (Reis, et al., 2014, p. 222). The term

twice-exceptional is composed of both aspects of gifted and learning disabled. Thus, it is

required to explore the currently accepted definitions of each. The U.S Department of Education

provides a separate definition of learning disabled and gifted; however, they fail to combine the

two definitions or identify how they may interact with each other in terms of

twice-exceptionality (Foley-Nicpon, et al., 2010, p. 4).

Within the No Child Left Behind Act of 2002 (p. 1529), the federal government defines

gifted learners as "those who give evidence of high achievement capability in areas such as

intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need

services or activities not ordinarily provided by the school in order to fully develop those

capabilities" (Foley-Nicpon, et al., 2010, p. 4). IDEA (2004, p. 13) provides the following

definition of learning disability: " a disorder in one or more of the basic psychological processes

involved in understanding or in using language, spoken or written, which may manifest itself in

an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations"

(Foley-Nicpon, et al., 2010, p. 4).

The federal definition of gifted does not exclude learning disabled students as it fails to

state the need for students to be exceptional in all areas, does not define the parameters for the

non-gifted areas, and defines capability as a metric instead of performance. Therein lies the gap:

In what ways are capabilities measured? Thus, the difficulty for 2e students to fall within this

scope as their disability may mask their potential (Brody & Mills, 1997, p. 284). Beyond

masking, the gifted characteristics of 2e learners have been misdiagnosed as psychiatric

disorders such as ADHD (Pfieffer, 2009, p. 788). In contrast, the definition of a learning

disability does not exclude 2e in the same or similar manner, as it acknowledges that it may lie in

only one area or process. However, 2e students' giftedness may also mask their disability.

Hence, although the US Department of Education does provide a definition for both

gifted and learning disabled, it fails to do so in a manner in which they are combined nor

addresses how these dual traits may appear within one individual (Foley-Nicpon, et al., 2010, p.

4). For these reasons, Baum and Owen (1988) state the lack of overlap within the definitions,

leaving educators with a lack of clear vision as to what these gifted and learning disabled

individuals look like (Foley-Nicpon, et al., 2010, p. 4).

Due to this need for a combined definition, the National Twice-Exceptional Community

of Practice formed in 2014 and developed the following definition:

Twice-exceptional individuals evidence exceptional ability and disability, which

results in a unique set of circumstances. Their exceptional ability may dominate,

hiding their disability; their disability may dominate, hiding their exceptional

ability; each may mask the other so that neither is recognized or addressed.

2E students, who may perform below, at, or above grade level, require the

following:

- Specialized methods of identification that consider the possible

interaction of the exceptionalities;

- Enriched/advanced educational opportunities that develop the

child's interests, gifts, and talents while also meeting the child's

learning needs; and

- Simultaneous supports that ensure the child's academic success and

  social-emotional well-being, such as accommodations, therapeutic

  interventions, and specialized instruction, and working

  successfully with this unique population requires specialized

  academic training and ongoing professional development.

  (Baldwin et al., 2015, pp. 212-213)

Although this definition improves the intertwining of the aspects of giftedness and

learning disability, there remains the challenge of permeating these concepts into the educational

and psychological practices. For example, school practice does not reflect the federal definition

of giftedness, which includes a multidimensional view and encompasses the leadership, creative,

and artistic realms beyond the intellectual and academic (Foley-Nicpon, et al., 2010; Pfieffer,

2009). Thus, when put in practice, schools, educators, and psychologists often continue to use

the traditional metric of identifying giftedness by a high IQ score. Action is required to embrace

the multidimensional definition and ensure that it is applied adequately.

Unique Profiles and Characteristics

The definitions of gifted, learning disabled, and twice-exceptional will continue to be

debated and changed, however, twice-exceptional individuals remain. Thus, it is necessary to

create a more robust construct of a twice-exceptional learner with clear, identifiable

characteristics to facilitate educators', families', and other professionals' ability to identify

twice-exceptionality. The lack of adequate knowledge and insight into the observable

characteristics of 2e learners, may lead to a misdiagnosis, misunderstanding, or misinterpretation

of behaviors due to overlap between and among similar syndromes (Reis et al., 2014; Webb et

al., 2016). Table 2 provides a description of possible behaviors and characteristics of

twice-exceptional students within distinct skill sets in comparison to those of gifted students

(Nielson et al., 2000, as cited in Baldwin et al., 2015).

Table 2

Comparison of Gifted and 2e Behaviors

Indicator	Recurrent behaviors and characteristics of gifted students	Possible behaviors and characteristics of twice exceptional students
Learning	Possesses ability to learn basic skills quickly and easily and retain information with less repetition	Often struggles to learn basic skills; may demonstrate need for strategies in order to acquire basic skills and information
Verbal skills	Exhibits high verbal ability	May demonstrate high verbal ability but may also show extreme difficulty in written language area; may use language in inappropriate ways and at inappropriate times
Reading skills	Acquires reading skills early	Reading problems can be evident early; may demonstrate need for strategies in phonics, phonemic awareness, and fluency; may mask reading deficits through compensation until shifting from "learning to read" to "reading to learn"
Organizational skills	Organizational skills can vary; some gifted students can be very organized whereas others struggle	Usually struggles with organization of things, ideas, and time
Observational skills	Has keen powers of observation	Has strong observation skills but may demonstrate deficits in memory
Critical thinking/problem-solving skills	Adept at critical thinking, problem solving, and decision-making skills	May excel in solving "real-world" problems; can demonstrate outstanding critical thinking and decision-making skills; often independently develops compensatory skills
Attention	Has long attention span; may demonstrate persistent, intense concentration	Attention is frequently affected; may be able to concentrate for long periods of time in areas of interest

Curiosity	Demonstrates questioning attitude	May demonstrate a strong questioning attitude, may appear disrespectful when questioning information and facts presented by the teacher
Creativity	Generates questioning attitude	Imagination may be unusual; may frequently generate original and at times rather "bizarre" ideas; is extremely divergent in thought; may appear to daydream when generating idea
Risk taking	Takes risks	Is often unwilling to take risks with regard to academics or areas of deficit; takes risks in non-school areas without consideration of consequences
Sense of humor	Possesses unusual, often highly developed sense of humor	Humors may be used to divert attention from school failure; may use humor to make fun of peers or to avoid trouble
Maturity	May mature at different rates than age peers	Sometimes appears immature by using anger, crying, and withdrawal to express feeling and to deal with difficulties
Independence	Has a strong sense of independence and self-efficacy	Requires frequent teacher support and feedback in deficit areas; is highly independent in other areas; often appears to be extremely stubborn and inflexible
Social skills	May not be accepted by other children and may feel isolated	May be perceived as a loner; sometimes has difficulty being accepted by peers due to poor social skills
Leadership	Exhibits leadership ability	May be a leader among the more nontraditional students; can demonstrate strong "streetwise" behavior; the disability may interfere with ability to exercise leadership skills
Broad interests	Is interested in a wide range of topics	Is interested in many topics, but often, learning problems impede pursuit of them
Focused interests	Shows very focused interest, that is, a passion about a certain topic to the exclusion of others	Often demonstrates a very focused interest, that is, a passion about a certain topic to the exclusion of others-often not school-related subjects

Note. This table is adapted from Baldwin, L., Omdal, S.N., & Pereles, D. (2015). Beyond stereotypes: Understanding, recognizing, and working with twice-exceptional learners. *Teaching Exceptional Learners, 47*(4), 216-225.

As the authors rightfully labeled this table with the word "possible," no 2e student will demonstrate all the characteristics, the same traits as another 2e individual, or to the same degree. Each twice exceptional learner is unique and possesses a one-of-a-kind profile. Although tempted to create a universal identification process and format, the unique nature of each student must be acknowledged as it reflects distinct observable behaviors and characteristics (Baldwin, Omdal, & Pereles, 2015). The variability within the 2e population deflates the notion of a universal tool for identification. It requires mindfulness of the reality of the comorbidity effect on the 2e population. With two or more latent diagnoses, the nature of the twice-exceptional is comorbid, thus creating a unique profile as these diagnoses interact with each other. Therefore, they present neither the characteristics of one syndrome or the other, but rather a unique set of blended traits (Reis et al., 2014).

Perceptions and Stereotypes

This duality also brings to surface implications beyond the academic realm (Barber, & Mueller, 2011) within both personal perceptions and perceptions of others. The lack of identification and connection with others, results in stigmas, stereotypes, and possibly bullying (Ronksley-Pavia et al., 2018). Twice-exceptional students "...are often teased by their classmates, misunderstood by their teachers, disqualified from gifted programs due to their deficiencies, and unserved by special education because of their strengths" (Silverman, 2003, p. 4). Twice-exceptional learners require themselves and others to break away from the common stigmas or biases of disability and limitations, and be perceived as a sum of their parts, composed

of both giftedness and disability, "viewed as being 'at promise' rather than being 'at risk'"

(Nielsen, 2002, p. 93).

Fix-it Model Switch

Traditionally, education and society have made remediation of deficits a priority for

twice-exceptional individuals, however with greater understanding, there has begun a shift away

from a deficit or 'fix-it' model towards a strength-based approach (Baum et al., 2017; Reis et al.,

2014; Reis & Renzulli, 2020). This shift from a deficit lens, which focuses on the negative,

towards a strength-based lens, which moves the attention towards the positive, results in a more

constructive self-perception, and perceived competence, possibly resulting in greater intrinsic

motivation (Hiemstra & Yperen, 2015).

A strength-based approach requires a fine balance between attending to and supporting

the areas of need, the deficits, and the growth of the individual's strengths (Josephson et al.,

2018). By utilizing their strengths to leverage maturation in areas of need, 2e learners are able to

develop skills beyond their current capabilities in all areas including traditionally academic,

executive functioning, social and emotional, self regulation, as well as growth in the areas of

interests and talents (Laija-Rodriguez et al., 2013). Talent development may occur on a multitude

of levels and within various environments and Ambrose and Sternberg (2016) state "...a talent

development approach to education is scientifically more compelling, socially more equitable,

and educationally more productive" (p. 45). The key is to continually ensure the identified talents

are of interest. If there is a lack of interest or passion within a talent, it should be questioned

whether it is beneficial to pursue development in that area, regardless of the level of giftedness

within such talent. Talents, deficits, and interests fluctuate and change overtime, therefore,

on-going investigations and awareness of the learner's progress is key to an effective

strength-based teaching and learning plan.

Stigmas and Bias

Cultural biases towards LD and 2e also come into play in the lack of identification and

services provided for 2e learners as these unilateral stigmas continue to be active within all

stakeholders. Educators' own stigmas about 2e may become a roadblock for referral and

screening. Parents' sensitivity to other people's perceptions or stigmas, may also become an

obstacle to their acceptance of their children's need for special education, permission for their

children to receive services, and participation in collaboration with educators. Parents concerned

with possible stigmatization may resist identifying their children as twice exceptional (Kayama

& Haight, 2014).

Establishing Safe Learning Environments

Gifted students with exceptionalities require a safe environment in which to grow and

thrive. Feeling valued, heard, free to express and work through their frustrations, and celebrated

for their uniqueness are all key elements of supportive and safe environments (Trail, 2006).

Through their study, Baum et al. (2014) identified five interweaving factors essential to student

growth: a psychologically safe environment; tolerance for asynchronous behaviors; time;

positive relationships; a strength-based; and talent-focused environment. When encompassed

within such a safe and nurturing environment, twice-exceptional learners are more willing to take

risks to tackle their challenges (Baldwin et al., 2015).

Social and Emotional Support

Creating a psychologically safe environment entails providing social and emotional

support where students may find acceptance, both from self and from others (Baum et al., 2014).

A low academic self-concept is often seen in twice-exceptional students as they grapple with the

dichotomy of their gifted abilities versus their learning difficulties, causing rising anxiety and

anger. Combining this reality with their overexcitabilities and heightened sense of feeling,

manifests in unrealistic expectations for themselves, attuned with their sense of unhealthy

perfectionism, and presenting greater negative characteristics than positive ones within the

social-emotional realm (Reis & Colbert, 2004). A compilation of these characteristics, gathered

from current literature in the field, are delineated in Table 3.

Table 3

Social and Emotional Characteristics of 2e Learners

Social and Emotional Characteristics
May exhibit feelings of inferiority
May show an inability to persevere in the accomplishment of goals
May demonstrate a general lack of self-confidence
May exhibit confusion as they struggle to understand why they can know an answer but are not able to say it or write it correctly, which may create social and emotional difficulties for students
Abilities of academically talented students often mask their disabilities
Disabilities may disguise their giftedness
May demonstrate a strong, personal need for excellence in performance and in outcomes that nears and often embodies unhealthy perfectionism
May exhibit an intensity of emotions
May have unrealistic expectations of self
May have a tendency to experience intense frustration with difficult tasks that may produce a general lack of motivation

May experience feelings of learned helplessness

May exhibit low self-esteem

May exhibit disruptive or withdrawn behavior

Note. Adapted from Reis, S.M. & Colbert, R. (2004). Counseling needs of academically talented students with learning disabilities. *Professional School Counseling*, *8*(2), 156-167.

Hence, it is crucial for 2e learners to reside in an environment where they feel supported and accepted (Baldwin et al., 2015) to ensure that positive characteristics develop and help leverage negative traits.

Coleman (2001) concurred with fellow researchers, reporting that twice-exceptional learners possess a pressure to perform, due to their label of giftedness, which results in frustration when their learning disability prevents them from being successful. These experiences can place strain on social relationships, both within the school environment and within the home, especially when the 2e learner feels that others have high expectations of them (Barber & Muller 2011). Research has shown students with LD demonstrate social skills deficits. A study by Kavale and Forness (1996) "...reported that 7 out of 10 students with LD self-report low social skills" (Barber & Mueller, 2011, p. 110). Gifted students could also manifest social struggles (Pfieffer, 2009), therefore those identified as twice-exceptional could be considered to possess a dual stigma. Juggling the high expectations to perform from their giftedness with the inability to live up to these expectations from their LD, students might perceive themselves as out of sync with others and sense they do not fit in, confronting a combination of social pressures (Barber & Mueller, 2011). Studies have found a possible correlation between bullying and differentness and lack of acceptance (Ronksley-Pavia et al., 2018). As identified from the Ronksley-Pavia et al.

(2019) study, bullying experiences were rooted in the lack of comprehensive understanding of who twice-exceptional learners are from those within their environment.

Thus, multiple stakeholders are involved in providing a safe environment and supporting the social-emotional needs of 2e learners, all of which play an active role in their life and development. Educators, parents, peers, counselors, psychologists, family members, and mentors, are all influential in supporting the social-emotional needs of these students, affecting their academic motivation and engagement, while also aiding in establishing effective learning habits and conquering their learning difficulties (Wang & Neihart, 2015). Support from all these external contributors is influential to their overall well-being, social adjustment, and academic performance (Barber & Muller 2011), yet peer support was identified as the most influential within the Wang and Neihart (2015) study. Trial's study (2008) validates peer's influence as it disclosed students' need for positive relationships with peers, especially with those of similar abilities (Barber & Muller 2011). For this reason, awareness, understanding, and celebration of twice-exceptionality by all stakeholders is crucial in establishing a safe environment.

Providing environments that take these unique profiles into account is foundational for the development of positive self-perception (Gierczyk & Hornby, 2021). Shifting learner's self-impressions from something being inherently wrong with themselves and their learning ability due to repeated negative experiences, towards an understanding of their possible success is crucial to their successful learning journeys. When given a wider range of learning methods that provide the right fit towards their individual learning success, learners are given the opportunity to view themselves as capable (Winebrenner, 2003). Combining learning strategies from both special and gifted education provides learners with opportunities to develop strengths while supporting and growing their areas of weakness (Gierczyk & Hornby, 2021). It was

reported that the primary focus must be upon their ability to develop their strengths while

utilizing their skills (Gierczyk & Hornby, 2021).

Strength-Based Strategies

A strength-based approach presupposes that each learner has the innate aptitudes that

may propel them forward toward success in multiple areas. This approach is identified by

focusing upon what is viewed as right within the individual (Buckingham, 2007; Saleebey,

2001). Focusing upon and utilizing one's strengths equips learners of all ages to blossom rather

than maintaining the status quo (Liesveld & Miller, 2005), making the assumption that a

strength-based spotlight upon skills and abilities results in increased self-perception and

confidence, resulting in greater gains which would probably not be as sizable in comparison to a

deficit focus (Clifton & Harter, 2003; Clifton & Nelson, 1992).

Lopez and Lewis (2009) identified five overarching principles of strength-based teaching

including, identification of individual's strengths, personalized learning approaches, networking,

developing trusting relationships with others via social networking, developing and fostering

positive behaviors, and integrating new and novel experiences that act as catalysts for their

strengths. To successfully provide personalized learning approaches that are grounded on

learners' strengths, educators need to apply accommodations such as audio books, extended time

frames, video resources, visual resources, doodling, breaks, allow for movement, scaffolding,

planners, sensory accommodations, safe spaces, private methods of communication with teacher,

alternatives to written work, mindfulness strategies, and so on.

Pathways to Learning

In a successful 2e classroom, differentiated teaching is grounded on the realization that an individualized learning approach is needed not as a method to fix or remediate, but rather, as a means of celebrating and supporting these unique minds. There is no one pathway that supports learners in their quest to conquer standards and the curriculum.

While planning and teaching compensation strategies, educators must acknowledge the need for teaching the same concepts in many different ways: If students are not learning the way we teach them, teach them the way they learn. When we keep trying to teach something to a child in a way in which he or she has repeatedly failed, discouragement and self-blame quickly become a self-fulling prophecy. If learners assume that their failures to learn are caused by stupidity and laziness, their primary purpose in the classroom is to hide their ineptness from peers and teachers. Clowning and other misbehaviors, they believe, can obfuscate their perceived lack of ability. When they are in the classes of teachers who can 'teach them the way they learn,' they can begin to gather evidence that learning success is probably when they can use methods that capitalize on their strengths and compensate for their weaknesses. (Winebrenner, 2003, p. 132)

Incorporating this view into assessment practices, individualized scaffolding, and overall teaching practices within the classroom, makes way for a conducive environment for gifted students with exceptionalities to thrive. A clear focus on best education practices, interventions, and academic strategies is pivotal to providing such an environment (Amran & Majid, 2019). Findings indicated applying strategies that highlight one-to-one attention, shorter assignments, scaffolded and clear directions, and targeted feedback provided greater ease of learning (Lee & Olenchak, 2014; Winebrenner, 2003). Interventions that promote academic acceleration to give

access to gifted curriculum to 2e learners, as suggested by Nielsen (2002) is highly

recommended to provide challenging topics, set realistic expectations, and give opportunities to

express creativity (Lee & Olenchak, 2014). Teaching practices that enhance organizational

strategies, interactive learning, interaction with like-minded peers, and purposeful grouping

based on similar interests and strengths may lead to "increased self-confidence and...significantly

higher academic achievement" (Amran & Majid, 2019, p. 971).

Dual Differentiation

Utilization of instructional strategies that provide learners with choices and flexibility in

their learning, their assessments, and their time frames are paramount in constructing an

environment where 2e learners may thrive (Willard-Holt et al., 2013). Time is relative to each

individual and highly impacts the learning process of learners. This valuable commodity can

provide students with the opportunity to develop creativity, thinking skills, and opportunities for

deeper connections to the curriculum and concepts.

Acknowledging, identifying, and addressing each individual's diversity and uniqueness

by interweaving their strengths, their challenges and their drive through dual differentiation is

key to propel students' learning and growth forward. Growing strengths while supporting

learning difficulties, results in more powerful learning experiences and greater student

achievement (Baum et al., 2017).

Growth-Mindset

Dweck (2006, as cited in Pfeiffer, 2015) reported twice exceptional students as prone to

adopting fixed mindsets which in turn attribute to a lower self-confidence and persistence when

grappling with challenging academic tasks. Gifted students are constantly reminded they are

smart, creating a pitfall for them when they face struggles and adversities at some particular

juncture. Supporting students' shift from making fixed mindset comments such as, "I have all

these ideas. There's this novel I've wanted to write, since I was a little girl, and it's in me. I just

can't get it out because I'm not a good writer," to statements that show confidence in the growth

process is fundamental to their future success (Anonymous, personal communication, May 15,

2021). Explicit growth mindset teaching and modeling is at the center of the teaching practices of

successful educators who serve gifted students with exceptionalities (Prior, 2013). Consistently

providing feedback and modeling to encourage this shift is essential to transitioning students out

of perfectionism and into the realization that learning occurs through mistakes.

Embracing: It Takes a Village

The development of educationally-based intervention plans for 2e learners benefits from

a team approach (Coleman & Gallagher, 2015). The need for more than just the special education

teacher's involvement in all aspects of the 2e learner's journey- identification, program

development, supportive environments, and accommodations- is more than evident. There is no

clear cut, single profile and complete support answer for these students. Their academic,

emotional, intellectual, social, and behavioral profiles are all unique and require a close look at

all its components considering all perspectives (Foley Nicpon et al., 2011).

Collaboration and a Team Approach

Understanding that support needs to go beyond the academic scope, ultimately preparing

learners to work in society, have social lives, work in a team, and to have a productive life in

which they find joy, confronts us with the realization that it takes a village, or an entire

community of professionals and family members to provide the necessary support for

twice-exceptional students. Taking a team approach by intertwining the expertise, experience, and perspectives of teacher colleagues, counselors, administrators, external clinicians, and parents is integral to providing an individualized, targeted support system that properly identifies the student's profile by addressing both their strengths and their areas of need. The importance of a diverse team interacting not only initially, but rather collaborating and coordinating direction of support continually in the ever changing needs of the learner as they grow and travel through their educational journeys, should be recognized and ensured throughout (Coleman & Gallagher, 2015).

Parents and the Home-School Connection

Embracing parental involvement within this team approach is key to the success of this process. Their observations and input reveal yet another layer of the students' lives, complexities, and realities as they personally experience their growth, struggles, and achievements. However, their involvement is not always positive. They often bring their own expectations and pressures to the students' lives, often creating an expectation to perform.

Parental support of 2e learners is multifaceted, combining a variety of strategies providing effective empowerment by developing a safe and nurturing home environment that focuses on growing and developing interests and strengths (Trail, 2006). Reis and Renzulli (2020) went further to conclude that parents of 2e individuals require a combination of strategies including social and emotional, compensatory, and academic supports. Importantly, these strategies are most successful when integrated with interests, strengths, and talents, as emphasized by Reis and Renzulli (2020), "With the right steps, advocacy, and plan, parents can increase the chances for their children's successful academic and social development and an academically positive and interest-based future" (p. 52).

Transformational Leadership

Professional Development

  A cornerstone of successful and supportive educational journeys for twice-exceptional learners is teacher professional development. The education of teachers and specialists, historically, has not provided enough content revolving around the education of those who are twice-exceptional (Lee, 2018). Bianco and Leech noted that foundational knowledge of inclusivity and improved education of twice-exceptional learners is provided by teacher training resulting in learners gaining social and academic success through teaching strategies and appropriate instructional program design (Bianco & Leech, 2010; Horn, 2015; Jones, 2014; Mergler et al., 2016; Tangen & Beutel, 2016 as cited in Edgar, 2019). VanTassel-Baska and Coleman (2018, as cited in Edgar, 2019) acknowledge that a focus upon teacher education is essential in developing the ability to "differentiate curriculum, instruction and assessment yields effective services for the often misunderstood twice-exceptional student" (p. 53).

  Serving twice-exceptional learners requires access to accurate information and best practices, including formal and informal training methods via mandatory workshops and conferences as well as higher-level courses (Jones, 2014, as cited in Edgar, 2019). The report, *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad*, detailed the growing research indicating characteristics of effective professional development identifying the greater issue that most teachers are not being provided access to quality professional development (Darling-Hammond et al., 2009). The report concluded that, "Effective professional development is intensive, ongoing, and connected to practice; focuses on the teaching and learning of specific academic content; is connected to other

school initiatives; and builds strong working relationships among teachers" (Darling-Hammond et al., 2009, p. 5).

Professional learning opportunities, as discussed, are a necessary component for effective support and education for twice-exceptional learners. However, as indicated by the research, there is a gap in such educator learning opportunities that are on-going, of high quality, and targeted for supporting twice-exceptional learners. For change to occur and support for twice-exceptional learners to grow and mature, educational institutions require leaders who are skilled in change management as well as in identifying and developing ongoing, meaningful and purposeful professional development (Brower & Balch, 2005).

Qualities and Characteristics of Leadership

Transformational leaders focus on inspiring others to "commit to a shared vision and goals for an organization or unit, challenging them to be innovative problem solvers, and developing followers' leadership capacity via coaching, mentoring, and provision of both challenge and support" (Bass & Riggio, 2006, p. 4). Transformational leaders support their followers to grow and become leaders by identifying and responding to the needs of their followers (Bass & Riggio, 2006). These same researchers identify four core components of transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Each element, while unique, is often combined or intertwined with another when measuring transformational leadership. For example, at the core of transformational leadership is empowerment and is a product of individualized consideration combined with intellectual stimulation.

Transformational leadership revolves around developing and cultivating a learning community that commits to the mission and vision of the school, especially the success of all

learners. Through transformational leadership, education change may emerge, allowing for and fostering a community that embraces new and innovative strategies to support all learners (Shields, 2018). Transformational leadership within schools ensures that educators are challenged and encouraged to innovate and experiment with ideas from experience, inspired by leadership, or provided through thoughtful and meaningful ongoing professional development (Nedelcu, 2013). These combined characteristics create a school culture whereby educators are encouraged to explore beyond the already known and explore new and varied teaching and learning methods to meet their learners where they are and guide them to where they want to be.

Professional Learning Communities (PLC) is "an ongoing process in which educators work collaboratively in recurring cycles of collective inquiry and action research to achieve better results for the students they serve" (DuFour et al., 2016). It is the assumption that PLCs function in order to improve learning through continuous professional learning for educators. Three main factors revolve around successful PLCs: a focus upon learning, collaborative responsibility and collaborative culture, and results orientation (DuFour et al., 2016). PLCs work on the basis of a shared vision that focuses upon the support of learners the school serves. A transformational leader is required to model or spotlight the actions which will support the fulfillment of the shared vision. Burns (1978, as cited by Kanold, 2011) described that part and parcel of transformational leadership is the adherence to the shared vision while supporting followers towards the achievement of greater levels of motivation and purpose.

Transformational leaders work to implement a culture of PLCs to improve opportunities for effective and purposeful learning for each unique learner. Such leaders work to guide educators to work collaboratively to clarify the learning requirements for learners, monitor learning and progress in a timely manner, and ensure systematic interventions and extensions

when needed (DuFour et al., 2016). Ultimately, it is the expectation that the school becomes more effective in their ability to support all learners, via PLCs and the continuous learning of the educators and leaders. Thus, it is imperative that leaders ensure there are structures in place to encourage and expect staff to routinely engage in job-embedded professional learning to make certain that all students learn (DuFour et al., 2016).

Summary

Despite the considerable body of literature devoted to twice-exceptionality, there are no studies that explore the professional development, the support structures, and the beliefs and background knowledge required to bring learning environments forward to cater to the neurodiverse spectrum found within the international school community. The research conducted through this proposed dissertation will aid in filling this gap in the literature and practice. Recognizing the cultural and linguistic differences, varying ideologies, backgrounds, and potential biases and stigmas present within the international population, it is imperative to identify and include international schools from around the globe to expand the validity and transferability of the research as it seeks to identify, understand, and prioritize the needs of international schools to improve their capacity to support their neurodiverse learners.

Chapter 3: Methodology

This chapter consists of the descriptions of the process and procedures used to identify and examine the needs of international schools in their support of twice-exceptional and neurodiverse learners. The following explores the research questions and research design and collection and analysis procedures used in the three phases of this study.

Purpose of the Study

The purpose of this proposed dissertation is to identify the professional needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. Through this research, the international school community will be provided with the opportunity to recognize what they already know and do and gain clarity in the areas of need to become a more inclusive and 2e supportive learning community. More specifically, the researchers plan to recognize perceptions, knowledge, and practice, analyzing common needs throughout diverse international schools, and providing a future research discussion to guide schools forward as they navigate support for their 2e populations.

Researchers' Positionality

The research experience has the potential to be influenced by personal bias. Therefore, the positionalities of the two researchers are provided to reveal any potential biases which may affect the data collection and analysis process.

Both researchers have been international school educators for more than 17 years. As lifelong learners and dedicated professionals who are passionate about celebrating neurodiversity

and developing innovative learning environments that are supportive of both strengths and needs, researchers 1 and 2 are dedicated to providing all learners with voice and choice within their learning environments including the opportunity to co-construct their learning journey. Both researchers are members of the international school community and work within various contexts: the classroom, school-wide, community wide, to support the creations of environments where learning is equitable for all, where unique learning profiles and neurodiversity are celebrated, and where awe, excitement, and student voice are brought back into learning.

Researchers 1 and 2 have been exposed to qualitative, quantitative, and mixed-methods research which informed their research practices and influenced their research choices. The researchers' interests are focused upon identifying the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. There is a common experience within Professional Learning Communities (PLCs) among the researchers, thus the researchers recognized the power of collaborative teaching practices in order to support the learning journeys of all students, especially those who are neurodiverse. Ultimately, it is the aim of the researchers to support international schools, leaders, specialists, and especially educators, to develop teaching and learning practices that bring student's strengths to the forefront and create learning environments that are supportive of twice-exceptional individuals. The research journey depicted throughout this dissertation provided the researchers and the wider international school community with insights into the macro view of international schools in regards to their support of twice-exceptional students.

Research Questions

The following overarching research question steered this dissertation:

How might we identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity to enhance students' holistic growth as unique individuals in order to become a more inclusive and 2e supportive learning community?

To pursue this overarching question, the following research questions and sub-questions were addressed:

1. Do international schools provide 2e friendly environments where neurodiversity is acknowledged, celebrated and supported?

   - What are the understandings of the key components and key definitions surrounding twice-exceptionality?

   - What are the perceptions and beliefs towards twice-exceptionality?

   - What school structures support the learning needs of gifted students with exceptionalities?

     ○ What school-wide strategies and or programs support 2e learners' education journeys both academically and social-emotionally?

2. How widely understood are the characteristics of a 2e learner, leading to early identification and appropriate support?

   - What professional learning opportunities are offered to support classroom teachers who work with gifted students with exceptionalities?

   - Are there organizational protocols that promote the successful identification and support for 2e learners?

3. How widely understood are the components of a 2e friendly environment and the strategies and principles to help create it?

- What instructional strategies are used by classroom teachers who work with gifted students with exceptionalities?

    ○ What specific support do these classroom teachers provide to gifted students with exceptionalities?

    ○ What instructional strategies are used to support the learning of gifted students with exceptionalities?

    ○ What assessment practices do classroom teachers implement to assess or evaluate gifted students with exceptionalities?

    ○ What social emotional support do classroom teachers provide?

    4. How widely understood, and accommodated for, is the asynchronous development of 2e and neurodiverse learners?

Description of the Study and Participants

International schools throughout the globe form part of recognized associations such as The Association of International Schools in Africa (AISA) or The Association of American Schools of Central America, Colombia-Caribbean, and Mexico (TRI) depending on their geographical locations. The study targeted international schools that are part of their regional international school associations.

For the purpose of this study, convenience sampling, which is a type of non-probability sampling technique, was used. Three different groups of participants were utilized for this study in order to recognize perceptions, knowledge, and practice; analyze common needs throughout diverse international schools; provide a future research discussion to guide schools forward as they navigate support for their 2e populations.

The Phase One group consisted of four international school leaders who were recruited to take part in an interview using the Consensual Quality Research (CQR) approach (Hill, 2012). The researchers recruited these four participants from their contacts in four different international schools from different regions of the world. The researchers contacted the participants by email, (see Appendix A) requesting voluntary participation in the interview process. The email contained a link to a Statement of Informed Consent consent form (see Appendix B).

The Phase Two group includes four experts, two in the field of twice-exceptionality, and two experts in international education. The researchers recruited the participants from their vast group of expert contacts in the fields of neurodiversity and international education by email (see Appendix C) requesting voluntary participation in the review process. The email contained a link to a Statement of Informed Consent consent form (see Appendix D).

The third and final Phase of the study aimed to incorporate 50 participants composed of school leaders such as Directors of Learning, who are responsible for guiding curriculum and learning within their schools, as participants from diverse continents of the globe to participate via the exploratory survey. They were actively recruited through the following process:

1. The researchers sent an email to the Executive Directors of the following regional associations: CEESA, ECIS, AMISA, Tri-Association, EARCOS, MAIS, AISA, NESA. The email (see Appendix E) contained a letter (see Appendix F) which was forwarded to Directors of Learning in international schools with the information regarding the study, a link to the consent form, (see Appendix G), and a link to the needs assessment survey, (see Appendix H).

2. These Executive Directors forwarded the letter to the Directors of Learning from the schools within their regional associations.

3. The Directors of Learning voluntarily decided to participate in the study by electronically indicating their consent within the survey and completing the needs assessment survey provided to them in a link with the email.

Identifying and including international schools throughout the globe is instrumental in being mindful of cultural and linguistic differences, and representative of varying ideologies, backgrounds, and potential biases and stigmas present within the international populations, expanding impact and transferability.

Research Design

The aim of this dissertation is to identify the professional needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. Through the recognition of perceptions, knowledge, practice, and analysis of common needs discovered via a needs assessment survey of diverse international schools, the researchers aspire to provide a launching point for schools to discuss the improvement of their current practices and for future research discussion to guide schools forward as they navigate support for their 2e populations.

The final result of the study was to gather and analyze data on the common needs identified from the exploratory quantitative survey. In order for the study to implement a relevant needs assessment survey, the researchers engaged in two preliminary qualitative phases. The results of Phase One and Phase Two drove the development of the needs assessment survey that was applied to the participants of Phase Three.

During Phase One, the four international school leaders were asked to voluntarily take part in an interview built around an interview guide (see Appendix I) that included a series of open-ended and semi-structured questions to guide exploration and discussion. The participants

signed a Statement of Informed Consent form before beginning the interview process. The

interviews were conducted individually via an online video call, which was recorded.

In Phase Two, merging the findings from the researchers' literature review and the input

gathered in Phase One, a draft needs assessment survey was presented to four content experts to

review after obtaining permission. The experts were asked to take part in a review process of a

needs assessment survey. They read the survey, developed by the researchers, and provided

feedback regarding question design, content, order, and overall survey structure. The process

lasted approximately 20-30 minutes and consisted of reviewing a draft of a needs assessment

survey and completing a feedback form (see Appendix J). All of the responses were held

confidentially and pseudonyms were assigned in place of all names. The participants' names are

held on a secure, password-protected link. Volunteers had the option to terminate participation at

any point of the review process and data would have been destroyed. The information gained

from this review process was used to refine the needs assessment survey to support international

schools to grow in their support of neurodiverse and 2e learners.

During Phase Three, the participants were contacted via an email from the Executive

Directors of regional associations with a letter prepared by the researchers that included a

description of the study, instructions, and links to both the consent form and the needs

assessment survey. The participants indicated consent electronically within the survey and then

completed the needs assessment survey. The survey was produced via Survey Monkey (see

Appendix H). Providing the consent and survey through Survey Monkey generated links,

ensured anonymity. Anonymity was ensured by altering the survey options within the program

by selecting Anonymize Response within survey options. The survey took approximately 30

minutes to complete and provided a series of questions that asked the participants' perceptions,

knowledge, and practices related to neurodiversity and twice-exceptionality. All of the responses were held confidentially. Volunteers had the option to terminate participation at any point, and data were destroyed. The information gained from this survey was used to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.

For the needs assessment to be needs-focused, it was designed within the framework of both the literature review and the qualitative interviews conducted by the researchers. The review of the literature was conducted based upon the work of Machi and McEvoy (2016) and began once the problem at hand was identified. Initially, planning for the literature review involved the creation of the process by which the problem would be solved. This involved taking into account two arguments, the argument for building the case for the research and the argument for forming the conclusions. The search for literature occurred via the collection and organization of the information. Machi and McEvoy's (2016) process included the analysis and organization of data through a logical arrangement. It was at this point, the themes began to emerge and conclusions were drawn.

The research design for the qualitative interviews was conducted using the Consensual Quality Research (CQR) approach. The researchers selected this methodology as "CQR is ideal for studying in depth the inner experiences, attitudes, and beliefs of individuals because it allows researchers to gain a rich, detailed understanding that is not usually possible with quantitative methods" (Hill, 2012, p. 18). The key components of Consensual Qualitative Research include:

1. inductive rather than deductive research

2. open-ended questions that stimulate participants' thinking and elicit rich responses

3. words rather than numbers

4. context of the entire case to understand each element

5. small number of cases in depth

6. multiple perspectives

7. reliance on consensus among the team members

8. strong emphasis on ethics and trustworthiness

9. continual return to raw data to verify conclusions (Hill, 2012, p. 7)

The researchers followed the CQR steps delineated below to ensure the integration of the experiences, attitudes, and perceptions towards twice-exceptionality and neurodiversity, into the exploratory needs assessment survey.

Getting Started

1. Choose a topic and review the literature.

2. Select a research team.

3. Develop and pilot test an interview protocol.

4. Select the target population and develop criteria for selecting participants from the population.

5. Recruit participants.

6. Conduct and transcribe interviews.

Within-Case Analysis

1. Develop domains.

2. Construct core ideas for each case.

3. Auditors check domains and core ideas for each case.

4. Revise domains and core ideas based on audit.

Cross-Analysis

1. Develop categories within domains across all cases.

2. Auditors check cross-analysis.

3. Revise cross-analysis based on audit. (Hill, 2012, p. 17)

The item structures for the quantitative survey were designed in accordance with the identified four key themes from the most current and pioneering research within the realms of neurodiversity and twice-exceptionality and from the observations drawn from the qualitative interviews. The initial need assessment survey underwent a review process conducted by two experts from the field of international education and two experts from the field of neurodiversity and 2e. The researchers guaranteed that the needs assessment was context-specific and reflected the international school systems by integrating the stakeholders' perspectives within the data and design of the needs assessment. These are "especially important because they may help leaders understand how the system's various components intersect and interact" (Cuiccio & Husby-Slater, 2018, p. 5).

In the case of this particular research endeavor, the context relied on a macro view of international schools with awareness on diversity, linguistic diversity, varied geographic locations, and differing education systems. Ensuring the survey was provided to the Directors of Learning within each school allowed for school-wide perspectives of the school ethos and the extent to which each school celebrates neurodiversity and supports the holistic growth of twice-exceptional learners (Cuiccio & Husby-Slater, 2018).

The needs assessment exploration was, above anything else, a process through which researchers were provided with the ability to identify, understand, and prioritize the needs of international schools to support neurodiverse learners, and to lay the groundwork for future

research within this field (Cuiccio & Husby-Slater, 2018). The methodology of this exploratory

mixed methods research study encompassed three of the five discrete phases of needs assessment

implementation as described by Cuiccio & Husby-Slater (2018) in the Needs Assessment

Handbook: the planning phase, the collection and organization of data, and the interpretation of

information.

Figure 1
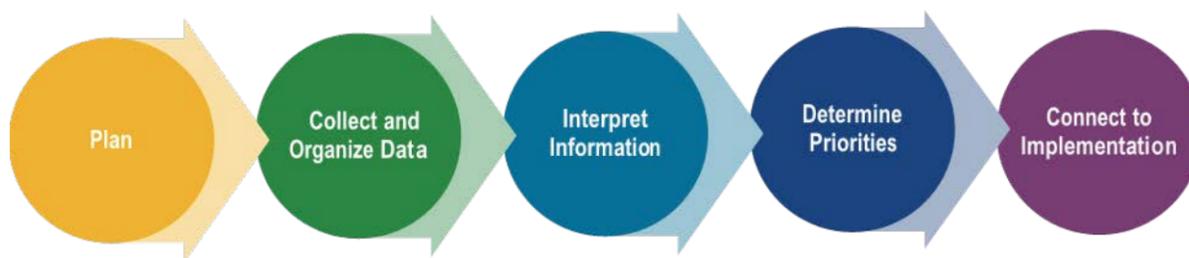
Note. Cuiccio, C., & Husby-Slater, M. (2018). *Needs assessment guidebook: Supporting the development of district and school needs assessments.* American Institutes for Research. The State Support Network. ED-ESE-15-A-0006/0001.

Planning Phase

The planning phase for this dissertation began by defining the purpose and intended

outcomes of the research by conducting a literature review in which four major themes with their

respective sub-themes, surrounding twice-exceptional literature and its complexity, were

identified. Subsequently, qualitative interviews to understand the key experiences, attitudes, and

beliefs towards twice-exceptionality and neurodiversity within the international school

community were conducted. Based on this framework, the researchers determined the guiding

questions for the development of the needs assessment exploration. The design of the exploratory

needs assessment survey involved initial determination of the purpose for the targeted population, identification of a comprehensive collection method, development of survey questions, and piloting the survey to make appropriate revisions according to feedback (Hill, 2012). The following step in the planning phase was to determine data collection procedures and timelines, identifying and inviting possible participants, and creating an introductory cover page with relevant information describing the purpose, content, process, and presentation of the research results (Cuiccio & Husby-Slater, 2018).

Collection and Organization Phase

The collection and organization phase of the needs assessment exploration survey included the researchers providing the survey to school leaders such as Directors of Learning, who are responsible for guiding curriculum and learning within their schools, recruited through a voluntary request by the Regional Association Executive Directors in diverse continents of the globe (Cuiccio & Husby-Slater, 2018). The researchers provided the survey to the regional heads who, in turn, distributed it to their corresponding participants within their designated regions. Once results had been gathered, the researchers reviewed and analyzed the information gathered in all three phases in order to highlight findings and provide further discussions.

The success of data collection was determined through the aim of the study and the research questions. For this study, the researchers' aim was to explore and pinpoint where the international school community lies in respect to their knowledge and implementation of key elements and themes surrounding twice-exceptionality and neurodiversity. In turn, allowing them to build upon what they already know and do while addressing areas of opportunities or needs to become a more supportive 2e community. The exploratory survey encompassed the following domains:

- Characteristics of school structures in place to support the learning needs of gifted students with exceptionalities.

- Understandings of 2e learners.

- Understandings of 2e friendly environments.

- Understandings of asynchronous development.

- Mindset towards 2e and neurodiversity.

Demographic information was gathered with regards to the community context data about each individual school highlighting what makes the schools unique.

- Global region

- School size

- School-age

- Teacher to student ratio

- Support staff to student ratio

- Teacher turnover rate

- Local vs. expatriate staff ratio

- Instructional language

- Neurodiversity professional development

Interpretation Phase

The interpretation phase closely looked at relevant data to identify and develop meaningful sets of information. The data were verified from the various individual sources to ensure more relevant outcomes, conclusions, and themes. The researchers ensured that the data were organized and presented in a manageable style to support the investigation of trends throughout the data sources and across time (Cuiccio & Husby-Slater, 2018).

Data Collection Procedure and Timeline

The researchers conducted the data collection procedure within a timeline that ensures established protocol compliance. The plan involved initially obtaining IRB approval. Upon IRB's approval, the researchers requested voluntary participation for the qualitative interviews.

1. The four international school leaders were asked to voluntarily take part in an Interview Protocol built around a series of open-ended (broad) and semi-structured questions to guide exploration and discussion.

2. The participants signed a consent form before beginning the interview process.

3. The interviews were conducted individually via an online video call, which was video recorded.

Upon completion of an exploratory needs assessment draft, the four experts were asked to:

1. Read the survey.

2. Provide feedback regarding question design, content, order, and overall survey structure.

3. Researchers revised the survey based upon feedback.

Subsequently, the researchers requested voluntary participation of Directors of Learning of international schools via the Executive Directors of regional associations to complete the surveys.

1. The researchers sent an email to the Executive Directors of regional associations (see Appendix E) containing a letter to be forwarded to Directors of Learning in international schools (see Appendix F) with the information regarding the study, a

link to the consent form (see Appendix G), and a link to the needs assessment

survey (see Appendix H).

2. These Executive Directors forwarded the letter to the Directors of Learning from

    the schools within their regional associations.

3. The Directors of Learning voluntarily decided to participate in the study by

    electronically indicating their consent within the survey and completing the needs

    assessment survey provided to them in a link with the email.

Data Analysis Procedure

The researchers conducted data analysis procedures in each of the three phases of this

study. For Phase One, the researchers following the CQR method conducted data analysis by

transcribing interviews, coding each participant's transcript, and conducting a within-case

analysis which led to the development of domains and core ideas for each participant. The

coding process was conducted in accordance with the model presented by Merriam and Tisdell

(2016). As explained by the authors, coding should be conducted based upon the theoretical

framework that has informed the study as well as the scheme that is relevant to the study. The

researchers, with the theoretical framework identified through the literature review in mind,

descriptively coded the transcripts. The coding resulted in the combination of ideas thus leading

to the development of domains.

The researchers proceeded to verify these domains and core ideas by peer-debriefing each

other's analysis of the transcripts. The process of verification provides beneficial feedback

regarding the accuracy and specificity of the list of domains (Hill, 2012). Finally, the domains

and core ideas were revised based on this review. This was followed by a cross-analysis which

led to the development of domains across all interviews. The researchers verified the

cross-analysis and finally made revisions based on the verification findings.

For Phase Two, the researchers analyzed the data by reviewing each participant's

responses to the feedback form. The researchers downloaded responses onto a spreadsheet and

proceeded to cross reference the responses among participants. From the cross reference the

needs assessment survey was revised in the areas of content, language, and formatting taking all

feedback into account.

The researchers' data analysis for Phase Three consisted of both quantitative and

qualitative data. For the quantitative data, the researchers first downloaded the data from Survey

Monkey onto a spreadsheet and obtained descriptive statistics. For the qualitative data, the

researchers downloaded the open-ended responses from Survey Monkey onto a spreadsheet and

proceeded to code each respondent's statements. From this coding, the researchers identified key

themes and core ideas. The exploration of the data was conducted to identify patterns or themes

through all responses and examined through the lens of the domains and core ideas (Hill, 2012).

The researchers verified these themes and core ideas by conducting a peer-debriefing, comparing

each other's analysis of the responses. Finally, the researchers created a thematic map, an

organizational tool utilized to support the analysis of qualitative data. The purpose of the

thematic map in this research study was to organize and identify patterns through the identified

themes, domains, and core ideas (Maguire & Delahunt, 2017). The researchers proceeded to

cross-reference the thematic map with the quantitative results to find supporting data.

Ethics Statement

The trustworthiness of this study was validated via letters of permission to the

participants to which the survey will be applied. This letter was provided to the IRB through the

application. The participants in the study took part voluntarily and did not receive any

compensation. Individuals and institutions who took part in this research study will receive

pseudonyms, anonymity and confidentiality was ensured. Doctoral candidates conducting

research are required to have approved proposals, consent from the IRB, and a valid Human

Subjects Certificate before beginning the project. The results of the study will be provided to the

schools involved if requested. The data and findings have been made available to Bridges

Graduate School researchers.

Summary

For the purpose of this study, convenience sampling, which is a type of non-probability

sampling technique, was used. Three different groups of participants were utilized for this study

in order to recognize perceptions, knowledge, and practice; analyze common needs throughout

diverse international schools; provide a future research discussion to guide schools forward as

they navigate support for their 2e populations.

There were three phases utilized for the data collection of this dissertation research. Phase

One consisted of four international school leaders who participated in a qualitative interview.

The second Phase included four experts, two in the field of twice-exceptionality, and two experts

in international education. Phase Two participants provided feedback on the exploratory needs

assessment questionnaire developed within the framework of the researchers' literature review

and the Phase One results. Finally, the third and final Phase of the study aimed to incorporate 50

participants composed of school leaders such as Directors of Learning, who are responsible for

guiding curriculum and learning within their schools.

Chapter 4: Results

This research study embraced a 3-phase process that included the development and application of a detailed and comprehensive needs assessment survey with the goal of obtaining a macro view of the international school community's journey towards supporting twice-exceptional and neurodiverse learners. This chapter will present the findings gathered through the data analysis procedures conducted for each phase of the research.

Phase One Findings

As stated in Chapter 3, four international school leaders were asked to voluntarily take part in an Interview Protocol built around a series of open-ended (broad) and semi-structured questions to guide exploration and discussion. The researchers followed the CQR steps delineated in Chapter 3 to ensure the integration of the experiences, attitudes, and perceptions towards twice-exceptionality and neurodiversity, into the exploratory needs assessment survey.

The researchers conducted a within-case analysis through which the following domains were identified: fix-it model, understanding of neurodiversity and twice-exceptionality key themes, professional development needs, cultural perceptions and bias, parental support and acceptance, and whole team approach. Subsequently, the researchers constructed core ideas for each case. The researchers individually analyzed two interview transcripts each, identifying the domains and core ideas within each transcript. The researchers audited each other's analysis of the transcripts. Finally, the domains and core ideas were revised based on this verification.

Following the CQR steps delineated in Chapter 3, the researchers then conducted a cross-analysis beginning by developing the categories represented in Table 4 that were present across all cases.

Table 4

Domains and Categories Developed from Cross-Analysis

Domain	Categories
Leveling Up	Fix-it model Deficit model Identification protocol Support system protocol
Missing Puzzle Pieces	Lack of understanding of neurodiversity and twice-exceptionality definition Lack of understanding of neurodiversity and twice-exceptionality identification Lack of understanding of neurodiversity and twice-exceptionality needs Lack of understanding of neurodiversity and twice-exceptionality support systems Lack of teacher time to support students Systemic lack of prioritization
It's All About the Knowledge	Need for targeted Professional Development within this area Need for knowledge of protocols and systems in place to support this population Need for continual knowledge-based support to ensure implementation
Cultural Crossroads	Host country's cultural perceptions and bias towards neurodiversity and twice-exceptionality School's culture towards neurodiversity and twice-exceptionality
Stakeholders Squared	Parental buy-in and support factor Educators' and counselors' buy-in factor
Weaving a Collective Portrait	Collaborative understanding of the whole child with all perspectives taken into account Comprehensive road map towards supporting the individual student through their school journey

The researchers proceeded to review all four interviews and their analysis, resulting in the revised domains, categories, and sub-categories presented in Table 5.

Table 5

Domains, Categories, and Sub-Categories Developed from Cross-Analysis Audit

Domain	Categories	Sub-Categories
Leveling Up	Fix it model	
		Teachers notice that the student is struggling. When it gets tough for the teacher, they seek support.
	Deficit model	
		Discussions are focused more on the learning support needed.
		Plans are more robust for those with learning deficits.
		May have 2e students, but focus is on the deficit label.
	Identification protocol	
		Students in tier 2 and 3 who have been identified as struggling are evaluated.
		Based on lack of student expected behavior.
	Support system protocol	
		Labeling students for ease of systems protocols.
		Lack of connecting gifted support with deficit support.
Missing Puzzle Pieces	Lack of understanding of neurodiversity and twice-exceptionality definition	
		Never heard anyone talk about a child who is 2e.
		Teachers probably do not have good understanding, interviewees expressed lack of a clear understanding.
	Lack of understanding of neurodiversity and twice-exceptionality identification	
		Teachers identify students as either academically challenged or possibly gifted.
		Narrow population, there have only been a couple 2e students coming through our school.
	Lack of understanding of neurodiversity and twice-exceptionality needs	

		Teachers probably do not have good understanding, interviewees expressed lack of a clear understanding. Teachers use untrained TAs to work with students who struggle. All students are capable of doing what we are asking of them, it is the social-emotional aspect that sometimes hinders them.
	Lack of understanding of neurodiversity and twice-exceptionality support systems	
		Does not do justice for the gifted end, only focused on the learning support end. Unclear about how to bring information together to support the teacher's support of students.
	Lack of teacher time to support students	
		Impossible for educators with such a high student load support individual needs of neurodiverse and 2e learners. So curriculum-focused, leaves no time for identification and support.
	Systemic lack of prioritization	
		The need to move away from grading (meeting expectations) and begin to put the child at the center as opposed to the curriculum. Need to shift the current system to focus on student flourishment.
It's All About the Knowledge	Need for targeted Professional Development within this area	
		Would be nice to have appropriately qualified personnel upskill teachers locally, on campus. Even when bringing experienced educators in, professional development is needed.
	Need for knowledge of protocols and systems in place to support this population	
		Need to provide knowledge to teachers to know what to do in each case. Provide time for observations of others implementing systems or strategies.
	Need for continual knowledge-based support to	

	ensure implementation	
		Easy to just send off to a counselor. Colleagues supporting each other.
Cultural Crossroads	Host country's cultural perceptions and bias towards neurodiversity and twice-exceptionality	
		Closeted parents who may lack understanding potentially feel shame or guilt due to cultural expectations or norms. School does not advertise their social-emotional program because culturally it is not accepted.
	School's culture towards neurodiversity and twice-exceptionality	
		Leadership must model in order for it to permeate and become a culture in the long run. Leadership must question practices in order to elicit change.
Stakeholders Squared	Parental buy-in and support factor	
		Parents who are open to their child's learning difficulties have more success. There are some parents who are in complete denial of their child's needs and it is always the child that ultimately misses out.
	Educators' and counselors' buy-in factor	
		All must participate and take action in programs in order for it to be successful. Most important factor in collaboration for support of a child is a common respect for the individual child themselves.
Weaving a Collective Portrait	Collaborative understanding of the whole child with all perspectives taken into account	
		Whole school counselor, SEN coordinator/team support classroom teachers to develop strategies. Need for case managers.
	Comprehensive road map towards supporting the individual student through their school journey	

Need to integrate external specialists'
viewpoints and strategies.
Ideal to provide and interweave opportunities
online and off-campus to build strengths and
interests.

Phase Two Findings

Phase Two provided researchers with feedback needed to assess and refine the needs

assessment survey. A future objective of the survey is to provide a school's leadership with the

insight that will lead toward greater awareness and support of these unique learners.

As explained in Chapter 3, the needs assessment survey was presented to the four content

experts for further refinement and revisions. The four experts were provided with a written

consent form and the survey questions developed by the researchers. The participants were asked

to read the survey and provide feedback regarding question design, content, order, and overall

survey structure. Responses were recorded by the four expert participants on the feedback form

document. Consent forms and responses were sent back to the researchers by each participant.

Once data were collected, the researchers carefully read through the responses and

examined and analyzed the feedback from all of the participants. The researchers first looked for

patterns or similarities in the respondents' comments within the feedback form. One participant

indicated concerns regarding a single leading question. The researchers adapted language choice

and answer choices to this specific question in order to eliminate the potential leading question.

Another participant commented on the possibility of the overall survey containing section titles

that could lead participants to certain answers. The researchers decided to remove all section

titles in order to eliminate this potential problem.

It was indicated by one participant that the survey could lead participants towards

assuming that best practices that support twice-exceptional learners are preferred. The researchers read through the survey to identify any areas that could be adapted or changed based on the feedback. The researchers ensured that the questions were diverse and allowed for participants to express their experiences, attitudes, and perceptions towards twice-exceptionality and neurodiversity. However, due to the nature of the survey and the objective of this research project to identify the professional needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth, this suggestion appeared impossible to change as the researchers may not conceal the aim of their study.

A participant indicated that there might be confusion regarding the term "personalized curriculum," an issue which the researchers addressed by integrating a definition of the term within the question. Another participant noted that there should be clear definitions of the terms "staff" and "support staff" and "faculty" as these may be understood differently within different schools. The researchers address this comment by defining these terms for participants.

One participant indicated the need for a clear set of instructions and background information prefacing the survey questions. The researchers had this information prepared, however, it was not included in the Phase Two survey draft. Therefore, the researchers ensured that this information was provided in the final draft of the survey.

One participant questioned the separation of referrals for testing to identify areas of disabilities and areas for giftedness. The participants noted that perhaps they may have a gap in their own understanding, but assumed that education psychology reports gave general information rather than one or the other. However, it was determined that the survey questions referred not to the education psychology report, but to the teachers' recommendation for the

identification of the student's areas of giftedness or areas of disabilities.

In regards to the layout, participants indicated that the survey was easy to read and follow throughout. Therefore, there were no edits or modifications required for the layout of the survey. The participants were asked to discuss and comment on whether or not there was sufficient and clear information regarding the study. All of the participants indicated that the information was adequate and explicit. Referring to the flow of the sections throughout the survey, participants indicated that the sequence was thoughtful and the repetition of the structure improved the flow. One participant noted that the case studies were clearly written and maintained the format of the rest of the survey.

The participants were asked to comment on the content of the questions, noting if they were inclusive of the realm of twice-exceptionality and neurodiversity. All responses indicated that this was indeed the case with one participant stating that the definitions would be a great help to future respondents. The design of the questions was declared by the participants to be well crafted, especially in relation to the rating scales. One participant added that the questions which allow respondents to use their own words provided an opportunity for further personalized details and clarification.

Finally, participants were asked to state whether or not the questions were written in a way that allowed for ease of answering. Three of the four participants noted that the questions were easy to answer with one stating the language was succinct and accessible. The final request on the feedback form asked the participants to consider the wording of the questions, referring in particular to the way in which they were written. Respondents were sought in order to determine if the questions were written with simple, concrete words, as well as consistent words and syntax. The participants indicated that the questions were indeed written with concrete and

consistent words and syntax. A suggestion was made by a single participant regarding the

wording of a particular series of questions. The participant recommended that the question be

reworded to enhance clarity. The researchers made the suggested changes. One response noted

that the conciseness with which the survey questions were presented would be appreciated by

participants taking part in compelling the survey.

The journey experienced by the researchers throughout Phase Two of the research

resulted in the survey which was utilized for Phase Three of the research. Phase Two participants

provided valuable insights into the structure of the survey and questions. Through the comments

from expert participants, the researchers were able to refine questions and response scales as well

as to provide further definitions to aid future participants responding to the survey questions.

The exploratory needs assessment survey, found in Appendix H, consisted of a total of 97

questions, 12 open-ended questions and 85 closed-ended. The open-end questions were found at

the end of each section of the survey and followed the series of closed-ended questions,

providing the participants the opportunity to respond on a personal level. Participants were

provided with 4 different response scales for the close-ended questions. These included: none,

minimal, limited, moderate, and extreme; no previous knowledge, limited knowledge,

developing knowledge, moderate knowledge, and expert knowledge; strongly disagree, disagree,

neutral, agree, and strongly agree; never, rarely, sometimes, often, and always. Two case studies

were included in the survey providing participants with real-life examples of twice-exceptional

learners, their learning experiences, challenges, and interests.

Phase Three Results

Based on the methodology of this research, the third and final Phase of the study aimed to

have 50 participants from diverse regions of the world to participate via the exploratory survey.

Because the researchers received a limited number of survey responses, they reached out to some

Directors of Learning to provide the contacts with information regarding the study and a link to

the needs assessment survey in order to increase the number of responses. The survey

distribution process yielded 29 participants who indicated consent to take part in the survey. Of

these participants, 41% completed the full survey with the remaining 49% demonstrating partial

completion of the survey. The researchers present results that include the number of participants

responding to the items. The researchers will present results indicating the number of participants

per data set presented.

Sample

A convenience sample, a type of non-probability sampling, was chosen by the researchers

in the attempt to target the specific participants relevant to the identification of the perceptions,

beliefs, and practices of international schools. From the 25 participants that completed the

demographic questions, the following data were collected to describe the sample.

The sample came from diverse regions of the world, Table 6 depicts the regions of the

respondents. As described below, the majority of schools are located in the Americas with 68%

of the sample being divided between North, South, and Central America.

Table 6

Respondents' Region

Region	Percent
Europe	0
Middle East	4
Asia	16
Oceania	4

Africa	8
South America	20
North America	12
Central America	36

The respondents came from schools of different sizes. As described in Table 7, the sample contained mostly schools with a student population ranging between 101 and 1,000, with 44% of the sample falling into the 101-500 range and 32% within the 501-1,000.

Table 7

Respondents' School Student Enrollment

Student Enrollment	Percent
<100	0
101-500	44
501-1,000	32
1,000-1,500	8
1,500-2,000	16
>2,000	0

The sample included schools with varied years of existence. As depicted in Table 8 the majority of schools, 64%, have been established for 30 or more years.

Table 8

School's Years of Establishment

Years	Percent
<10	16
11-20	12

21-30	8
31-40+	64

Needs Assessment Survey Results

The results of the Needs Assessment Survey are presented in terms of how they address the four research questions and the sub-questions. The overarching research question was: How might we identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity to enhance students' holistic growth as unique individuals in order to become a more inclusive and 2e supportive learning community? The researchers developed a series of four research questions to guide the acquisition of data in support of the overarching research question and the results are presented below.

Research Question 1 Results. To gather results to the first research question: Do international schools provide 2e friendly environments where neurodiversity is acknowledged, celebrated and supported, the participants were asked to rate the occurrence of nine types of challenges potentially faced by schools, educators, and other stakeholders. The scale provided to the survey respondents was; (1) none: no challenges experienced towards providing support, (2) minimal: some or occasional challenges experienced, (3) limited: Intermittent challenges experienced, (4) moderate: Periodic challenges experienced, and (5) extreme: Ongoing and consistent challenges experienced. Table 9 shows the means of the challenges faced. The means to all nine challenges fell close to either the limited or moderate level, indicating that participants experienced intermittent or periodic challenges in all of the areas. However, the greatest challenges identified were lack of teacher time with a 3.77 mean, struggling with a deficit-based culture with a 3.62 mean, and knowledge of the field with a 3.54 mean.

Table 9

Mean and Standard Deviation of Challenges Faced

Challenge	n	M	SD
Lack of teacher time	13	3.77	.89
Cultural bias and perceptions about neurodiversity	13	2.77	1.05
Knowledge of the field	13	3.54	1.34
Deficit-base culture	13	3.62	1.27
Targeting dichotomy of learner	13	3.23	1.31
Identification policies and procedures	13	3.31	1.38
Support policies and procedures	13	3.00	1.48
Parent support and involvement	13	3.38	1.00
Specialized staff	13	3.17	1.40

Participants were provided with open-ended questions that offered the opportunity to discuss any further challenges. Although data indicated more than 70% of leadership's understanding and knowledge of neurodiversity and twice exceptionality within the range of expert to developing, analysis of the open-ended questions data indicated three key challenges in providing adequate support for these learners in spite of this leadership base knowledge. The common challenges identified were: budgetary issues, perceived staff's knowledge-base, and a lack of systems in place to support neurodiverse learners. From the 12 responses for survey question #97, list and comment on any additional challenges faced within your school towards providing services to neurodiverse and twice-exceptional students, it was found that 33% identified lack of knowledge as a challenge to provide support, 44% indicated the lack of systems which are consistently used and in place, and 22% mentioned that financial issues and budgets were barriers to offer support to twice-exceptional and neurodiverse learners.

The analysis of the data pertaining to the sub-questions supported these findings of the common challenges. The first sub-question was: What are the understandings of the key components and key definitions surrounding twice-exceptionality? As indicated in Table 10,

participants indicated their level of knowledge related to a key concept as well as the perception they have of their staff's knowledge of the same concepts. The response scale was: (1) no previous knowledge, (2) limited knowledge, (3) developing knowledge, (4) moderate knowledge, and (5) expert knowledge.

The results indicated a discrepancy between the knowledge base of leadership and the perceived knowledge base of the staff. As described in the tables below, all eight key concepts show a greater knowledge and understanding from the leadership compared to the perceived staff's knowledge. With the leadership's average mean of 3.4 across all key concepts, the average leadership's level of understanding and knowledge of the identified key concepts and definitions surrounding neurodiversity falls between developing knowledge and moderate knowledge. In contrast to this, the average mean of 2.6 across all key concepts for the perceived staff's knowledge falls between limited knowledge and developing knowledge.

Table 10

Mean and Standard Deviation of Knowledge and Understanding of Key Concepts Surrounding Twice-Exceptionality

Key Concept	n	M	SD
Neurodiversity	21		
Leadership		3.1	.87
Staff		2.29	.70
Twice-Exceptionality	21		
Leadership		3.0	.98
Staff		2.14	.56
Giftedness	21		
Leadership		3.76	.75
Staff		2.95	.84
Learning Disabilities	21		
Leadership		3.81	.73

Staff		3.33	.64
Strength-Based Practices	21		
Leadership		3.90	.75
Staff		3.24	.81
Talent Development	20		
Leadership		3.35	1.06
Staff		2.70	.84
Talent-Focused Practices	20		
Leadership		3.15	1.11
Staff		2.60	.97
Dual Differentiation Practices	20		
Leadership		2.85	1.01
Staff		2.30	1.00

Table 10 above shows that the lowest occurring means for both groups, leadership and staff, are found in the knowledge and understanding of dual differentiation practices with a 2.85 and a 2.30 mean respectively, knowledge of twice-exceptionality with a mean of 3.0 and 2.14, and knowledge of neurodiversity with a 3.1 and a 2.29 mean. These three areas have an average mean of 2.98 for leadership knowledge and a 2.24 for staff. Conversely, a 3.59 and 2.96 average mean for the remaining areas: giftedness, learning disabilities, strengths based practices, talent development, and talent focused practices was reported for leadership and perceived staff's knowledge and understanding of these areas, respectively. This indicates a lack of knowledge of these areas towards the neurodiverse and twice-exceptional population.

The second sub-question for research question 1 stated: What are the perceptions and beliefs towards twice-exceptionality? The data regarding perceived staff perception of twice-exceptional learners further support the findings from the open-ended questions. From the 16 responses, 50% of them provided an unclear perception of twice-exceptionality, or a negative perception, due to their lack of knowledge base. For example, one participant stated "Very few

would know that term even exists, to be honest," while other responses referred to

twice-exceptional learners as "challenging," "needing of extra support," and "lumped into

special needs category."

The third and final sub-question, in support of question 1, asked: What school structures

support the learning needs of gifted students with exceptionalities? Participants indicated that

there are limited support systems which are currently in place. Data indicated only 8% of schools

provided personalized schedules, 33% of schools have systems in place that provide push-in

support from learning support specialists, 17% provide small group instruction within the

classroom, and 42% provide support through outside class programs including the use of an

enrichment room, inclusion programs, and support service programs. From the data, 17% of

schools indicated there are no support programs or systems in place.

Table 11 presents the data regarding the programs that support neurodiverse learners

beyond the classroom. It is important to note that these systems of support do not fall solely on

the responsibility of the classroom teacher. The support programs referred to in this data set are

implemented by professionals or specialists other than the classroom teacher. The rating scale

provided to participants regarding the protocols or programs in place was as follows: (1) none:

no support programs exist, (2) limited: support programs are in place but with limited scope, (3)

developing: limited support programs are in place but whole school system-wide services are in

the process of being designed, implemented, and/or integrated, (4) moderate: whole school

programs are in place but could be improved, (5) excellent: successful and well established

whole school programs are in place.

It was reported that of programs beyond the classroom 15% of schools fall within the

scope of none or limited, 31% within developing, 38% within moderate, and 15% within

excellent. Interestingly, as seen in Table 11, it was observed that the number of programs in place beyond the classroom for those that are gifted and those who are twice-exceptional were fewer in comparison to the reported programs for those with learning disabilities. Regarding programs for gifted learners, 38% reported none or limited options, 31% indicated developing programs, 23% noted moderate numbers of programs, and 8% recorded excellent programs provided. The programs available for twice-exceptional learners, as reported by the school leader participants, indicated 54% had limited or no programs for twice-exceptional learners beyond the classroom, 38% said they had a developing number of programs. In contrast, 8% reported moderate programs, and none of the participants indicated that their school provided excellent programs beyond the classroom for twice-exceptional learners.

Table 11

Mean and Standard Deviation of Programs Beyond the Classroom

Program	n	M	SD
To support students with learning disabilities	13	3.46	1.08
To support gifted students	13	2.69	1.32
To support 2e students	13	2.23	.97

Research Question 2 Results. The second research question developed by the researchers sought to identify: How widely understood are the characteristics of a 2e learner, leading to early identification and appropriate support? The respondents, through the open-ended responses, identified three methods for identifying and providing support for twice-exceptional students that may be used within their learning environments.

For the process of gathering the perspectives of school leaders' recommendations for identification of twice-exceptional learners, the researchers utilized the response scale: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree. It was found, as seen in

Table 12, that 23% of school leaders disagreed with testing the learner in Case Study #1 for

learning disabilities (see Case Studies in Appendix H). The data from the survey showed that 0%

disagreed with testing for giftedness. This indicates that all respondents were able to identify the

learner's gifted attributes, however it is important to remember the duality and co-morbidity

present in twice-exceptional learners. The lack of recognition of the learner's need to be tested

for areas of learning disabilities points to potential issues pertaining to masking, lack of support

for the areas of difficulty, and inappropriate use of dual differentiation strategies. In Case Study

#2, leaders recommended testing for both learning difficulties and giftedness equally with means

of 4.08 and 4.0 respectively.

Table 12

Mean and Standard Deviation of Case Studies Recommendations for Testing

Recommendation	*n*	*M*	*SD*
Case Study 1	13		
Recommend testing for areas of learning difficulties		3.69	1.07
Recommended testing for areas of giftedness		4.23	.70
Case Study 2	13		
Recommend testing for areas of learning difficulties		4.08	1.00
Recommended testing for areas of giftedness		4.00	.88

As in shown in Table 13, the respondents were asked to indicate the type of support they

would recommend for learners in Case Study #1 and #2. For Case Study #2, the

recommendations for gifted support beyond the classroom and for mentorship programs were

similar. However, regarding Case Study #1, 69% of responses indicated a lack of

recommendation for gifted support beyond the classroom by selecting responses of disagreement

or neutrality. In regards to recommendations for mentorship or enrichment programs, 30%

agreed, however 38% of respondents did not recommend a mentorship program be offered. The

response scale was as follows: (1) strongly disagree: I feel this recommendation would be

detrimental, (2) disagree: I feel this recommendation is unnecessary, (3) neutral: I am

undecided, unsure, or consider it irrelevant, (4) agree: I feel this recommendation is appropriate,

and (5) strongly agree: I feel this recommendation is necessary and beneficial.

Table 13

Mean and Standard Deviation of Case Studies Recommendations for Support

Recommendation	n	M	SD
Case Study 1	13		
Recommend for gifted support beyond the classroom		3.23	.80
Recommend for mentorship or enrichment program (talent aligned)		3.77	.89
Case Study 2	13		
Recommend for gifted support beyond the classroom		3.23	1.00
Recommend for mentorship or enrichment program (talent aligned)		3.38	.88

The first sub-question for research question 2 asked: What professional learning

opportunities are offered to support classroom teachers who work with gifted students with

exceptionalities? With regard to the survey's closed-ended questions about professional learning

opportunities, respondents were provided with the following rating scale: (1) none: the school

has not committed to the development of teachers and thus teachers have no targeted training,

(2) limited: the school has committed to the development of teachers through a single workshop

or seminar, (3) developing: the school has committed to the development of teachers by

providing multiple workshops or seminars, (4) moderate: the school provides professional

development for teachers through ongoing professional learning opportunities, (5) excellent: the

school provides ongoing professional development for teachers by hiring an on-site specialist to

ensure ongoing professional learning, application, etc. Table 14 provides the means from the data

regarding the professional learning opportunities provided by the school to three different

stakeholder groups for the identification of learning disabilities, giftedness, and

twice-exceptionality. Professional learning opportunities for teachers were reported to be limited

in the areas of identification of learning disabilities with a 2.69 mean and giftedness with a 2.00

mean. The mean for learning opportunities for teachers with regards to twice exceptionality was

reported as 1.69. It was observed that the means for the learning opportunities for administrators

within the school were lower than those of the teachers, especially within the realm of giftedness

with a 1.92 mean and twice exceptionality with a 1.77 mean, making the researchers aware that

administrators receive little or no training with regards to these two areas. Finally, community

members such as families, non-teaching staff, and mentors, received limited or no professional

learning opportunities in the areas of identification of learning disabilities with a mean of 1.85, in

giftedness with a 1.33 mean, and in twice-exceptionality with a 1.38 mean. One participant

noted, "Thus far, only the psychologist and the SEL/counselor have attended mental health

conferences and PD opportunities."

Table 14

Mean and Standard Deviation of Professional Learning Opportunities

Professional Learning Opportunities	n	M	SD
For teachers			
Identification and support of learning disabilities	13	2.69	1.38
Identification and support of giftedness	13	2.00	1.18
Identification and support of 2e	13	1.69	.91
For administration			

Identification and support of learning disabilities	13	2.54	1.45
Identification and support of giftedness	13	1.92	1.00
Identification and support of 2e	13	1.77	.80
For community members (parents, non-teaching staff, mentors, etc)			
Identification and support of learning disabilities	13	1.85	.95
Identification and support of giftedness	13	1.33	.62
Identification and support of 2e	13	1.38	.62

The second and final sub-question for research question 2 asked: Are there organizational protocols that promote the successful identification and support for twice-exceptional learners? The scale provided to participants for rating the protocols or programs in place currently within their schools was as follows: (1) none: no support programs exist, (2) limited: support programs are in place but with limited scope, (3) developing: limited support programs are in place but whole school system-wide services are in the process of being designed, implemented, and/or integrated, (4) moderate: whole school programs are in place but could be improved, (5) excellent: successful and well established whole school programs are in place. The data regarding the processes and protocols in place for the identification of learning disabilities, displayed that 0% of the participants' schools had none or limited programs in place for the identification of learning disabilities. Forty-six percent of the participants' schools had limited support programs and whole school programs were in the process of being developed. Finally, of the participating schools 31% recorded that their schools had whole school programs in place for identification of learning disabilities yet they required improvement, and 23% indicated that their processes were well-established and successful.

With regards to the data collected for protocols in place for the identification of giftedness within participating schools, 54% stated that they did not have or had limited processes or programs in place. This was the same for the identification of twice-exceptionality,

54% indicated their school's had no or limited programs or process in place. With regards to

programs and processes for the identification of giftedness, 8% reported having limited programs

in place with whole school programs being developed, 15% have whole school systems in place

that require improvement and 23% have excellent and well established programs and processes.

In contrast, programs and processes in place for identification of twice-exceptionality, within

participating schools, were reported as developing in 30.77%, moderate in 15.38% and excellent

in 0%.

As shown in Table 15, the processes and programs in place for the identification of

giftedness and twice-exceptionality diminish in scope compared to those for learning disabilities

within the participating schools.

Table 15

Mean and Standard Deviation of Processes and Protocols

Process and protocols	n	M	SD
For identification of learning disabilities	13	3.77	.80
For identification of giftedness		2.92	1.44
For identification of 2e		2.46	.93

Research Question 3 Results. The third research question developed in support of the

overarching research question aimed to identify: How widely understood are the components of

a 2e friendly environment and the strategies and principles to help create it? The one

sub-question for research question 3 sought to identify: What instructional strategies are used by

classroom teachers who work with gifted students with exceptionalities? The results pertaining to

this research question, as seen in Table 16, indicate a discrepancy between the recommendation

made by leadership to use the identified tasks and the perceived staff's level of implementation

of the following strategies: alternate assessment tasks, personalized learning plans, personalized

learning curriculum, dually-differentiated strategies, and mentorship or enrichment programs.

The survey presented participants with two different response scales. The scale provided for

leadership to identify their level of recommendation was (1) strongly disagree, (2) disagree, (3)

neutral, (4) agree, and (5) strongly agree. Respondents were provided with a different scale to

identify their perceptions of their staff's level of implementation of the noted strategies. The

scale included: (1) never: this practice is never applied. (2) rarely: this practice is applied by a

few teachers in a few cases. (3) sometimes: this practice is applied by some teachers in some

cases. (4) often: this practice is regularly applied by most teachers. (5) always: This practice is

consistently applied and considered a school-wide common practice.

Table 16

Mean and Standard Deviation of Recommended Strategies and Staff's Level of Implementation

for Case Study 1

Strategy	n	M	SD
Alternate assessment tasks	13		
Leadership recommended		4.23	.89
Staff's level of implementation		3.31	.72
Personalized learning plans	13		
Leadership recommended		4.46	.50
Staff's level of implementation		3.08	.73
Personalized learning curriculum	13		
Leadership recommended		3.42	.95
Staff's level of implementation		2.62	.92
Dually-differentiated strategies	13		
Leadership recommended		4.15	.77
Staff's level of implementation		2.38	1.00
Mentorship or enrichment program	13		
Leadership recommended		3.77	.89
Staff's level of implementation		2.69	.99

The data indicated that the average mean of the leadership's recommendation for all strategies was 4.15. This suggests that leadership agrees with the recommendation of all strategies presented. The average mean for leadership's perception of their staff's level of implementation of the same strategies was 2.8. The mean of 2.8 implies that school leadership from the participating schools perceive their staff's level of implementation falls between rarely and sometimes for these strategies: alternate assessment tasks, personalized learning plans, personalized learning curriculum, dually differentiated strategies, and mentorship or enrichment programs. One school leader indicated that, "Basic differentiation or accommodations" would be provided to the learner in Case Study #1 and another indicated that educators at their school would be able to provide "Some modifications…to tasks, materials and groups." Interestingly, 100% of participants indicated that they would recommend using personalized learning plans, yet only 50% would recommend personalized curriculum.

The data indicate that even though the school's leadership identifies the necessity of the strategies, it is perceived that the staff would rarely implement them creating a 2e friendly environment. For example, through the lens of dual differentiated strategies, leadership's mean of recommendation is 4.15, which indicates that they recommend the strategy, however, the mean of leadership's perception of staff's level of implementation is 2.38, meaning that they are perceived to rarely implement the strategies.

Table 17 below describes the social and emotional support provided for neurodiverse and twice exceptional learners within participating schools. The rating scale provided to participants was: (1) none: no support programs exist, (2) limited: support programs are in place but with limited scope, (3) developing: limited support programs are in place but whole school system-wide services are in the process of being designed, implemented, and/or integrated, (4)

moderate: whole school programs are in place but could be improved, and (5) excellent: successful and well established whole school programs are in place. It is noted there are whole school programs in place for inside classroom social and emotional learning with a 3.31 mean, however, these programs are of limited scope beyond the classroom with a 2.15 mean. Overall, 69% of participants identified that their schools have no, or limited, social and emotional learning opportunities beyond the classrooms. One respondent noted, "Very limited, there are opportunities to join sessions on this topic, but a program is not in place," when speaking about social and emotional instruction within their school. Another school leader mentioned the role of the classroom teacher in their social and emotional instruction, "Teachers will lead a unit/project connected to social interactions, transitions, changes, awareness, lifespan and development etc."

Table 17

Mean and Standard Deviation of Social Emotional Support for Neurodiverse and 2e Learners

Social Emotional Support	*n*	*M*	*SD*
Classroom SEL intentional instruction	13	3.31	.99
Beyond classroom SEL programs	13	2.15	1.10

The data indicate schools do take a collaborative team approach for the development of identified neurodiverse students' profiles and support plans with a reported 100% learning support staff involvement, a 91.7% teacher involvement, a 83.3% administrator involvement, a 83.3% counselor involvement, a 75% parent involvement, 66.7% external support staff involvement, and a 66.7% student involvement.

Table 18

Stakeholders' Involvement in the Development of Neurodiverse Students' Profiles and Support Plans

Stakeholder	% of involvement
Teachers	92
Learning Support Staff	100
Counselors	83
External Support	67
Administration	83
Parents	75
Student	67

Research Question 4 Results. The final and fourth research question aimed to understand: How widely understood, and accommodated for, is the asynchronous development of 2e and neurodiverse learners? Twice-exceptional learners are often identified as grappling with asynchronous development, thus requiring learning experiences that may be beyond their grade level, and in other instances, they are in need of learning opportunities to develop a range of skills that are underdeveloped in relation to the expectations of their age and grade. When reporting about personalized curriculum recommendations, 50% of leadership reported neutrality or disagreement with recommending this practice for Case Study learner #1. As seen previously in Table 16, staff's level of implementation of such practice falls within the rarely and sometimes scope with a 2.62 mean. However, accommodating for the 2e learner's needs due to their asynchronous development becomes quite a challenge without a personalized curriculum as their needs often fall above and below their age and grade.

Summary

The three phases of this research provided an interesting journey of data collection that led the researchers to not only develop a survey tool, but gather insightful data regarding the needs of international schools in multiple regions of the globe. The data yielded in qualitative interviews of Phase One provided the researchers with the following collection of domains

applicable to the framework established from the literature review: Leveling Up, Missing Puzzle

Pieces, It's all about the Knowledge, Cultural Crossroads, Stakeholders Squared, Weaving a

Collective Portrait. This in turn, drove the development of the exploratory needs assessment

survey.

      The Phase Two participants undertook the role and responsibility of providing feedback

to the researchers on various aspects of the survey including content, structure, layout, language

choices, terminology, answer choices, and potential bias. The researchers adapted language

choice and answer choices to specific questions, and removed all section titles in order to

eliminate potential lead. Based on the Phase Two analysis results, the researchers also included

specific term definitions, clear set of instructions, and refined scales to enhance clarity for the

Phase Three respondents.

      The third and final phase of the research was the application of the exploratory needs

assessment survey to 29 Directors of Learning from international schools around the world. The

data gathered through these surveys indicated a high leadership understanding and knowledge of

neurodiversity and twice-exceptionality falling within the range of expert to developing levels.

However, analysis of the data indicated three key challenges for providing adequate support for

twice-exceptional learners in spite of this leadership base knowledge: budgetary issues,

perceived staff's knowledge-base, and a lack of systems in place to support neurodiverse

learners. A discrepancy between the knowledge base of leadership and the perceived knowledge

base of the staff, as well as an unclear perception of twice-exceptionality, or a negative

perception, due to the lack of knowledge base, was also noted within the data.

      Participants indicated that there are limited systems currently in place to support

neurodiverse learners, and in particular, the number of programs beyond the classroom were

notably lower in number in comparison to programs for those with learning disabilities. In addition, 69% of participants identified that their schools have no, or limited, social and emotional learning opportunities beyond the classrooms.

Professional learning opportunities for teachers were reported to be limited in the areas of identification of learning disabilities and giftedness with an even lower result for learning opportunities for twice exceptionality. It was also observed that learning opportunities for administrators, within these same categories, were reported to be less than those available for teachers. Finally, community members such as families, non-teaching staff, and mentors, received limited or no professional learning opportunities in the areas of identification of learning disabilities, giftedness, and twice-exceptionality.

Regarding the processes and programs in place for the identification of giftedness and twice-exceptionality, a diminished scope was observed compared to those for learning disabilities within the participating schools. The data also indicated that even though the school's leadership identifies the necessity of the strategies to support neurodiverse and twice-exceptional learners, it is perceived that the staff would rarely implement them creating a 2e friendly environment.

The data indicated schools do take a collaborative team approach for the development of identified neurodiverse students' profiles and support plans with a reported 100% learning support staff involvement, a 91.7% teacher involvement, a 83.3% administrator involvement, a 83.3% counselor involvement, a 75% parent involvement, 66.7% external support staff involvement, and a 66.7% student involvement.

The implications of the results gathered through the three distinct phases of this dissertation will be further discussed in Chapter 5, Discussion and Recommendations, as the data

provided a platform from which to explore and plan for the journey forward into becoming a

more inclusive international school community.

Chapter 5: Discussion and Recommendations

This chapter will discuss the results of this study and explore future research through the framework of the domains and categories identified in the results of Phase One and Phase Two of the study. This research study began with an in-depth review of literature which resulted in four distinct themes: unveiling the wonders of the 2e mind, establishing safe learning environments, embracing: it takes a village, and transformational leadership. Following this review, the researchers developed a 3-phase research plan, resulting in the development and implementation of an exploratory needs assessment survey assessing the current ability of international schools to support 2e and other neurodiverse learners.

Phase One consisted of a series of four qualitative interviews with leaders in the field of international education. These interviews resulted in the identification of common domains, categories, and sub-categories applicable to the themes and framework established from the literature review. These domains and categories can be found in Chapter 3 (see Table 5). Phase One of the research yielded a needs assessment survey developed under the framework of both the literature review and the results from the Phase One interviews. Phase Two of the study included the recruitment of the Phase Two participants, two from the field of neurodiversity and two from the field of international education. The researchers' needs assessment survey was presented to these four content experts for refinement and revisions.

Phase Three, the final phase, included the responses from 29 school leaders such as Directors of Learning, who are responsible for guiding curriculum and learning within their schools, as participants from diverse continents of the globe to participate via the needs assessment survey. This phase of the study provided the researchers with insights into the current perceptions and practices represented by the 29 school leaders who responded to the survey.

From this point, the results of the exploratory needs assessment survey will be discussed along with implications for future research and recommendations.

Discussion of the Results

Leveling Up

The first domain identified within Phase One of the research was Leveling Up. This domain title was chosen to illustrate the need for schools to upgrade their current models, perspectives, protocols, and systems to current research-based best practices. This domain encomapasses the categories of the fix-it model, deficit model, identification protocol, and support system protocol. The term leveling up was chosen to represent the call to upgrade or improve the schools' current models, perspectives, and systems with regards to neurodiverse and twice-exceptional learners.

Fix-it model. The fix-it model encompasses the ideas of seeking help in the face of observed and experienced difficulties within the classroom. The data in this area suggested that due to the lack of knowledge, there was a tendency to perceive twice-exceptional learners as "challenging," "needing of extra support," and "lumped into special needs category." Therefore, it becomes apparent that the focus, or the lens within classrooms, spotlights the areas of struggle and are perceived to require fixing, while the potential areas of giftedness are not recognized nor highlighted as of importance. As in shown in Table 13 (see Chapter 4), the respondents were asked to indicate the type of support they would recommend for learners in Case Study #1 and #2. Regarding Case Study #1, 69% of responses indicated a lack of recommendation for gifted support beyond the classroom by selecting responses of disagreement or neutrality.

Deficit model. The deficit model refers to the discussions of educators and other stakeholders focusing upon the needs for learning support more frequently than on the development of strengths and as a result, the plans for learning support are far more robust than in other areas. As it was noted in Table 15 within the results section, the processes and programs in place for the identification of giftedness and twice-exceptionality within the international school community diminished in scope compared to those for learning disabilities within the participating schools. This is indicative of the prevalence and use of a deficit model within many of the schools involved in the survey. From the results, it is apparent that identification systems for learning disabilities are more robust in comparison for giftedness and twice exceptionality. This is a worrying trend that needs a shift from a deficit lens, which focuses on the negative, towards a strength-based lens, which moves the attention towards the positive and results in a more constructive self-perception, and perceived competence, potentially resulting in greater intrinsic motivation (Hiemstra & Yperen, 2015). Twice-exceptional learners have a greater chance of a more positive educational journey if the lens upon them is more often focused upon their strengths as opposed to a constant view of what they are unable to do.

Currently, from the 29 schools responding, it can be concluded that there is yet to be a distinctive shift away from a focus upon learning deficits towards a more holistic approach to the support of learners. It is also indicative that the identification of twice-exceptional learners is not commonplace as there would be a more balanced support for the identification of learning disabilities and giftedness. The data indicated that many schools identified they possessed good methods for the identification of learning disabilities, yet the issue continues to lie in the lack of inclusive identification practices for twice-exceptional students. Therefore, it may be concluded

that these schools have twice-exceptional learners enrolled, however, as the focus is deficit based, they are not being recognized nor supported appropriately.

Identification protocol. The subcategories which were identified within this category focused upon the tier system of identifying learners who need support. For example, with the use of the Response to Intervention model (RTI), learners who require support are placed within one of three tiers of support: tier 1: high-quality classroom instruction and group interventions; tier 2: targeted interventions; and tier 3: intensive interventions and comprehensive evaluation. Those learners who are identified as falling within tiers 2 or 3 are automatically provided with support. The data from the study yielded interesting results. It was found that all school leaders reported that their schools have protocols and processes in place for the identification of learning disabilities. This being said, the programs fell within the developing and well-established ranges. This was not the case for protocols and processes for the identification of twice-exceptionality and giftedness. Schools reported much lower instances of programs in place and of those schools with programs, with more than half stating that they did not have or possessed limited protocols or methods for identifying twice-exceptionality. Schools that reported having programs noted that they were limited, developing or in need of improvement. No schools reported having excellent programs for the identification of giftedness, with some requiring improvement and some being well-established. This indicates that the deficit model is used in international schools. As identification for gifted and twice-exceptional programs are less established in comparison to the programs for the identification of learning disabilities, it is apparent that the duality of twice-exceptional learners' learning profiles are not being addressed nor supported on a consistent basis. This implies that international school learners who are neurodiverse, and or twice-exceptional, are missing out on opportunities to grow holistically and achieve their unique

potential.

Support system protocol. The Phase One results illustrated challenges faced by international schools and their leadership. The common challenges identified from the survey data were: budgetary issues, perceived staff's knowledge-base, and a lack of systems in place to support neurodiverse learners. The lack of systems in place was reported by 44% of leaders, indicating that there is a lot of room for improvement and growth. Without the appropriate, organized, and consistent support systems for neurodiverse and twice-exceptional learners in place, these learners are not being provided with educational opportunities to support their strengths and diverse learning needs. Foley Nicpon et al. (2011) noted that twice-exceptional learners' academic, emotional, intellectual, social, and behavioral profiles are all unique and require a close look at all its components considering all perspectives. Without well-established supportive systems in place, there is unlikely to be consistent consideration of each individual and the multifaceted support required for these learners to grow holistically, thus not truly targeting their total abilities, needs, and potential.

Missing Puzzle Pieces

The second domain identified in Phase One of the study was, Missing Puzzle Pieces. This domain was composed of the following categories: lack of understanding of neurodiversity and twice-exceptionality definition, lack of understanding of neurodiversity and twice-exceptionality identification, lack of understanding of neurodiversity and twice-exceptionality needs, lack of understanding of neurodiversity and twice-exceptionality support systems, lack of teacher time to support students, and systemic lack of prioritization. The survey results supported this second domain from the Phase One results reaffirming the missing pieces of knowledge, understanding,

and identification of twice exceptionality and neurodiversity within the international schools that participated in the study.

Lack of understanding of neurodiversity and twice-exceptionality definition. The lack of understanding surrounding key concepts related to neurodiversity and twice-exceptionality was revealed through the results of Phase One, and supported through the data collected through Phase Three. From the Phase One results it was indicated that there was the possibility that some stakeholders may have never heard anyone talk about a child who is twice-exceptional. It was also apparent from Phase One that there may be educators who may not have a good understanding of twice-exceptionality. The results of the survey concurred with these results from Phase One in the light of educator knowledge and awareness.

The results of the survey indicated that there was a discrepancy between the reported knowledge of leadership and the perceived knowledge of staff. The leadership's knowledge was reported to be higher than that of the perceived knowledge of the staff, with the leadership reporting a range of knowledge between developing and moderate, and the perceived knowledge of staff falling between the range of limited to developing. This indicates that while leadership is in possession of knowledge surrounding the concepts of neurodiversity and twice-exceptionality, it is not being dispersed or shared among staff members who are working directly with these learners every day. It was noted by a respondent that, "Very few [educators] would know that term even exists, to be honest," making it feasible that this is an area, within international schools, that requires attention first and foremost. Systems and protocols for identification and support are important aspects of a supportive twice-exceptional learning environment, however, without knowledge, these programs are doomed to failure. As noted by Reis et al. (2014) and Webb et al. (2016) the lack of adequate knowledge and insight into the observable characteristics

of 2e learners, may result in a misdiagnosis, misunderstanding, or misinterpretation of behaviors

due to overlap between and among similar disorders.

      Lack of understanding of neurodiversity and twice-exceptionality identification. The

relevance of this category shone through in the results of the survey. It was made apparent in the

open-ended question responses of participants. In particular, a few respondents noted that

educators would most likely refer to twice-exceptional learners as "challenging," "needing of

extra support," and "lumped into special needs category." It was made aware to the researchers

that identification might appear as either academically challenged or possibly gifted, however,

not a combination of both within an individual learner. Leadership reported on the professional

learning opportunities provided to stakeholders with regards to developing knowledge and

understanding of the identification of learning disabilities, giftedness, and twice-exceptionality.

From the results, it was noted that educators and administrators were provided with greater

learning opportunities with regard to identification whereas community members had fewer

options. With regards to professional learning in the area of identification of giftedness and

twice-exceptionality, the instances were reported as fewer in comparison to that of learning

disabilities. Therefore, it is clear that the focus of professional learning, once again, leans more

towards the deficit model.

      The implications of these results are far reaching. Firstly, the professional learning

opportunities for educators and administrators was reported as ranging between developing and

limited with regards to identification of learning disabilities, this is particularly low. This being

the case, educators and administrators are not being provided with substantial learning

opportunities to support student identification of learning disabilities let alone giftedness or

twice-exceptionality. This, in turn, may lead to missed opportunities, misdiagnosis, and lack of

appropriate support for many learners. The lack of awareness and understanding of identification of twice-exceptional learners from all stakeholders causes concern as it also promotes the misconception that twice-exceptional learners are a limited population and there may only be a few individuals within a school.

      Lack of understanding of neurodiversity and twice-exceptionality needs. The results of the survey indicated that leadership reported an average knowledge base of between developing and moderate for neurodiversity and twice-exceptionality. Leadership's perception of staff's knowledge fell within the range of limited and developing. The lack of knowledge and understanding of the needs of those learners who are neurodiverse and twice-exceptional has multiple impacts. As was discussed earlier, the lack of awareness and understanding of the concepts of neurodiversity, twice-exceptionality and their unique profiles by educators, may result in misunderstandings, misconception, and missed opportunities for enhancing student growth. Of particularly interest is the lack of professional learning opportunities provided for community members such as parents, non-teaching staff, and mentors. These individuals work within classrooms and support and interact with learners on a daily basis. However, the results from the survey indicated that community members, other than teachers and administrators, received the least amount of professional learning in all areas of identification and support of learning disabilities, giftedness, and twice-exceptionality. Therefore, teachers are working with, and being supported by, staff and community members who have been identified as having less professional learning opportunities regarding identification and support of learning disabilities, giftedness, and twice-exceptionality. When the adults interacting with the learner have limited knowledge in the area of neurodiversity and twice-exceptionality, the support being provided will not match the support required.

Another factor to consider when discussing the needs of twice-exceptional learners is the social and emotional elements that may present a hindrance. From the survey, it was found that 69% of respondents identified that their schools have no, or limited, social and emotional learning support beyond the classrooms. Wang and Neihart (2015) discussed the importance of multiple stakeholders in the day-to-day lives of twice-exceptional individuals. They noted that educators, parents, peers, counselors, psychologists, family members, and mentors are all influential in supporting the social-emotional needs of twice-exceptional learners. Therefore, their influence affects their academic motivation and engagement and aids in establishing effective learning habits and conquering learning difficulties. To ensure appropriate and sufficient opportunities to grow is an area of continued growth for these schools.

Lack of understanding of neurodiversity and twice-exceptionality support systems. The study yielded results to indicate that there is a lack of developed and sufficient support systems, especially with regards to giftedness and twice-exceptionality. As was discussed previously, there is a general lack of systems in place for the support of twice-exceptionality and giftedness. It should be noted that without the support of giftedness, twice-exceptional learners may only receive support for their deficits. This in turn, fails to provide a strength-based approach to use their area of giftedness as leverage to support their areas of struggle. It is also important to keep in mind that masking of abilities, or disabilities, characterizes twice-exceptional learners, therefore, both giftedness and learning disabilities may be undetected depending upon the individual.

As is being discussed, the lack of clear and consistent support systems may also result in unclear procedures and processes for the accumulation of information from multiple stakeholders to assist the teacher in the support of neurodiverse and twice-exceptional learners. Without

schoolwide systems that support the process of identification and provide appropriate support, neurodiverse and twice exceptional learners are at risk of falling through the cracks, or missing out on important and beneficial opportunities that develop strengths and guide deficits. Another implication that should be taken into consideration is the support provided to the teacher. It may be apparent to the teacher that students may experience learning challenges, while also demonstrating advanced readiness, however, without adequate professional support and systems in place to support educators in their efforts to serve students well, there may be little that is actually done to address learner needs.

Lack of teacher time to support students. The exploratory needs assessment survey provided respondents with the opportunity to identify and discuss the challenges faced in various areas. It was reported that the greatest challenge was lack of teacher time. This indicates that the amount of time teachers have, and the time they require to support neurodiverse learners, are not one in the same. The implications of this lies in the reality that teachers have a heavy workload, large class sizes, possibly limited support, and do not have enough time to provide neurodiverse and twice-exceptional learners with the support they require. Interestingly, leadership reported that time was one of the greatest barriers for teachers to provide support for neurodiverse and twice-exceptional learners, however, the irony lies in the fact that leadership did not recommend programs that provide support beyond the classroom and the responsibility of the teacher. The results from Case Study #1 indicated that 69% of responses by leadership disagreed or indicated neutrality in the recommendation of gifted support beyond the classroom. It is also important to note that a curriculum-focused school leaves teachers with little time to develop learner-centered approaches that include identification and academic support of individuals. Leadership indicated that the instances of implementation of personalized learning plans falls between rarely and

sometimes. This indicates that within the international school community that participated,

schools are more directed towards curriculum-focused teaching and learning as opposed to a

learner-centered approach.

       Systemic lack of prioritization. Another factor that presented itself within the results of

Phase One of the study is the need to shift away from curriculum targets and focus on meeting

individual learner needs, ultimately placing the child's success at the center of teaching and

learning. From the results, leadership indicated that they would not recommend implementing

personalized curriculum for learners who are neurodiverse or twice-exceptional. Personalized

curriculum allows learners to flourish by removing unnecessary aspects of the curriculum that

learners have already mastered in order to focus upon other aspects of the curriculum. However,

in this study, data indicated a 2.62 mean on staff's implementation of personalized curriculum,

falling between the rarely or sometimes levels of implementation and only 50% of leadership

indicated that they would recommend using personalized curriculum in the case study questions.

Twice-exceptional learners are often identified as grappling with asynchronous development,

thus requiring learning experiences that may be beyond their grade level, and in other instances,

they are in need of learning opportunities to develop a range of skills that are underdeveloped in

relation to the expectations of their age and grade (Baum et al., 2017, p.1). Thus, a personalized

curriculum is essential to the appropriate support for these learners. VanTassel-Baska and

Coleman (2018, as cited in Edgar, 2019) provided support for this idea by stating that teachers'

ability to "differentiate curriculum, instruction and assessment yields effective services for the

often misunderstood twice-exceptional student" (p. 53). Educators and administrators who are

open to exploring different approaches to the curriculum provide a wider range of supportive

learning opportunities not only for neurodiverse and twice-exceptional learners, but potentially

for all learners.

It's All About the Knowledge

A third domain identified from Phase One of the study was, It's All About the Knowledge. The categories which fell within this domain were: need for targeted professional development within this area, need for knowledge of protocols and systems in place to support this population, and the need for continual knowledge-based support to ensure implementation. From the results, it was apparent that the knowledge base regarding neurodiversity and twice-exceptionality varied between leadership and the perceived knowledge of their staff.

Need for targeted professional development within this area. It was found via the results of the survey that leadership viewed their knowledge of the two concepts to be higher than that of their staff. There are a few issues that arise from this noted discrepancy. The first being that if staff members, who work directly with learners, lack knowledge and awareness of neurodiversity and twice-exceptionality, they may never be expected to support the duality of a twice-exceptional learner. Secondly, without the knowledge of the key concepts of learning disabilities and giftedness, identification of areas of need, giftedness, or the duality of twice-exceptionality may go undetected and under or inappropriately supported. This highlights the importance of ensuring quality and targeted professional learning opportunities for all educators, including highly experienced teachers.

An initial implication resides in the working to move beyond the financial pressure of hiring of specific specialists within a school and to think more creatively about how schools can provide this specialized support. International schools have unique profiles and challenges that domestic schools may not necessarily face. One of these is the hiring of specialized staff. Most international schools seek foreign hires, teaching or specialist staff members who are hired from

outside of the school's country and brought in on specialized contracts. This is a costly endeavor and adding another position at a school may pose too costly upon the budget, therefore, it may best serve international schools to adopt the stance, it takes a village and rely on all stakeholders by equipping them through appropriate professional learning opportunities.

Once an international school has committed to the process of growing and developing staff to greatly support twice-exceptional learners, it would be ideal to hire specialized professionals to join the school's staff, however, it might be more productive to invest in professional learning opportunities or a professional development series from a professional, weaving in external professional's ongoing advice and support. Once a school has made this commitment, the stakeholders work together to ensure successful and meaningful implementation to ensure the development of knowledge, systems, and processes to support twice exceptional learners. Coleman and Gallagher (2015) highlighted the importance of a diverse team collaborating and coordinating direction of support continuously in light of the ever changing needs of the learner as they grow and travel through their educational journeys. Twice-exceptional learners do not fit a particular model or mold, they possess unique profiles that alter and change over time. Therefore, the ongoing collaborative efforts within a school supports the educators, families, and most importantly, the learner.

Need for knowledge of protocols and systems in place to support this population. Participants, as depicted in Table 13 (see Chapter 4), indicated that 54% of schools did not have programs and processes for the identification of gifted and or twice exceptional learners. It is important to note that even with the best professional development or professional learning opportunities provided to improve practices for the identification of giftedness or twice-exceptionality, if there are limited or no processes or programs in place, the professional

learning would be impossible to implement by teachers and other staff members. Taking this thinking further, without programs and processes in place for the identification of giftedness, yet having programs for the identification of learning disabilities, it is highly unlikely that a school would be able to identify twice-exceptionality within learners. The ability to identify learning disabilities is only one step towards the identification of twice-exceptionality, thus it is imperative that schools have processes and programs in place for the identification of both giftedness and learning disabilities.

Beyond the need for these protocols and systems to be in place, is the need for teacher knowledge of such protocols and systems, and how to navigate them. If the educator is not aware of these systems and how to use them effectively to support the learner, the impact is minimized. Therefore, the intentional professional development of the school's systems is imperative. As a teacher, it is crucial to be able to determine what a learner needs in various situations and how to act accordingly. In order for this to occur and be successful, teachers require knowledge of various strategies that may be utilized to support learners with varied learner profiles. The results from the survey pointed towards another area which was affected by low rates of knowledge. This was the perceived staff's implementation of strategies identified as supportive of neurodiverse and twice-exceptional learners. One possible explanation for the low rates of perceived staff's implementation of the instructional strategies described in the results section: personalized learning curriculum, dually-differentiated strategies, and mentorship or enrichment program, is due to the low levels of knowledge. However, in the case of personalized learning strategies, 50% of leadership did not recommend using it. VanTassel-Baska and Coleman (2018, as cited in Edgar, 2019) acknowledge that a focus upon teacher education is essential in developing the ability to differentiate curriculum, therefore, a potential best practice that may be

utilized by educators for the support of twice-exceptional and neurodiverse learners is not being

applied nor encouraged by leadership. Thus, in turn, there are missed opportunities for

twice-exceptional learners to feel supported, acknowledged, and supported within classrooms of

international school educators.

One way of avoiding missed opportunities such as the one described above, would be to

offer dedicated professional learning opportunities that target the gaps in knowledge and skills.

However, it must be noted that professional learning opportunities are most successful when

paired with leadership's dedication to the identified change or changes, ensuring ongoing

implementation leading towards success. This idea will be further explored in the discussion of

the implications of future research. Another method for providing internal professional learning

opportunities is by being able to observe the practices of our teacher colleagues. Administrators

would provide release time for teachers to observe their colleagues using practices that support

the acquisition of new strategies. Team teaching with other educators or coaches also provides

teachers with the experience of using new strategies and approaches within the classroom.

Internal observations and team teaching utilize the professional expertise of internal staff

members, while addressing financial constraints.

Need for continual knowledge-based support to ensure implementation. The reported

knowledge base surrounding some key concepts and components of neurodiversity,

twice-exceptionality, and dual-differentiation practices are lower than the others: giftedness,

strength-based practices, learning disabilities, talent development, and talent-focused practices,

indicating that they have knowledge of a practice such as strength-based, but they may not have

the knowledge of how to apply the strategy towards neurodiverse or twice-exceptional learners

that possess that dichotomy or comorbidity of learning disabilities and giftedness. Through

professional learning and increased knowledge about twice-exceptionality and how to use and apply supportive strategies is important for neurodiverse and twice-exceptional learners. Without providing support for the academic needs and offering enrichment opportunities to develop students strengths and talents, these unique learners face the very real possibility of being lost or left behind. Renzulli and Reis (2014) promoted the idea of "a rising tide lifts all ships" approach by providing a continuum of services consisting of general enrichment strategies to all students (Renzulli & Reis, 2003, p. 345). However, they noted that it is not yet widely acknowledged as a guiding philosophy. Therefore, as a result, learners who have both advanced abilities and challenges often are at risk of falling through the cracks of receiving appropriate services.

Cultural Crossroads

The fourth domain identified through the Phase One results was Cultural Crossroads. International schools are located in host countries and may or may not share cultural norms and expectations. Therefore, it is important to keep in mind any cultural differences that may be of conflict between the culture of the country and the culture of the school. The school has the obligation to be sensitive to these potential cultural differences.

Host country's cultural perceptions and bias towards neurodiversity and twice-exceptionality. The results of the study indicated that cultural bias and perceptions about neurodiversity was rated a minimal to limited challenge among most schools. Parental involvement in the educational journeys of their children may look different within different cultures. This is something that needs to be taken into consideration within international schools and classrooms. The results of the study indicate that parental involvement in the collaborative development of learner profiles and support plans was reported at 75%. The question that arises from this information is whether or not the rate of parent involvement is based upon cultural

norms or is based upon the expectations of the individual schools.

Parental involvement is not the only aspect that may be culturally sensitive. Focus upon social and emotional difficulties may also be less culturally acceptable in various countries around the world. The data indicated that there are schoolwide, classroom-based social and emotional learning programs, however beyond the classroom these programs are of limited scope. The implications of this information is that the responsibility of social and emotional education lies on the shoulders of the classroom teacher and will thus be of limited scope due to the already mentioned lack of time and support systems in place. The low reported numbers of social and emotional learning programs beyond the classroom may also be based upon the cultural sensitivities of the countries where the international schools are located.

School's culture towards neurodiversity and twice-exceptionality. A school's culture is the heartbeat of the learning community. It is important to create safe and supportive learning environments that result in learners feeling valued, heard, and to express themselves and to have the space to work through their frustrations (Trail, 2006). The key concepts surrounding twice-exceptionality: neurodiversity, twice-exceptionality, giftedness, learning disabilities, strength-based practices, talent development, talent-focused practices, and dual differentiation were presented to respondents in the survey. The results indicated that across all concepts, leadership rated themselves as having greater knowledge than that of their perceived knowledge of their staff. The implications in light of these results indicate that leadership has the potential to disseminate knowledge and promote the understanding and usage of these concepts more than is currently in place. It should be the role of pedagogical leadership to model and promote best practices and develop the knowledge base of teachers in order to grow a culture and ethos that embraces neurodiversity and twice-exceptionality.

The study also revealed that support and programs beyond the classroom were limited in scope with options for supporting those with learning disabilities being in greater numbers than those for gifted and twice-exceptional. This information may be reflected upon and it could be presumed that pedagogical leaders use their knowledge and position to continue to develop the culture of a school to widen the support systems for neurodiverse and twice-exceptional learners by developing collective knowledge of staff members and growing the programs and support structures offered beyond the classroom, beyond the sole responsibility of the classroom teacher.

Stakeholders Squared

The fifth domain identified in Phase One of the research was Stakeholders Squared. Stakeholders are defined, in this study, as anyone who is involved in the educational journey of a learner or group of learners. These may include learners, families, teachers, learning specialists, administrators, and external support specialists. It is through the collaborative effort and insights from multiple stakeholders that work to ensure twice-exceptional and neurodiverse learners are seen and supported appropriately.

Parental buy-in and support factor. The buy-in from all stakeholders is imperative to the success of twice-exceptional and neurodiverse learners. Kayama & Haight (2014) noted that parents who are worried about potential stigmatization may be reluctant to accept identification of children as twice-exceptional. Providing learning opportunities for community members, including parent and families, may help to support the acceptance of individual differences such as giftedness, learning disabilities, and the duality of twice-exceptionality. Ultimately, without parental support and acceptance, these learners are bound to miss out on supportive learning opportunities that can provide access to growth, development, and success. From the results of the study, it was reported by leadership that community members, such as parents, were provided

with no or limited learning opportunities for the identification and instructional support of

learning disabilities, giftedness, and twice-exceptionality. The lack of education and

development of awareness limits the school's ability to grow support for the implementation of

supportive and innovative programs that have the potential to benefit all.

      Educators' and counselors' buy-in factor. In order for educational programs to be

successful and provide meaningful support, it is imperative to seek and obtain cooperation from

educators and counselors within a school. The results of the study pointed towards, for various

reasons, limited buy-in from educators and counselors. The strongest indicator that there is

limited buy-in for the support of twice-exceptional and neurodiverse learners was the data on the

knowledge-base of teachers as perceived by leadership. The results indicated that leadership

perceived staff's knowledge of neurodiversity lies between limited and developing. This is also

the case for knowledge and understanding of twice-exceptionality and giftedness. The apparent

limitation found within the knowledge-base of staff indicates that there is a true need for

professional learning opportunities or series that provide staff with the skills and knowledge

development needed on various levels including, identification, instructional strategies, and

programs that support neurodiverse and twice exceptional learners. The results indicated that

professional learning opportunities for staff members in the areas of gifted and

twice-exceptionality were reported to be non-existent or limited. Therefore, the opportunities to

develop knowledge, understanding and use of strategies, and identification are missing, limiting

the staff's cooperation for support programs.

      While examining Case Studies #1 and #2, recommendations for gifted support beyond

the classroom, as well as for mentorship and enrichment programs, fell at an average mean of

3.4. This falls below the level of support leadership indicated for identification of giftedness

which was reported at an average mean of 4.1. In other words, it seems that there is leadership

support for identification practices, yet less leadership support for programs to support

twice-exceptional and neurodiverse learners beyond the classroom. This will limit the degree to

which educators can provide the types of services needed to support these students.

Weaving a Collective Portrait

Revisiting the work of Coleman and Gallagher (2015), it is clear that a collaborative

approach to the continuous coordination of support over time is of great benefit to the learner and

ultimately the stakeholders. Gathering together the expertise, observations, and perspectives of

various stakeholders involved in the learning journey of neurodiversity provides a holistic view

of the learner including the learning needs, social and emotional needs, gifts and talents, and

asynchronous tendencies of the twice-exceptional individual.

Collaborative understanding of the whole child with all perspectives taken into

account. Taking a team approach by intertwining the expertise, experience, and perspectives of

teacher colleagues, counselors, administrators, external clinicians, and parents is integral to

providing an individualized, targeted support system that properly identifies the student's profile

by addressing both their strengths and their areas of need (Coleman & Gallagher, 2015). The data

indicates schools do take a collaborative team approach for the development of identified

neurodiverse students' profiles and support plans with a reported 100% learning support staff

involvement, a 91.7% teacher involvement, a 83.3% administrator involvement, a 83.3%

counselor involvement, a 75% parent involvement, 66.7% external support staff involvement,

and a 66.7% student involvement. Collaborative discussion and involvement, as discussed above,

provides a multi-perspective view of a learner, reducing potential bias and sculpting a clearer

image of the whole child.

Although the results show that a collaborative approach is utilized within the international schools who took part in the survey, it is important to discuss and refer back to the missing puzzle piece of knowledge-base. If all the stakeholders have a low knowledge base of twice-exceptionality and neurodiversity, the question that emerges is: how effective is this collaborative approach? Taking it even further, these collaborative approaches are limited to the students who are identified. This results in learners not having their talents recognized.

The survey results indicated that the leaders participating noted that their schools utilized a collaborative approach for the development of profiles and learning plans for learners who are neurodiverse or twice-exceptional. The three stakeholders attending collaborative meetings included learning support staff, teachers, counselors, and administration. This is indicative of a system that provides support for colleagues. Such a system of incorporating the expertise, experience, and multiple perspectives of campus stakeholders is imperative to providing an individualized, targeted support system that properly identifies the students' learning profiles by addressing both their strengths and their areas of need. The stakeholders that were reported to be involved in these sessions were external support professionals, parents/families, and learners. The concern with regards to these results is the lack of collaboration with two stakeholders that may provide the greatest insights and need the most support, parents and learners. Reis and Renzulli (2020) noted that parents, with advocacy and planning, may have the ability to improve their child's social development, academic success, and increase the chances for a more accomplished future.

Taking the discussion further, it was reported that time is an ongoing challenge within schools. Therefore, one idea to circumnavigate challenges such as time might be to provide case managers for learners who require support beyond the support neurotypical learners receive in

the classroom. Case managers may provide support to educators and administrators with regards

to organization, consolidation of information, and advocate for learners, educators, and families.

This may be an extreme option for a school due to financial and personnel limitations, however,

it is an idea that may circumnavigate multiple challenges.

Comprehensive road map towards supporting the individual student through their

school journey. In order to address how widely understood the components of a 2e friendly

environment are and how effectively are the strategies and principles used to create them, the

issue of a team approach needs to be considered. The supportive environment for the 2e learner

begins by understanding that the unique individual student's profile should be nurtured through a

team approach where we look "beyond the classroom teachers and enlist the support of others-

parents, counselors, psychologists, educational therapist, and community agency and resources"

(Baum et al., 2017, p. 166). From the responses provided by the leadership of the international

schools that participated in the study, it was indicated that participation in the development of

learning plans and profiles by external support professionals was 67%. As mentioned by

Coleman and Gallagher (2015), a collaborative approach, including external specialists, provides

an important strategy to accurately develop the profile of the twice-exceptional learner as well as

to accurately develop a plan of support. The lower rates of participation from external support

professionals as compared to other stakeholders, may be indicative of a few issues. The first may

be that the community where the international school is located may not offer educational

specialists beyond the school's campus. Secondly, it may point towards a misplaced focus or

priority on the part of the school. As mentioned earlier, there are areas in which schools require

growth and development, especially with regards to knowledge of the concepts, identification,

and strategies. With these areas lacking development, schools and other stakeholders may not

identify the need for external specialists for support.

Expanding support and providing opportunities beyond the classroom and the school campus allows neurodiverse and twice-exceptional learners to follow and broaden interests and gifts through the mentorship of professionals. The results indicated that leadership fell between agreement and neutrality when recommending mentorship and enrichment programs for neurodiverse or twice-exceptional learners. This is a potentially positive result, indicating that leadership may be open to this type of strategy in order to support these unique learners. It was, however, reported by learnership that their staff's level of implementation of mentorship or enrichment programs were limited. This indicates that the schools that took part in the survey are not yet in a position to offer mentorship or enrichment programs to support neurodiverse and twice-exceptional learners. These results may reflect other factors unique to each school. Again, it is important to remember the locations of these international schools. There may be differences between instructional language and local language, limited access to resources, and there is the possibility that there may be security issues in the community. These are all potential hindrances for schools to develop external mentorship and enrichment programs.

Implications for Future Research

This research study embraced a 3-phase process that yielded a detailed and comprehensive needs assessment survey which aimed to provide a macro view of the international school community and their current abilities to support neurodiverse and twice-exceptional learners. Although the aim was to obtain a broad view and support the whole international community to move forward, the response to the needs assessment survey yielded far fewer completed surveys than expected by the researchers providing limited data that is not representative of the global international school community.

There are several potential reasons for the low response and completion rate. Holtom et al. (2022) analyzed the reported response rates of 1,014 surveys that were reported in 703 articles. These articles were taken from 17 different journals that were published between the years 2010 to 2020. It was reported that there was an increase of survey response rates between 2005 and 2020. Holtom et al. (2022) reported the following survey response rates from their analyses; 48% in 2005 to 53% in 2010 to 56% in 2015 and 68% in 2020 (Holtom et al., 2022). In the case of this research study, the response rate was below what was reported by the Holtom et al. (2022) study. Holtom et al. (2022) noted that three variables predicted response rate changes; research motivation, research design, and participant motivation.

The length of the survey most likely had an impact upon the completion rate. The survey contains 127 items with a combination of multiple choice and short answer questions. The estimated time to complete the survey was approximately 30 minutes. It was found that approximately half of the participants who began the survey failed to complete more than half of the survey's 97 questions. As professionals, time is always of the utmost importance and carving out roughly 30 minutes for a survey may be too much for an initiative that is not personally embraced.

Another contributing factor may have been the survey topic. The survey's topic of neurodiversity and twice-exceptionality was of a very specific or technical nature. These concepts or topics may be new to participants and new to the context of their institutions. Therefore, engaging in a lengthy survey based upon an unfamiliar concept may have caused fatigue and a drop in survey completion rates.

A final contributing factor may have been participant buy-in. Considering the length of the survey and the highly specific topic, participants would be required to dedicate time and

effort to complete the survey. Therefore, without a personal connection to the survey topic, participants may have had less commitment to complete the survey in its entirety.

A respondent provided feedback regarding their experience completing the survey. The participant described the experience as eye opening, allowing them to gain insights into the current practices and priorities of their school. The respondent described developing an awareness of areas in which they could grow and develop to better understand and support twice-exceptional and neurodiverse learners. This particular respondent indicated that the survey would be of great value for a school's pedagogical leadership team who are committed to the process of change and growth.

A second respondent echoed the sentiments of the first participant to provide feedback. The response was,

> I did have a chance to fill out the survey and found the reflection and engagement in the case studies to be a helpful exercise as we build inclusion at [this school]. Thank you for your important work documenting our reality…I look forward to the evolution of inclusive communities and transformational learning.

This further indicated the value of the survey tool for use by individual schools and their leadership.

Therefore, based upon the feedback and the researchers' reflections and examination of the results, it is recommended by the researchers that this survey be applied to specific schools who are ready to undertake the process of change in order to increase their support for their own twice-exceptional and neurodiverse students within their school community. It is also recommended that the survey be applied in an interview format for each individual member of the school's pedagogical leadership who will take part in the planning and organization of the

change implementation. The interview process allows for a personalized approach and the individual interviews allow for multiple perspectives to be gained and acknowledged.

Applying the survey within a specific school will allow a school's pedagogical leadership team to develop a needs assessment of their school's learning community to determine where they are in their support of twice-exceptional and neurodiverse students. The results of the survey will allow school administrators to engage in conversations based upon the perceptions that come out of the survey and begin to strategically develop plans for growth, change, and forward thinking.

This research study yielded positive results towards bringing the international school community forward in the support of neurodiverse learners by identifying key common needs found within international schools and providing a tool to further identify them within individual schools themselves. However, the researchers consider it important to continue to pursue future research on a global scale with the needs assessment tool developed by this study. With the aim to attain a larger sample through which deeper statistical analysis could be conducted that is representative of different regions of the world, as well as the whole international school community, future research could provide greater insight into the macro view of the needs for bringing the international school community forward in this field.

Limitations

The importance of reporting the limitations of a study in a transparent manner was stressed by Hill (2012). Complying with the delineated methodology comprising three distinct phases that combined qualitative interviews, a review process in order to refine the survey, and a researcher-developed exploratory needs assessment survey. There are limitations to the study that need to be acknowledged: sampling procedures, limited sample size, and interpretation validity.

The use of convenience sampling by the researchers was chosen for all three phases of the study in order to select participants based upon specific knowledge and experience. In reference to Phases One and Two, the participants, due to their knowledge and experience were able to provide specific information, responses, and feedback that was relevant and meaningful to the study. For purposes of this study, the use of convenience sampling helped to capture the perceptions, beliefs, and practices of school directors in these international schools.

The second limitation was based upon researcher interpretation. In Phases One, Two, and Three the researchers interpreted and analyzed qualitative data. As stated by Schielke et al. (2009), as cited by Hill (2012) "...if multiple people who have examined the data independently subsequently agree on an interpretation, researchers may have more confidence that other similar individuals would also agree on that interpretation" (Consensus section, para. 3). Thus, in order to reduce this particular threat of researcher interpretation, the researchers followed the CQR steps as detailed in the methodology which included piloting, transcription of interviews, within-case analysis and cross analysis including peer-debriefing, verifications, and revisions based upon the verification process.

The third and final limitation of the study was the small sample sizes utilized in the three phases of the study. Phase One consisted of four leaders in the field of international education who took part in qualitative interviews. Phase Two sought the expertise of four professionals, two in the field of international education and two experts in twice-exceptionality. Finally, in Phase Three, the participants consisted of 29 Directors of Learning from around the globe. Regarding Phase Three of the study, it must be addressed that the sample size of 29 respondents was lower than expected by the researchers. Due to the limited number of respondents, the researchers were unable to collect data that were representative of the international school

community. Although the data were not large enough to be representative, it is important to note

that the data gathered from the responses of the 29 participants provided the researchers with

enough information and feedback to prompt discussions and further investigations using the

exploratory needs assessment survey developed across Phases One and Two. Thus, along with

the insights provided by the 29 respondents, the researchers have developed a survey tool that

can be used to assess current practices and professional learning needs of staff as they become

more supportive of neurodiverse and twice-exceptional learners.

To attempt to ensure trustworthiness, the researchers distributed the exploratory needs

assessment survey to four experts, two in the field of twice-exceptionality and two from the field

of international education, in Phase Two of the study. The four expert participants provided

feedback to the researchers on various aspects of the survey including content, structure, layout,

language choices, terminology, answer choices, and potential bias. The survey was also initially

distributed to seven regions within the international community to obtain greater representation

and viewpoints. Qualitative data were coded using a peer-debriefing process increasing the

credibility of this study. Additional research is needed to add to the confirmability of the

findings, hence its trustworthiness, in order to amplify the extent to which the results can be

generalized from the sites to other international schools addressing the external validity of the

survey (Fraenkel et al., 2012, p. 108).

Summary

The results of this study guided a discussion through the areas of need identified within

the participating international schools towards providing support for neurodiverse and

twice-exceptional learners. The need for leveling up and upgrading schools' current mindsets

and models were discussed. A shift away from a fix-it model, where there is a tendency to

perceive twice-exceptional learners as challenging, where processes and programs in place are founded on a deficit model, and where identification and support system protocols are limited is needed in order to create the appropriate environments within the international schools for neurodiverse learners to thrive.

The results from this study highlighted the current missing puzzle pieces within the international school community to serve the neurodiverse and twice-exceptional learners. The data supported a lack of knowledge of key definitions, identification, needs, and support systems of neurodiverse and twice-exceptional learners within stakeholders of the participating international schools. This, combined with insufficient teacher time and a lack of systemic prioritization of key supportive elements, limits the development of neurodiverse and twice-exceptional learners within schools. This research pointed towards the need for targeted professional learning, for the education of the protocols and systems in place, and for continual knowledge-based support in order to ensure implementation and pave the way for creating supportive learning environments for twice-exceptional and neurodiverse learners.

Cultural bias and perceptions posed a minimal to limited challenge for international schools represented within the study. It was concluded that it is the role of pedagogical leadership to promote and model best practices, while developing knowledge to ensure there is a cultivation of a culture and ethos that embraces neurodiversity and twice-exceptionality.

Importance lies in the collaborative efforts and insights from the multiple stakeholders engaged in the educational journeys of twice-exceptional and neurodiverse learners to ensure that they are seen and supported appropriately. It is the dedication and involvement from all stakeholders that is imperative to the success of twice-exceptional and neurodiverse learners. Leadership must gain cooperation for more than just the identification of students, but the

development of recognizable talent in young people. Through these changes, leadership can

alleviate several identified challenges faced by teachers. Respondents indicated that teachers

believe that time is a factor that prevents them from serving this unique population of students.

Considering the responses, the researchers recommended the addition of case managers to

provide support to educators and administrators with regards to organization, consolidation of

information, and advocate for learners, educators, and families. There are, of course, implications

to such a strategy including financial and personnel considerations.

It is clear that a collaborative approach to the continuous coordination of support over

time is of great benefit to the learner and, ultimately, the stakeholders. Although the results of the

study indicate a collaborative approach is utilized within the international schools who took part

in the survey, it is important to discuss and refer back to the missing puzzle piece of the

knowledge base. If all the stakeholders have a low knowledge of twice-exceptionality and

neurodiversity, the questions that emerge are: how effective is this collaborative approach and are

all learners who require this collaborative profile and support plan being included?

In conclusion, it can be said that the results of this research study yielded interesting

results that supported the researchers in beginning to develop a macroview of the needs of

international schools toward a journey that will lead toward greater recognition and support of

twice-exceptional and neurodiverse learners. The study yielded a survey tool which itself has

proven to be one of the more important and powerful results of the study. The feedback from

respondents indicated that the power of the survey lies with the individuals and schools using it.

Those who are ready to embark on the journey towards greater knowledge, identification, and

support are poised to be more empowered and invested in the process of reflection and

recognition of the perceptions, systems, and current practices within their school and community.

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Appendix A

Email to Participants
Phase 1

Dear….

Allow us to introduce ourselves. We, Graciela Livas and Brooks Lüscher, are two doctoral candidates at Bridges Graduate School of Cognitive Diversity in Education. We are conducting research that aims to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. We, the researchers plan to recognize perceptions, knowledge, and practice, analyzing common needs throughout diverse international schools, and providing a future research discussion to guide schools forward as they navigate support for their 2e populations.

We are requesting your support through your participation in an interview. The interview will last approximately sixty minutes, will be held via an online video call, and will be recorded. The interviewer will provide a series of questions that will ask for your perceptions, knowledge, and practice. All of the responses will be held confidentially and pseudonyms will be assigned in place of all names and locations. The participant names will be held on a secure, password-protected link. At any point, you may terminate the interview and all recordings and data will be destroyed. The information gained from this interview will be used to develop a quantitative needs assessment survey that will support international schools to grow in their support of neurodiverse and 2e learners.

In order to proceed, we request you read and sign the consent form at the link provided below.

Consent Form (link)

The link to our online video call is provided below.

Video Call (link)

Thank you for your time and support.

Graciela Livas
Brooks Lüscher

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Appendix B

Bridges Graduate School of Cognitive Diversity in Education

Institutional Review Board for the Protection of Human Subjects

Phase 1-Statement of Informed Consent For Adult Participants

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Title of Study: Bringing it Forward: Identifying International Schools' Needs to Effectively Support 2e Learners

Study Investigator(s): Graciela Livas and Brooks Lüscher
Contact information: graciela.livas@bridges.edu   brooks.luscher@bridges.edu

Faculty Sponsor: Dr. Karen Westberg, Dr. Jann Leppien
Contact information: karen.westberg@bridges.edu   jann.leppien@bridgs.edu

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KEY INFORMATION:

- You are being asked to be in a research study of neurodiversity and twice-exceptionality. As with all research studies, participation is voluntary.
- The purpose of this study is to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.
- A maximum of 57 people will take part in this study. The study is comprised of three Phases. 3 participants will take part in Phase 1, 4 participants in Phase two, and 50 participants in Phase 3. The results will be used for a doctoral dissertation.
- If you agree to take part in Phase 1 of this study, you will be involved for approximately an hour via an online video interview which will be recorded.
- Participants in Phase 1 will be asked to take part in a confidential interview. The interview will last approximately sixty minutes, will be held via an online video call, and be recorded. The interviewer will provide a series of questions that will ask for the interviewee's perceptions, knowledge, and practice. All of the responses will be held confidentially and pseudonyms will be assigned in place of all names and locations. The participant names will be held on a secure, password-protected link. At any point, the participant may terminate the interview and all recordings and data will be destroyed. The information gained from this interview will be used to develop a exploratory needs assessment survey that will support international schools to grow in their support of neurodiverse and 2e learners.
- We believe there are no known risks associated with this research.

- You may not directly benefit from the research; however, we hope that your participation in the study may provide further awareness and support for neurodiverse and twice-exceptional students within the international education community.

INTRODUCTION

You are being asked to be in a research study of neurodiversity and twice-exceptionality. This study is being conducted at Bridges Graduate School of Cognitive Diversity in Education. This study is being conducted by: Graciela Livas and Brooks Lüscher at Bridges Graduate School of Cognitive Diversity in Education.

You were selected as a possible participant because of your role as a leader within an international school.

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:

You will be asked to take part in a confidential interview. The interview will last approximately sixty minutes, will be held via an online video call, and be recorded. The interviewer will provide a series of questions that will ask for the interviewee's perceptions, knowledge, and practice. All of the responses will be held confidentially and pseudonyms will be assigned in place of all names and locations. The participant names will be held on a secure, password-protected link. At any point, the participant may terminate the interview and all recordings and data will be destroyed. The information gained from this interview will be used to develop a exploratory needs assessment survey that will support international schools to grow in their support of neurodiverse and 2e learners.

COMPENSATION/INCENTIVES:

You will not receive compensation.

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.

Research records will be stored securely and only the researcher(s) will have access to the records. All data will be kept within a password-protected laptop by the researchers. All study records, including approved IRB documents, tapes, transcripts, and consent forms, will be

destroyed by deleting after 3 years. Video and audio transcriptions made will be erased as soon as they are transcribed.

We will not keep your research data to use for future research or other purposes. Your name and other information that can directly identify you will be kept secure and stored separately from the research data collected as part of the project.

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 of Cognitive Diversity in Education. 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 researchers(s) conducting this study: Graciela Livas and Brooks Lüscher. If you have questions, **you are encouraged** to contact the researcher(s) at graciela.livas@bridges.edu brooks.luscher@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 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* *If no, I understand that the researcher will take handwritten notes of your participation.*

I agree to be videotaped _____*Yes* _____*No* *If I do not wish to be videotaped, I will inform the researcher, who will instead audio record your participation.*

Signature of Researcher(s):_____ Date: _____

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

Appendix C

Email to Participants
Phase 2

Dear….

Allow us to introduce ourselves. We, Graciela Livas and Brooks Lüscher, are two doctoral candidates at Bridges Graduate School of Cognitive Diversity in Education. We are conducting research that aims to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. We, the researchers plan to recognize perceptions, knowledge, and practice, analyzing common needs throughout diverse international schools, and providing a future research discussion to guide schools forward as they navigate support for their 2e populations.

We are seeking your expertise to review and provide feedback on a quantitative needs assessment survey regarding its question design, content, order, and overall survey structure. If you are willing and able to participate, we request you read and sign the consent form at the link provided before completing the feedback form. You will find links to the survey and feedback form below.

Consent Form (link)

Survey (link)

Feedback Form (link)

Thank you for your time and support.

Graciela Livas
Brooks Lüscher

Appendix D

Bridges Graduate School of Cognitive Diversity in Education

Institutional Review Board for the Protection of Human Subjects

Phase 2-Statement of Informed Consent For Adult Participants

Title of Study: Bringing it Forward: Identifying International Schools' Needs to Effectively Support 2e Learners

Study Investigator(s): Graciela Livas and Brooks Lüscher
Contact information: graciela.livas@bridges.edu   brooks.luscher@bridges.edu

Faculty Sponsor: Dr. Karen Westberg, Dr. Jann Leppien
Contact information: karen.westberg@bridges.edu   jann.leppien@bridgs.edu

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KEY INFORMATION:

- You are being asked to be in a research study of neurodiversity and twice-exceptionality. As with all research studies, participation is voluntary.
- The purpose of this study is to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.
- A maximum of 57 people will take part in this study. The study is comprised of three Phases. 3 participants will take part in Phase 1, 4 participants in Phase two, and 50 participants in Phase 3. The results will be used for a doctoral dissertation.
- If you agree to take part in Phase 2 of this study, you will be involved in a review process of a quantitative needs assessment survey.
- Participants in Phase 2 will be asked to take part in a review process of a quantitative needs assessment survey. The process will last approximately 20-30 minutes and will consist of reviewing a draft of a quantitative needs assessment survey and completing a feedback form. All of the responses will be held confidentially and pseudonyms will be assigned in place of all names. The participant names will be held on a secure, password-protected link. At any point, the participant may terminate the review process and data will be destroyed. The information gained from this review process will be used to refine a quantitative needs assessment survey that will support international schools to grow in their support of neurodiverse and 2e learners.
- We believe there are no known risks associated with this research.
- You may not directly benefit from the research; however, we hope that your participation in the study may provide further awareness and support for

neurodiverse and twice-exceptional students within the international education community.

INTRODUCTION

You are being asked to be in a research study of neurodiversity and twice-exceptionality. This study is being conducted at Bridges Graduate School of Cognitive Diversity in Education. This study is being conducted by: Graciela Livas and Brooks Lüscher at Bridges Graduate School of Cognitive Diversity in Education.

You were selected as a possible participant because of your role as an expert in either neurodiversity and twice-exceptionality, or international education.

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:

You will be asked to take part in a review process of a quantitative needs assessment survey. The process will last approximately 20-30 minutes and will consist of reviewing a draft of a quantitative needs assessment survey and completing a feedback form. All of the responses will be held confidentially and pseudonyms will be assigned in place of all names. The participant names will be held on a secure, password-protected link. At any point, you may terminate the review process and data will be destroyed. The information gained from this review process will be used to refine a quantitative needs assessment survey that will support international schools to grow in their support of neurodiverse and 2e learners.

COMPENSATION/INCENTIVES:

You will not receive compensation.

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.

Research records will be stored securely and only the researcher(s) will have access to the records. All data will be kept within a password-protected laptop by the researchers. All study records, including approved IRB documents, tapes, transcripts, and consent forms, will be destroyed by deleting after 3 years.

We will not keep your research data to use for future research or other purposes. Your name and other information that can directly identify you will be kept secure and stored separately from the research data collected as part of the project.

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 of Cognitive Diversity in Education. 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 researchers(s) conducting this study: Graciela Livas and Brooks Lüscher. If you have questions, **you are encouraged** to contact the researcher(s) at graciela.livas@bridges.edu brooks.luscher@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 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: _____

Signature of Researcher(s):_____ Date: _____

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

Appendix E

Email to Regional Heads of International School Associations

To Whom it May Concern,

Allow us to introduce ourselves. We, Graciela Livas and Brooks Lüscher, are two doctoral candidates at Bridges Graduate School of Cognitive Diversity in Education. We are conducting research that aims to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. We, the researchers, aim to recognize perceptions, knowledge, and practice, analyzing common needs throughout diverse international schools, and providing a future research discussion to guide schools forward as they navigate support for their 2e populations.

We are requesting your support through the distribution of the attached letter to the Directors of Learning, or similar school leaders, who guide curriculum and instruction within your regional schools. All participants will respond anonymously and communicate directly with us, as the researchers, if and when needed. The letter contains links to both a consent form and a quantitative needs assessment survey.

If I have questions or would like a copy of the results, please contact the researchers at:

graciela.livas@bridges.edu
brooks.luscher@bridges.edu

Thank you for your support and cooperation.

Graciela Livas
Brooks Lüscher

Appendix F
Letter to Participants
Phase 3

Dear….

Allow us to introduce ourselves. We, Graciela Livas and Brooks Lüscher, are two doctoral candidates at Bridges Graduate School of Cognitive Diversity in Education. We are conducting research that aims to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. We, the researchers plan to recognize perceptions, knowledge, and practice, analyzing common needs throughout diverse international schools, and providing a future research discussion to guide schools forward as they navigate support for their 2e populations.

We are requesting your support through your participation on a quantitative needs assessment survey. You will be asked to take part in an anonymous survey. The survey will take approximately 30 minutes to complete. It will provide a series of questions that will ask for your perceptions, knowledge, and practice. All of the responses will be held anonymously. At any point, you may terminate participation and data will be destroyed. The information gained from this survey will be used to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.

If you are willing and able to participate, we request you read and sign the consent form at the link provided before completing the survey. You will find the link survey and consent form below.

Consent Form (link)

Survey (link)

Thank you for your time and support.

Graciela Livas
Brooks Lüscher

Appendix G

Bridges Graduate School of Cognitive Diversity in Education

Institutional Review Board for the Protection of Human Subjects

Phase 3-Statement of Informed Consent For Adult Participants

Title of Study: Bringing it Forward: Identifying International Schools' Needs to Effectively Support 2e Learners

Study Investigator(s): Graciela Livas and Brooks Lüscher
Contact information: graciela.livas@bridges.edu   brooks.luscher@bridges.edu

Faculty Sponsor: Dr. Karen Westberg, Dr. Jann Leppien
Contact information: karen.westberg@bridges.edu   jann.leppien@bridgs.edu

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KEY INFORMATION:

- You are being asked to be in a research study of neurodiversity and twice-exceptionality. As with all research studies, participation is voluntary.
- The purpose of this study is to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.
- A maximum of 57 people will take part in this study. The study is comprised of three Phases. 3 participants will take part in Phase 1, 4 participants in Phase two, and 50 participants in Phase 3. The results will be used for a doctoral dissertation.
- If you agree to take part in Phase 3 of this study, you will be involved for approximately 30 minutes via an online quantitative needs assessment survey.
- Participants in Phase 3 will be asked to take part in an anonymous survey. The survey will take approximately 30 minutes to complete. The survey will provide a series of questions that will ask for the participant's perceptions, knowledge, and practice. All of the responses will be held anonymously. At any point, the participant may terminate participation and data will be destroyed. The information gained from this survey will be used to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.
- We believe there are no known risks associated with this research.
- You may not directly benefit from the research; however, we hope that your participation in the study may provide further awareness and support for

> neurodiverse and twice-exceptional students within the international education community.

INTRODUCTION

You are being asked to be in a research study of neurodiversity and twice-exceptionality. This study is being conducted at Bridges Graduate School of Cognitive Diversity in Education. This study is being conducted by: Graciela Livas and Brooks Lüscher at Bridges Graduate School of Cognitive Diversity in Education.

You were selected as a possible participant because of your role as a Director of Learning within an international school, responsible for guiding curriculum and learning.

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:

You will be asked to take part in an anonymous survey. The survey will take approximately 30 minutes to complete. The survey will provide a series of questions that will ask for the participant's perceptions, knowledge, and practice. All of the responses will be held anonymously. At any point, you may terminate participation and data will be destroyed. The information gained from this survey will be used to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.

COMPENSATION/INCENTIVES:

You will not receive compensation.

CONFIDENTIALITY:

The records of this study will be kept private and your anonymity will be protected. In any sort of report the researcher(s) might publish, no identifying information will be included.

Research records will be stored securely and only the researcher(s) will have access to the records. All data will be kept within a password-protected laptop by the researchers. All study records, including approved IRB documents, tapes, transcripts, and consent forms, will be destroyed by deleting after 3 years.

We will not keep your research data to use for future research or other purposes. Your name and other information that can directly identify you will be kept secure and stored separately from the research data collected as part of the project.

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 of Cognitive Diversity in Education. 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 researchers(s) conducting this study: Graciela Livas and Brooks Lüscher. If you have questions, **you are encouraged** to contact the researcher(s) at graciela.livas@bridges.edu brooks.luscher@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 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: _____

Signature of Researcher(s):_____ Date: _____

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

Appendix H

Needs Assessment Survey for International Schools on Neurodiverse and Twice-Exceptional Students' Support Welcome. Thank you for participating in our survey.

Please read the information below and click "yes" to provide your voluntary consent to participate in the surve*y*.

Dear Participants,

We are conducting a study to investigate the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice exceptional students' holistic growth. This study is being conducted by Graciela Livas and Brooks Lüscher at Bridges Graduate School of Cognitive Diversity in Education in Studio City, California, USA.

Background Information The aim of the study is to recognize perceptions, knowledge, and practices; analyzing common needs throughout diverse international schools, and providing a future research discussion to
guide schools forward as they navigate support for their twice-exceptional populations.

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: You will be asked to take part in a confidential needs assessment survey. The survey will take approximately 30 minutes to complete and contains 5 sections. Please ensure you click next to proceed to the following pages.

The survey will provide a series of questions that will ask for the participants' perceptions, knowledge, and practices related to neurodiversity and twice-exceptionality. All of the responses are anonymous as we have disengaged the IP addresses. At any point, you may terminate participation and data will be destroyed. The information gained from this survey will be used to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth.

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 of Cognitive Diversity in Education. 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 researchers(s) conducting this study: Graciela Livas and Brooks Lüscher. If you have questions, you are encouraged to contact the researcher(s) at graciela.livas@bridges.edu brooks.luscher@bridges.edu. The advisors to the researchers are Dr. Karen Westberg karen.westberg@bridges.edu and Dr. Jann Leppien jann.leppien@bridgs.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.
1. Electronic Consent: Clicking on the "yes" button below indicates that you - have read the above information - are 18 years of age or older. - have read and understood the above information. - voluntarily consent to participate in the study.

- Yes

Needs Assessment Survey for International Schools on Neurodiverse and Twice-Exceptional Students' Support

Demographics

2. Please indicate the region in which your school is located.

- Europe
- Middle East
- Asia
- Oceania
- Africa
- South America
- North America
- Central America

3. Please indicate the number of students enrolled in your school.

- <100

- 101-500
- 501-1,000
- 1,001-1,500
- 1,501-2,000
- >2,000

4. Please indicate how many years your school has been established.

- <10
- 11-20
- 21-30
- 37-40+

5. Please indicate your teacher-to-student ratio,

- 1:5-10
- 1:11-15
- 1:16-20
- 1: 21-25+

6. Please indicate your support staff to student ratio. (For the purpose of this study support staff is defined as specialized professionals hired by a school to support student and teacher learning such as learning support specialists, English as an additional language specialists, counselors, and on-staff therapists.)

- 1:10-20
- 1:21-30
- 1:31-40
- 1:41-50+

7. Please indicate your local hire teacher to expatriate teacher ratio.

- 0% local 100% expatriate
- 10% local 90% expatriate
- 20% local 80% expatriate

- 30% local 70% expatriate
- 40% local 60% expatriate
- 50% local 50% expatriate
- 60% local 40% expatriate
- 70% local 30% expatriate
- 80% local 20% expatriate
- 90% local 10% expatriate
- 100% local 0% expatriate

Needs Assessment Survey for International Schools on Neurodiverse and Twice-Exceptional Students' Support

Section 1

Considering the definitions provided, please answer each item by checking which response best describes your understanding according to the following scale:

No previous knowledge: I am not familiar with the terms.

Limited knowledge: I am familiar with the terminology, but do not have a complete understanding

Developing knowledge: I am familiar with the terms, but have a narrow scope of understanding.

Moderate knowledge: I have had professional learning and can apply my knowledge.

Expert knowledge: I have had professional learning and can teach and support others in these concepts.

Neurodiversity: This term refers to the whole of human mental or psychological neurological structures or behaviors, seen as not necessarily problematic, but as alternate, acceptable forms of human biology" (Barrett, 2004).

8. Indicate the level of your knowledge and understanding of neurodiversity.

- No previous knowledge
- Limited knowledge
- Developing knowledge

- Moderate knowledge
- Expert knowledge

9. Indicate what you perceive as the staffs' level of the knowledge and understanding of neurodiversity within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Twice Exceptional (2e): This term describes a "student who is both gifted and disabled. These students may also be referred to as having dual exceptionalities or as being gifted with learning disabilities (GT/LD). This also applies to students who are gifted with ADHD or gifted with autism" (National Association for Gifted Children, nd.).

10. Indicate the level of your knowledge and understanding of twice- exceptionality.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

11. Indicate what you perceive as the staffs' level of the knowledge and understanding of twice-exceptionality within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Gifted: This term refers to students with gifts and talents who perform-or have the capability to perform-at higher levels compared to others of the same age, experience, and

environment in one or more domains. They require modification(s) to their educational experience(s) to learn and realize their potential. Student with gifts and talents:

• Come from all racial, ethnic, and cultural populations, as well as all economic strata.

• Require sufficient access to appropriate learning opportunities to realize their potential.

    • Can have learning and processing disorders that require specialized intervention and accommodation.

•   Need support and guidance to develop socially and emotionally as well as in their areas of talent.

    • Require varied services based on their changing needs" (National Association for Gifted Children, 2019).

12. Indicate the level of your knowledge and understanding of giftedness.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

13. Indicate what you perceive as the staffs' level of the knowledge and understanding of giftedness within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Learning Disabilities: This term refers to "any of various conditions with a neurological basis that are marked by substantial deficits in acquiring certain scholastic or academic skills, particularly those associated with written or expressive language. Learning

disabilities include learning problems that result from perceptual disabilities, brain injury, and minimal brain dysfunction but exclude those that result from visual impairment or hearing loss; intellectual disability; emotional disturbance; or environmental, cultural, or economic factors" *(*American Psychological Association, 2020).

14. Indicate the level of your knowledge and understanding of learning disabilities.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

15. Indicate what you perceive as the staffs' level of the knowledge and understanding of learning disabilities within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Strength-based: This term refers to "curricular and instructional approaches that are differentiated to align with students' cognitive styles, learning preferences, and profiles of intelligences" (Baum et al., 2014, p. 312).

16. Indicate the level of your knowledge and understanding of strength based practices.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

17. Indicate what you perceive as the staffs' level of the knowledge and understanding of strength-based practices within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Talent Development: This term refers to "encouragement and support of identified talents and abilities that are nurtured in their own right-neither as an opening for remediation nor as a reward or motivator for achievement" (Baum et al., 2014, p. 312).

18. Indicate the level of your knowledge and understanding of talent development.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

19. Indicate what you perceive as the staffs' level of the knowledge and understanding of talent development within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Talent-focused: This term refers to a focus that "involves ongoing identification and recognition of a student's advanced abilities as well as budding interests, along with explicit options for exploring and expressing those abilities and interests within and outside the curriculum. Talent-focus is used as an overarching term that includes talent development (Baum et al., 2014, p. 312).

20. Indicate the level of your knowledge and understanding of talent-focused practices.

- No previous knowledge
- Limited knowledge

- Developing knowledge
- Moderate knowledge
- Expert knowledge

21. Indicate what you perceive as the staffs' level of the knowledge and understanding of talent-focused practices within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Dual Differentiation: This term refers to the fulcrum that maintains the delicate balance between students' strengths and limitations. It must be challenging enough to engage these students in their learning, provide alternate ways of accessing information, and offer options for communication that tap into their unique talents" (Baum et al., 2001, p. 185).

22. Indicate the level of your knowledge and understanding of dual differentiation practices.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

23. Indicate what you perceive as the staffs' level of the knowledge and understanding of dual differentiation practices within your school.

- No previous knowledge
- Limited knowledge
- Developing knowledge
- Moderate knowledge
- Expert knowledge

Considering the definitions above, please respond to the following
questions:

24. How would educators in your school describe students who are neurodiverse?

25. How would educators in your school describe students who are twice-exceptional?

**Needs Assessment Survey for International Schools on Neurodiverse and
Twice-Exceptional Students' Support**

Section 2

Case Study 1

George 7 Years Old – 2nd Grade

In school: George is a seven-year-old child in 2nd grade. He is a good friend to his classmates
and often volunteers to help them with their work (even when he has not finished his own).
George is a high-level thinker and demonstrates extensive knowledge in specific interest areas.
He loves to ask or answer the "why" or the "what if" questions about most subjects, but
particularly for science related themes. He has a passion for investigating UFOs and
extraterrestrial beings. He has daily stories to share with the class about the most recent UFO
sightings or new discoveries about life on other planets. George's teachers report extreme
difficulty with his ability to pay attention in class, particularly when doing large-group
instruction or during less-structured activities (independent work time). During these times,
George will look out the window, fidget with anything available, play with his clothing, dig
through his desk, etc. He has great difficulty finishing assignments and staying on-task for more
than a few minutes at a time which causes great frustration and anxiety. He becomes frustrated
when he sees his peers are finished with their work and he is not; he becomes anxious if he
knows he'll have to stay in during recess or lunch to complete an assignment. George's
concentration is greatly improved when he is working in small cooperative groups (no more than
three students) or with individual teacher attention. George can't seem to keep up with his
belongings. Although this may be typical for many 2nd graders just learning these skills, for
George it is much more severe. He loses clothing, books, papers, and homework. Just about
anything given to George is lost during the day.

At home: George's parents are committed to helping their son but often become very frustrated with him. They report having to repeat requests or demands several times before he acknowledges that he has heard them. George's mother said, "It is almost as if he is off in his own little world and never heard a word I said. George forgets his homework (or jacket, lunchbox, notes, etc.) in school and needs commands or requests repeated several times. George's parents are worried that his self-esteem is being diminished as he becomes more a*ware* of his challenges.

In his own words: When asked what he sees as his biggest challenge, George said, "I'm just stupid. .. I forget everything and never finish anything!" When asked what he sees as his strengths, his response was, "Nothing. I am not good at anything."

Taken and adapted from: Colorado Department of Education (2009). Twice-Exceptional Students Gifted Students with Disabilities. Level 1: An Introductory Resource Book (2nd ed.).

Considering the hypothetical case study provided above, please answer each item by indicating your agreement level with the recommendations suggested:

Strongly disagree: I feel this recommendation would be detrimental.

Disagree: I feel this recommendation is unnecessary.

Neutral: I am undecided, unsure, or consider it irrelevant.

Agree: I feel this recommendation is appropriate.

Strongly agree: I feel this recommendation is necessary and beneficial.

26. I would recommend that the student be tested to identify areas of disabilities.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

27. I would recommend that the student be tested to identify areas of giftedness.

- Strongly disagree

- Disagree
- Neutral
- Agree
- Strongly agree

28. I would recommend that the student be offered alternate assessments tasks.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

29. I would recommend that the student be offered personalized learning plans to access information and benefit learning.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

30. I would recommend that the student be offered a personalized learning curriculum to meet the student's individual needs. (For the purpose of this study, personalized learning curriculum refers to a tailored curriculum to meet the individual learning needs of a student through the use of techniques such as curriculum compacting, advanced curriculum, or modified lower grade curriculum.)

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

31. I would recommend that the student be considered for gifted support beyond the classroom.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

32. I would recommend that the student be supported in the classroom using dually differentiated strategies.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

33. I would recommend that the student be placed in a mentorship or enrichment program aligned with his talent.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Considering the hypothetical case study provided above, please answer each item by indicating your perceived staff's level of application:

Never: This practice is never applied.

Rarely: This practice is applied by a few teachers in a few cases.

Sometimes: This practice is applied by some teachers in some cases.

Often: This practice is regularly applied by most teachers.

Always: This practice is consistently applied and considered a school-wide common practice.

34. Indicate what you perceive as your staff's ability to modify assessment tasks for George if he was a student in your school.

- Ne*ve*r
- Rarely
- Sometimes
- Often
- Always

35. Indicate what you perceive as your staff's ability to personalize assessment tasks for George if he was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

36. Indicate what you perceive as your staff's ability to modify lesson plans for George if he was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

37. Indicate what you perceive as your staff's level ability to personalize lesson plans to include alternate methods of accessing information and instruction from teachers targeting George's strengths if he was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Alwa*y*s

38. Indicate what you perceive as your staff's ability to modify curriculum for George if he was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Al*w*ays

39. Indicate what you perceive as your staff's ability to personalize curriculum plans for George if he was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

40. Indicate what you perceive as your staff's ability to use dually differentiated strategies for George if he was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

41. Indicate what you perceive as your staff's ability to provide mentorship or enrichment programs that align with George's talents.

- Never
- Rarely
- Sometimes
- Often
- Always

Considering the case study above, please respond to the following questions in your own

words:

42. Describe the classroom strategies that would be implemented by your teachers for a student like George.

43. Describe the school support programs currently in place in your school that would support a student like George.

44. Describe the policies and procedures in place within your school to potentially identify George as a twice-exceptional student.

Case Study 2

Maya 13 Years Old – 8th Grade

In school: Maya has a strong desire to be successful in school. Teachers describe her as having many good ideas. She is polite, respectful, and enjoys reading. Maya seems to enjoy school, but sometimes gets anxious. She has difficulty meeting the expectations in a general classroom setting. Concerns include difficulty following directions, remembering assignments, and struggling with work completion. She is sometimes neglectful, forgetful, and very disorganized. Difficulty with organization is evident by how she struggles to keep her binder organized, locate assignments, and keep track of due dates. It also takes Maya a significant amount of time just to organize her thoughts. This need for extra time for understanding and processing information is very evident. In the classroom, she often does not understand what is expected. Maya's struggle with understanding directions negatively impacts her completion of assignments. A teacher noted that frequent comprehension checks have been helpful.

At home: Mom describes Maya as brilliant, charming, attractive, insightful, and a hard worker. She is talented in music and plays four instruments. She is first chair in her school band. Primary concerns include: disorganization, poor grades, and misunderstanding information. She seems unmotivated and doesn't seem to make the connection between effort and poor grades. Lack of

work completion and difficulty turning in completed work are the main causes of poor grades. Maya is very emotional (cries every day), overly sensitive, and frequently "gets ill" when an assignment is due. She struggled with gross and fine motor coordination from an early age. She did not learn how to ride a bike until she was nine years old, and her handwriting continues to be extremely difficult to read. She has a history of severe allergies and sinus infections. As a result she missed an entire month of school last year.

In her own words: Overall, Maya describes this year as very frustrating. She has a strong desire to be successful in school, and is frustrated with how hard school has become for her, because she knows she is capable of earning As in her classes. Primary concerns at the moment include world events she sees on the news. "There is scary stuff happening like SARS, terrorism, and war," she said. Additionally, she admitted to being worried about her grades, but stated that she works very hard. Maya thinks that her teachers give too much work and she feels overwhelmed. She reports the work isn't too hard, just too much. She said extra time would be helpful, especially with big long-term research projects. Maya said she does much better seeing directions on assignments instead of just hearing them. She says she tends to collect a lot of research, but it takes her a long time to read and sort the information. When asked why she completes assignments but doesn't hand in the work, she stated that if she didn't understand the assignment or feels it's not up to par, she doesn't hand it in so she can add to it and make changes.

Taken and adapted from: Colorado Department of Education (2009). Twice-Exceptional Students Gifted Students with Disabilities. Level 1: An Introductory Resource Book (2nd ed.).

Considering the hypothetical case study provided above, please answer each item by indicating your agreement level with the recommendations suggested:

Strongly disagree: I feel this recommendation would be detrimental.

Disagree: I feel this recommendation is unnecessary.

Neutral: I am undecided, unsure, or consider it irrelevant.

Agree: I feel this recommendation is appropriate.

Strongly agree: I feel this recommendation is necessary and beneficial.

45. I would recommend that the student be tested to identify areas of disabilities.

- Strongly disagree

- Disagree
- Neutral
- Agree
- Strongly agree

46. I would recommend that the student be tested to identify areas of giftedness.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

47. I would recommend that the student be offered alternate assessment tasks.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

48. I would recommend that the student be offered alternate methods of information in take and instruction from teachers targeting the student's strengths.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

49. I would recommend that the student be offered a personalized learning curriculum to meet the student's individual needs. (For the purpose of this study, personalized learning curriculum refers to a tailored curriculum to meet the individual learning needs of a student through the use of techniques such as curriculum compacting, advanced curriculum, or modified lower grade curriculum.)

- Strongly disagree

- Disagree
- Neutral
- Agree
- Strongly agree

50. I would recommend that the student be considered for gifted support beyond the classroom.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

51. I would recommend that the student be supported in the classroom using dually differentiated strategies.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

52. I would recommend that the student be placed in a mentorship or enrichment program aligned with her talent.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Considering the hypothetical case study provided above, please answer each item by indicating your perceived staff's level of application:

Never: This practice is never applied.

Rarely: This practice is applied by a few teachers in a few cases.

Sometimes: This practice is applied by some teachers in some cases.

Often: This practice is regularly applied by most teachers.

Always: This practice is consistently applied and considered a school-wide common practice.

53. Indicate what you perceive as your staffs' ability to modify assessment tasks for Maya if she was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

54. Indicate what you perceive as your staff's ability to personalize assessment tasks for Maya if she was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

55. Indicate what you perceive as your staff's ability to modify lesson plans for Maya if she was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

56. Indicate what you perceive as your staff's ability to personalize lesson plans

including alternate methods for accessing information and instruction from teachers targeting Maya's strengths.

- Never
- Rarely
- Sometimes
- Often
- Alwa*y*s

57. Indicate what you perceive as your staff's ability to modify curriculum for Maya if she was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Alw*a*ys

58. Indicate what you perceive as your staff's ability to personalize curriculum plans for Maya if she was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

59. Indicate what you perceive as your staff's ability to use dually differentiated strategies for Maya if she was a student in your school.

- Never
- Rarely
- Sometimes
- Often
- Always

60. Indicate what you perceive as your staff's ability to provide mentorship or

enrichment programs that align with Maya's talents.

- Never
- Rarely
- Sometimes
- Often
- Always

Considering the case study above, please respond to the following questions in your own words:

61. Describe the classroom strategies that would be implemented by your teachers for a student like Maya.

62. Describe the school support programs currently in place that would support a student like Maya.

63. Describe the policies and procedures in place within your school to potentially identify Maya as a twice-exceptional student.

Needs Assessment Survey for International Schools on Neurodiverse and Twice-Exceptional Students' Support

Section 3

Considering George's and Maya's hypothetical case studies provided earlier, please answer each item by indicating your school's ability to provide support for the recommendations suggested:

None: No support programs exists Limited: Support programs are in place but with

limited scope. **Developin**g: Limited support programs are in place but whole school system-wide services are in the process of being designed, implemented, and/or integrated. **Moderate**: Whole school programs are in place but could be improved. Excellent: Successful and well established whole school programs are in place.

64. My school has a delineated process and protocol for the identification of learning disabilities.

- None
- Limited
- Developing
- Moderate
- Excellent

65. My school has a delineated process and protocol for the identification of giftedness.

- None
- Limited
- Developing
- Moderate
- Excellent

66. My school has a delineated process and protocol for the identification of twice exceptionality.

- None
- Limited
- Developing
- Moderate
- Excellent

67. My school has programs in place additional to the classroom teacher's efforts to support students with learning disabilities.

- None
- Limited
- Developing
- Moderate

- Excellent

68. My school has programs in place additional to the classroom teacher's efforts to support gifted students.

- None
- Limited
- Developing
- Moderate
- Excellent

69. My school has programs in place additional to the classroom teacher's efforts to support twice-exceptional students.

- None
- Limited
- Developing
- Moderate
- Excellent

70. My school's classroom environments support students by integrating intentional social emotional instruction.

- None
- Limited
- Developing
- Moderate
- Excellent

71. My school has programs in place additional to the classroom teacher's efforts to support neurodiverse and twice-exceptional students' social emotional needs.

- None
- Limited
- Developing
- Moderate
- Excellent

Considering your school's support programs towards neurodiverse and twice-exceptional students, indicate the extent to which your school regards the presented approach:

Never: The school does not use this approach.

Rarely: This approach is applied in a few cases.

Sometimes: This approach is applied in some cases.

Often: This approach is regularly applied in most cases.

Always: This approach is consistently applied and considered a school-wide common practice.

72. My school provides a team approach regarding the development of neurodiverse students' profiles and support plans that takes into account the student's perspective and voice.

- Never
- Rarely
- Sometimes
- Often
- Always

73. My school provides a team approach regarding the development of neurodiverse students' profiles and support plans that takes into account students' strengths.

- Never
- Rarely
- Sometimes
- Often
- Always

74. My school provides a support program for neurodiverse students' parents.

- Never

- Rarely
- Sometimes
- Often
- Always

Please respond to the following questions in your own
words:

75. Describe your school's social emotional support programs currently in place
indicating all internal and external professionals involved.

76. Considering the process currently in place in your school for developing a support
plan for the neurodiverse and twice-exceptional student, describe the internal and
external professionals' involvement in the process.

77. Select all the stakeholders who are involved in the development of neurodiverse
students' profiles and support plans.

- Teachers
- Learning Support Staff
- Counselors
- External Support Professionals
- Administration
- Parents
- Student

**Needs Assessment Survey for International Schools on Neurodiverse and
Twice-Exceptional Students' Support**

Section 4

Based upon the 5-point scale below, select the response that best represents your
school's professional learning opportunities and commitment for teachers in the area

indicated.

None: The school has not committed to the development of teachers and thus teachers have no targeted training

Limited: The school has committed to the development of teachers through a single workshop or seminar.

Developing: The school has committed to the development of teachers by providing multiple workshops or seminars.

Moderate: The school provides professional development for teachers through ongoing professional learning opportunities.

Excellent: The school provides ongoing professional development for teachers by hiring an on site specialist to ensure ongoing professional learning, application, etc.

78. My school provides professional learning opportunities for the identification and support of those with learning disabilities.

- None
- Limited
- Developing
- Moderate
- Excellent

79. My school provides professional learning opportunities for the identification and support of gifted students.

- None
- Limited
- Developing
- Moderate
- Excellent

80. My school provides professional learning opportunities for the identification and support of twice-exceptional students.

- None

- Limited
- Developing
- Moderate
- Excellent

Based upon the 5-point scale below, select the response that best represents your school's professional learning opportunities and commitment for administrators in the area indicated.

None: The school has not committed to the development of the administration and thus administrators have no targeted training.

Limited: The school has committed to the development of the administration through a single workshop or seminar.

Developing: The school has committed to the development of the administration by providing multiple workshops or seminars.

Moderate: The school provides professional development for administrators through ongoing professional learning.

Excellent: The school provides ongoing professional development of administrators by hiring an on site specialist to ensure ongoing professional learning, application, etc.

81. My school provides professional learning opportunities for the identification and support of those with learning disabilities.

- None
- Limited
- Developing
- Moderate
- Excellent

82. My school provides professional learning opportunities for the identification and support of gifted students.

- None
- Limited
- Developing
- Moderate

- Excellent

83. My school provides professional learning opportunities for the identification and support of those who are twice-exceptional.

- None
- Limited
- Developing
- Moderate
- Excellent

Based upon the 5-point scale below, select the response that best represents your school's offering for learning opportunities and commitment for community members (parents, non teaching staff, mentors, etc) in the area indicated.

None: The school has not committed to the development of the community and thus community members have no targeted training.

Limited: The school has committed to the development of the community through a single workshop or seminar.

Developing: The school has committed to the development of the community by providing multiple workshops or seminars.

Moderate: The school provides for the community's development through ongoing learning.

Excellent: The school provides for the development of community members by hiring an on site specialist to ensure ongoing professional learning, application, etc.

84. My school provides learning opportunities for the identification and support of those with learning disabilities.

- None
- Limited
- Developing
- Moderate
- Excellent

85. My school provides learning opportunities for the identification and support of gifted students.

- None
- Limited
- Developing
- Moderate
- Excellent

86. My school provides learning opportunities for the identification and support of twice exceptional students.

- None
- Limited
- Developing
- Moderate
- Excellent

Please respond to the following questions in your own words:

87. Describe the learning opportunities your school provides for the identification and support of neurodiverse and twice-exceptional students including the offerings for all stakeholders.

Needs Assessment Survey for International Schools on Neurodiverse and Twice-Exceptional Students' Support

Section 5

Please answer each item by selecting the occurrence of challenges faced within your school in the areas indicated.

None: No challenges experienced towards providing support.

Minimal: Some or occasional challenges experienced.

Limited: Intermittent challenges experienced.

Moderate: Periodic challenges experienced. Extreme: Ongoing and consistent

88. Lack of time provided to teachers.

- None
- Minimal
- Limited
- Moderate
- Extreme

89. Cultural bias and perceptions about neurodiverse students.

- None
- Minimal
- Limited
- Moderate
- Extreme

90. Knowledge of the field of neurodiversity and twice-exceptionality.

- None
- Minimal
- Limited
- Moderate
- Extreme

91. Culture that focuses on deficits rather than strengths.

- None
- Minimal
- Limited
- Moderate
- Extreme

92. Targeting both the gifted and the deficit aspects of the whole-child in teaching and learning practices.

- None

- Minimal
- Limited
- Moderate
- Extreme

93. Consistent and reliable policies and procedures in place for identification of neurodiverse students.

- None
- Minimal
- Limited
- Moderate
- Extreme

94. Consistent and reliable policies and procedures in place for support of neurodiverse students.

- None
- Minimal
- Limited
- Moderate
- Extreme

95. Parental support and involvement.

- None
- Minimal
- Limited
- Moderate
- Extreme

96. Staffing of specialized professionals.

- None
- Minimal

- Limited
- Moderate
- Extreme

Please respond to the following question in your own
words:

97. List and comment on any additional challenges faced within your school towards providing
services to neurodiverse and twice-exceptional students.

**Needs Assessment Survey for International Schools on Neurodiverse and
Twice-Exceptional Students' Support**

Thank you for taking the time to complete this survey. Your participation is of great
importance.

If you have questions, you are encouraged to contact the researchers Graciela Livas or
Brooks Lüscher at graciela.livas@bridges.edu brooks.luscher@bridges.edu. The
advisors to the researchers are Dr. Karen Westberg karen.westberg@bridges.edu and
Dr. Jann Leppien jann.leppien@bridgs.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.

Appendix I

Interview Guide
Phase 1

Goals and purpose:
The purpose of this study is to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity and enhances twice-exceptional students' holistic growth. The researchers plan to recognize perceptions, knowledge, and practice, analyzing common needs throughout diverse international schools, and providing a future research discussion to guide schools forward as they navigate support for their 2e populations.

Research question:
How might we identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity to enhance students' holistic growth as unique individuals in order to become a more inclusive and 2e supportive learning community?

Script:
My purpose today is to learn about the perceptions, knowledge, and practices found in your school surrounding key themes within neurodiversity in order to provide a framework for the construction of a needs assessment survey. The goal of which is to identify the needs within the international school community to promote the development of an ethos that celebrates neurodiversity to enhance students' holistic growth as unique individuals in order to become a more inclusive and 2e supportive learning community. Please know that this is a confidential conversation, so your name and school will not be used or published.

How would educators in your school describe students who are neurodiverse?

> When discussing these learners, what is the main focus in regards to providing them with support?

How would educators in your school describe learners who are twice-exceptional?

> When discussing these learners, what is the main focus in regards to providing them with support?

In what ways do you believe neurodiverse and twice-exceptional learners' strengths and talents should be addressed?

> Could you provide an example of these methods in action from your personal experience within international schools?

In what ways do you believe schools should support the social emotional needs of neurodiverse

and twice-exceptional learners?

>   Could you provide an example of these methods in action from your personal experience
>   within international schools?

In what ways do you believe educators should support the social emotional needs of
neurodiverse and twice-exceptional learners within their classroom environments?

>   Could you provide an example of these strategies implemented within classrooms from
>   your personal experience within international schools?

In your opinion, how should integrated support be provided from professionals across the school
in order to accomodate neurodiverse and twice-exceptional learners?

>   Could you provide an example of structures in place from your personal experience
>   within international schools that provide this integrated support?

In your opinion, how should support be provided from external professionals in order to
accomodate neurodiverse and twice exceptional learners?

>   Could you provide an example of structures in place from your personal experience
>   within international schools that provide this external support?

In your opinion, what role should parents play in the process of supporting neurodiverse and
twice-exceptional learners?

>   Could you provide an example of structures in place from your personal experience
>   within international schools that provide this parental involvement?

What professional development opportunities do you believe are required to support educators in
their efforts to serve neurodiverse and twice-exceptional learners?

>   Could you provide an example of these professional development opportunities being
>   implemented from your personal experience within international schools?

What qualities within a leadership team do you believe promote effective culture change?

>   Could you provide an example of these in action from your personal experience?

Appendix J

Feedback Form
Phase 2

Thank you for participating in the review of this qualitative needs assessment survey. We request that you please provide your feedback and insights below.

With the overall survey and questions in mind, please complete the following feedback form.

1. Please briefly discuss the overall structure of the survey.

    a. Is the layout easy to follow and clear?

    b. Are the instructions about how to complete and submit the survey clear?

    c. Is the information regarding the study clear and sufficient?

2. Please provide feedback with regards to the order of the questions within the survey.

    a. Do the sections flow sequentially for the reader?

        i.   If not, briefly describe what does not or your suggestions for a better flow.

    b. Do the questions flow sequentially for the reader?

        i.   If not, briefly describe what does not or your suggestions for a better flow.

3. Please provide feedback regarding the content of the questions.

    a. Was enough background information provided?

        i.   If not, briefly describe what is missing or your suggestions for further information or details.

    b. Was the content inclusive of the realms of neurodiversity and twice-exceptionality (2e)?

        i.   If not, How might we provide greater balance within the questions or content information?

    c. Was the content of the questions clear and easily understandable for the intended audience (international school education learners)?

        i.   If not, what suggestions do you have to improve the content of the questions?

    d. Are any of the questions leading?

        i.   If so, what suggestions do you have to rectify this?

    e. Do any of the questions demonstrate bias?

    i. If so, what suggestions do you have to rectify this?

4. Please provide feedback on the design of the questions within the survey.

   a. Did the rating scale provide sufficient and clear options?

     i. If not, how might they be improved?

   b. Were the questions written in a way that made it easy for the participant to answer?

     i. If not, how might this be improved?

   c. Are the questions written with simple, concrete words, as well as consistent words and syntax?

     i. If not, how and which questions could be improved?