

AMERICAN UNIVERSITY OF BEIRUT

A CRITICAL REVIEW OF FIVE BOOKS ON TWICE-
EXCEPTIONALITY

by
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A project
submitted in partial fulfillment of the requirements
for the degree of Master of Arts
to the Department of Education
of the Faculty of Arts and Sciences
at the American University of Beirut

Beirut, Lebanon
April 2022

AMERICAN UNIVERSITY OF BEIRUT

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ACKNOWLEDGEMENTS

I would like to convey my appreciation and gratitude for my professor and advisor Dr. Anies Al-Hroub, who guided me throughout this project, and without him; it would not have been possible. Through his inspiring work and kindness, this project was completed with his encouragement. Not only did he guide me every step of the way, but he also presented the availability of resources that built this project. I would also like to thank my parents and sister for their immense understanding, love, and support.

ABSTRACT

OF THE PROJECT OF

Christina Kamal Batrouni

for

Master of Arts

Major: Education

Title: A Critical Review of Five Books on Twice-Exceptionality

Twice-exceptional students have been misidentified as either special needs students or gifted students over the years, negatively impacting school performance and causing high rates of dropouts. The masking effects that special education needs, disabilities, and high learning potential have on each other cause the oversight of giftedness and places students in special needs programs that diminish motivation and self-efficacy. Conversely, solely identifying giftedness as the main curricular score that holds a student's grades together severely impacts mental health and achievement outcomes.

The purpose of the project is to evaluate available research for the identification and intervention methods for twice-exceptional students that harness and allow growth of giftedness and accommodate for special education needs. The project identified current evidence-based assessment tools for the identification of twice-exceptionality as well as intervention methods in the field and the need for further research.

The criteria used for book review selection included an introduction, a background on previous studies conducted, methods of critique, and conclusions. The book reviews adopted the *Frontiers in Psychology* journal guideline; including a summary, discussion, and evaluation. The selected books covered extensive research studies that were compiled and edited over the past five years (2017-2021) under themes related to twice-exceptionality, mental illness in twice-exceptional students, and policy and assessment methods. This review aims to (a) evaluate the research findings concerned with the effectiveness of presented assessment methods and interventions for 2e students (b) identify the processes that hinder and invalidate research outcomes, and (c) identify and discuss the research gap present in the current literature and propose future investigation regarding diagnostic criteria. The review includes five books, edited by well-accredited professionals in the field of educational psychology over the last few years (2016-2021): "Twice Exceptional: Supporting and educating bright and creative students with learning difficulties"; "Talent development in gifted education: Theory, research, and practice"; "The school handbook for dual and multiple exceptionalism"; and "To be gifted and learning disabled"; "Understanding twice-exceptional learners". The books were selected from multiple search engines and databases (e.g., Google Scholar, Scopus, and ERIC) using specific keywords, such as gifted with learning disabilities, talented with learning disabilities, gifted with disabilities, gifted with a physical disability, gifted with autism, gifted sensory, gifted with ADHD, twice-exceptional, dual-exceptional, multiple exceptionalities. The review follows the guidelines set by *Frontiers in Psychology* journal. The book reviews showed the effectiveness of strength-based interventions, which include the collaboration between specialists, schoolteachers, and parents. The

reviews also revealed multiple discrepancies in the identification of 2e students at school. Internal validity, however, needs to be enhanced regarding identification criteria. Hence, further research must be conducted to meet the internal validity of the instruments used.

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ABBREVIATIONS

- 1- 2e: Twice-Exceptional
- 2- SEND: Special Education Needs and Disabilities
- 3- HLP: High Learning Potential
- 4- ADHD: Attention Deficit Hyperactivity Disorder
- 5- ADD: Attention Deficit Disorder
- 6- LD: Learning Disability
- 7- ASD: Autism Spectrum Disorder
- 8- WISC-V: Wechsler Intelligence Scale for Children – Fifth Edition
- 9- CBT: Cognitive Behavior Therapy
- 10- SENCO
- 11- GATCO

CHAPTER 1

INTRODUCTION

Twice-exceptional students have faced many obstacles regarding identification and accommodation in school systems. There is an issue in presenting a concrete and clear definition for twice-exceptionality, which at its most basic requirement is flawed by issues of identification of these students (Al-Hroub, 2019, 2013, 2020). Yet, research over the past few years has progressed regarding its definition and has presented characteristics and multi-faceted identification methods that would allow to then accommodate students.

Twice-exceptionality is defined, as proposed definition by Reis et al. (2014):

Twice-exceptional learners are students who demonstrate the potential for high achievement or creative productivity in one or more domains such as math, science, technology, the social arts, the visual, spatial, or performing arts, or other areas of human productivity AND who manifest one or more disabilities as defined by federal or state eligibility criteria. These disabilities include specific learning disabilities; speech and language disorders; emotional/behavioral disorders; physical disabilities; Autism Spectrum Disorders (ASD); or other health impairments, such as Attention-Deficit/Hyperactivity Disorder (ADHD) (p.222).

Such entails that students must be accommodated for both learning disabilities or other existing or comorbid disabilities along with their giftedness. This is done through sufficient comprehensive screening and collaborative intervention.

Problems in identification are found in testing methods and insufficient teacher training, along with the lack of cooperation between school counselors, parents, and

teachers (Kaufman, 2018). The issue, however, is much more essential to the nature of twice-exceptionality where in most cases giftedness is masking the disability, vice-versa, or neither giftedness or disabilities are shown in school performance and intelligence testing methods (Castellano et al., 2011). State definitions and 504 evaluations fail to identify twice-exceptional students (Yates & Boddison, 2020), both in requirements and in the way they are not set to meet the needs of twice-exceptional students regarding evaluation protocols (Montgomery, 2013). To approach this matter, twice-exceptionality should be taken in a holistic view in which the student's perceptions are taken into consideration as well. Social-emotional needs, self-efficacy, motivation, parental interviews, and cooperative communication along with a strength-based program are needed to secure the success of twice-exceptional students at school.

How do schools successfully identify and intervene for the success of twice-exceptional students? The purpose of this book review is to evaluate available academic books that focus on identifying and nurturing twice-exceptional students (2e). Books have shown the lack of strength-based interventions that were examined regarding 2e students. Though most recent book publications on giftedness refer to differentiated assessment, the multi-dimensional approach of identification, and differentiated instruction (Al-Hroub, 2011, 2014), a few focused on identifying and serving twice-exceptional learners. Most book publications focus either solely on giftedness or special education needs (VanTassel-Baska, 2021).

Therefore, we need to further book publications, and book reviews to address the gap in the literature that persists today regarding scientific evidence for the explanation of twice-exceptionality.

This body of research extends the study of twice-exceptional students and fills the gap regarding accurate and feasible intervention methods. This review serves as insight and extensive research on the identification and assessment of twice-exceptional students since a very limited and small amount of books were published regarding this topic.

Five books were selected for this review; published in the last five years (2016-2021) and edited by notable and accomplished educational psychologists. The selection was based on the definition of twice-exceptionality, which acknowledges the coexistence of giftedness and any type of disability, except for intellectual disability, such as the proposed definition by Reis et al. (2014).

CHAPTER 2

BACKGROUND

Twice-exceptionality began emerging as a term in 1986, when Gallagher (1986) found that there was a need to target talent development in education, stating that misidentification for disabilities was prominent. Gallagher then stated that some students exhibit high learning abilities as well as deficits, terming this twice-exceptional. The term has followed a pattern of oversimplified definitions over the years; such as reducing twice-exceptionality to children who “exhibit remarkable strength in some areas and disability weaknesses in others” (Weinfeld et al. (2002), p.226).

Baum (2016) stated that the acceptance of such a stereotypical and generalized definition decreased the possibility of identification. Such a statement comes from the fact that 2e students must be individualized and treated as individual cases, taking into consideration their personal views and perceptions in counseling (Ibrahim, 1985). Exclusion in the literature was also highlighted regarding multiple disorders in 2e students, including Autism Spectrum Disorder, Attention Deficit Disorder, Pervasive Developmental Disorder, and Oppositional Defiant Disorder (Baum, 2016). The term co-morbidity has been a barrier to comprehensive assessment due to the narrowness of the term and its respective assessments in previous medical research (Nardi et al., 2007). For this, such a term is better replaced with case-mix psychopathology with the need for further research implied (Tran et al., 2019).

Taking this into consideration, Baum (2016) went on to define twice-exceptional students as gifted and highly knowledgeable and talented in particular areas, who

however face obstacles regarding special learning difficulties that delay or halt development and mask gifted potential. Baldwin et al. (2015) stated that 2e students need specialized methods of identification, enrichment programs for children's interests and talents, social-emotional as well as academic support, and intensive teacher training for this.

This definition also places 2e students in a neurodiverse lens; for these students suffer pathological or neurological differences that manifest through differentiated behaviors, accompanied by high abilities (Reis et al., 2014). Such differentiated behaviors are seen to enhance learning (Reis et al., 2014). This leaves much room for scientific research regarding the neuroscience behind executive functioning, their learning mechanisms, and putting a stop to misdiagnosis of comorbid attention deficit hyperactivity disorder (ADHD) or autism spectrum disorder (ASD) with giftedness (Kondo et al., 2015; Rinn & Mullet, 2015). Considering the paradox of 2e students; where there are strengths in specific areas and weaknesses in others, if defining characteristics and points of intersection of disability and giftedness cannot be achieved, then school systems would continue to fail these students.

Executive functioning has previously been seen as one system eliciting self-regulation and metacognitive skills controlled by connections in the prefrontal cortex and connections between the prefrontal cortex and parietal cortex, in addition to other corticothalamic-striato-cerebellar circuits (Duggan & Barrera, 2015). Previous research has emphasized its multidimensionality and nonlinear circuits with a lack of one definition for the term, and agreement on a structural component for learning (Duggan & Barrera, 2015). This review will unite a definition of executive functioning within a psychoeducational framework and present ways to improve it in twice-exceptional

students and fill a gap in the research. Executive functioning has previously been placed in the understanding of the diagnosis of ADHD (Barkley et al., 2013), but this review will go beyond the diagnosis and apply such functions to different subsets of twice-exceptionality and giftedness.

In addition to difficulties in executive functioning, Montgomery (2013) explained that 2e students have difficulties in cognitive processing in one or more areas of cognition; such as reading or memorization, along with deficits in coding. Baldwin et al. (2015) then defined 2e as having both exceptional ability and exceptional disability, with either dominating the other causing masking and misidentification.

Twice-exceptional students have “a variety of exceptionalities – Asperger syndrome, hyperactivity disorders, specific learning disabilities, and gifted and talented,” (Reis et al., 2014, p.218). Indeed, ADHD and Autism Spectrum Disorder (ASD) occur with giftedness, along with sleep disorder that may be identified early on with giftedness as a dual diagnosis; which may then lead to more issues such as hyperactive disorder (Webb, 2016). Montgomery (2013) takes a neurodevelopmental approach to twice-exceptionality and identified its subtypes; gifted with learning disabilities, gifted with a non-learning disability, gifted with ADHD, gifted with social, emotional, and behavioral problems, and gifted with ASD. By neurodevelopmental, what is meant is not a sequential approach to the acquisition of skills over time but a hierarchal interaction of brain functions (Montgomery, 2013). This then removes the idea that learning has to coincide with chronological age, which is not the case in twice-exceptional students. Sensory, motor, social, and emotional learning inputs all produce output behavior (Montgomery, 2013).

Gifted with learning disabilities includes processing errors in reading, writing, phonics, spelling and language, and coding arithmetic (Montgomery, 2013).

Montgomery focuses on and specifically defines dyslexia as the inability to spell at age level and ability. When dyslexia is accompanied by fine motor coordination problems, the latter is then diagnosed as dysgraphia and primarily affects writing rather than reading; both may co-occur (Montgomery, 2013).

Dyslexia manifests as the inability to name or say the sound of letters, following classroom methods for symbol-sound correspondence, emotional and behavioral difficulties arising from frustration, failing at multisensory phonics, spelling difficulties, and possible motor coordination problems. Awareness usually develops at the age of 8, and dyslexia in twice-exceptional students is shown through emotional and behavioral difficulties with girls being referred later than boys. 2E students usually read at age level but have serious spelling errors, with high ability and reading masking the spelling mistakes. Maintaining students' interest and motivation in spelling may help these difficulties, with early intervention supporting literacy development. The greater the grade level, the more the dyslexic features where spelling decreases and meaning of texts decreases, and spelling and mechanisms are slowed affecting the deep structure of the text. 2E students' potential is generally much higher than what their academics show, with 10-20% of gifted students with dyslexia going unnoticed due to masking (Montgomery, 2013).

Dyscalculia, on the other hand, is sometimes accompanied by problems in verbal and visual working memory and "is characterized by moderate to extreme difficulties in fluent numerical computations in the absence of sensory difficulties," and the inability "to quickly understand, approximate and manipulate non-symbolic

numerical quantities,” (Morsanyi et al., 2013, p.2). Yet, when it comes to gifted students with dyscalculia, 2E students are visuospatial learners where they learn in images, seek patterns, grasp complex ideas and concepts, and transform mental images into words. Hence, it is recommended to start with complex concepts and then move to detail with gifted/dyscalculia students in mathematics (Silverman et al., 2015).

Reading disability is also prevalent when it comes to twice-exceptional students, where RD is defined as “a specific learning disability characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities... result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and impairs effective classroom instruction,” (Gilger et al., 2017, p.25). 2e students with RD also have high abilities in nonlinguistic domains showing visuospatial strength (Gilger et al., 2017). Research is limited in this domain and will be discussed throughout this review.

Gifted students with non-learning disabilities, on the other hand, include gifted students with physical impairments, gifted students with dysgraphia or dyspraxia, gifted students with Tourette syndrome, and gifted students with ADHD (Montgomery, 2013). Gifted students with physical impairments are usually high-ability learners in a specific domain who have physical disabilities whether medical issues, diseases, or disabilities resulting from brain injury (Montgomery, 2013).

Twice-exceptional students who are gifted and who also have developmental dyspraxia; defined as the inability to motor plan with motivational difficulties and issues in brain functioning due to faulty input of information or problems in the brain’s feedback pathways (Montgomery, 2013). There are problems in complex movement ideation, the movement itself, language and perceptual difficulties, attention and

concentration deficits, working memory issues, behavioral problems, thought organization difficulties, and educational problems. Such students need special needs accommodations for these areas and strength-based approaches towards their high ability domains (Montgomery, 2013).

Developmental dysgraphia, on the other hand, may co-occur with both dyslexia and ADHD at the same time (Montgomery, 2013). Dysgraphia is when dyspraxia is only manifested in motor skills, where there are elaborate avoidance strategies in writing with difficulties in spelling and letter formation and handwriting problems across different areas (Montgomery, 2013). 2E students usually cover up these deficits and problems by using the same words or phrases repeatedly, writing exaggeratedly, and writing in large text. Yet, spelling problems, slowness, and squiggles are usually a sign even though sometimes the latter is used to cover difficulties up. 2E students' thoughts run much faster than their writing skills, with difficulties often criticized harshly and concept-grasping ignored, leading to low self-esteem (Montgomery, 2013).

Twice-exceptional students who are gifted with attention deficit hyperactivity disorder are largely misdiagnosed, making up to 50% of the population (Webb, 2016). ADHD "is characterized as a developmental, neurobiological condition defined by the presence of severe and pervasive symptoms of inattention, hyperactivity, and impulsivity," (Daley & Birchwood, 2010; as cited in Berri & Al-Hroub, 2016, p.1). 2E students can pay attention to a small portion of the class but still perform well, with high interest and motivation masking ADHD symptoms; to a future limit (Webb, 2016). Organizational skills are usually poor; the student tends to lose things easily and is often forgetful (Webb, 2016). Yet, there should be a distinction between overexcitability, which is a trait associated with giftedness, and impulsivity (Webb, 2016) which is

further discussed throughout this review. In addition, situational specificity should be taken into consideration; with the DSM- V specifically indicating that symptoms must range across various settings (Webb, 2016). Some distinguishing characteristics include awareness of rules that is present in giftedness rather than ADHD, choice in the task doing present in giftedness and not ADHD, with poor persistence prevalent in ADHD (Webb, 2016). Such distinction shall be further discussed in detail later in this critique with current research findings.

The final non-learning disability to be defined here is Tourette Syndrome which must be accommodated by special education as well as high ability development in 2E (Montgomery 2013). The syndrome is defined by tics; which are “involuntary, rapid, recurrent, non-rhythmic motor or vocal” (Montgomery, 2013, p.80) actions that show at 7 years of age or younger. ADHD and obsessive-compulsive disorder are sometimes co-morbid (Montgomery, 2013).

In addition to verbal and non-verbal learning difficulties, twice-exceptional students can be gifted with social, emotional, and behavioral problems where dyssynchronicity may take place; internally or socially (Montgomery, 2013). Such is defined as having different rates of intellectual, psychomotor, and affective development or being socially out of context; with the latter being prevalent in 2E students due to giftedness (Montgomery, 2013). Moreover, 2E students may have sensory disabilities including hearing, deafness, speech impairment, or visually impaired; but also show elaborate vocabulary, awareness of consequence and cause/effect relationships, vast information on specific topics, strong divergent thinking, and a prolonged attention span. Superior memory, visual-spatial strength, and body

language usually mask oral communication deficits and problems (Johnsen & Corn, 1989).

Mental illness has been shown by previous research to co-occur with twice-exceptionality and has not been studied as one of the dual exceptionalities before; except for bipolar disorder. Bipolar disorder has previously been associated with high creativity and high ability (Webb, 2016), but this review will delve deeper into mental illness and emotional problems in gifted students and twice-exceptionality; filling the gap in the literature.

Twice-exceptionality may also include giftedness with ASD (Tainyi et al., 2021). Defined as having social communication and interaction problems along with “restricted, repetitive patterns of behavior, interests, and activities,” (Tainyi et al., 2021, p.2), gifted students with autism spectrum disorder exhibit strengths in creative and divergent thinking with an intense focus on detail and factual information on a specific topic of interest (Burger-Veltmeijer et al., 2011). Yet, motivations behind behaviors are different between giftedness and autism spectrum, and it is important to differentiate to grasp a proper diagnosis (Luor et al., 2021). ASD regards itself with a lack of abstract thinking, with rigid routines and attitudes; whereas giftedness exhibits an understanding of routine but a choice not to follow specific aspects of it. Lack of social awareness and metacognition are also trademarks of ASD, with a lack of humor accompanying these. Gifted students, however, have strong humor and the capacity to build self-awareness and metacognitive skills (Luor et al., 2021). Such differences are imperative for close and accurate dual diagnosis and will be discussed further in this review.

Lastly, twice-exceptional students may be gifted with Down syndrome and cognitive disabilities (Montgomery, 2013). Increasing motivation and self-esteem along

with identifying both strengths and weaknesses in Down's syndrome is imperative for acquiring knowledge and new skills; Down's syndrome has a specific learning profile that must be identified and individuals develop more slowly than others (Montgomery, 2013). They arrive at each stage of development later than their peers, with delayed speech and language and poor hearing being hallmarks, yet individuals with down-syndrome are strong visual learners with the focus having to be oral instead of written knowledge acquisition. Teaching should fit with their preferred learning style, account for weaknesses and fit their developmental stage, and harness strengths as well. This area of twice-exceptionality may be accompanied by other sensory or physical impairments such as hearing impairment and must be accommodated (Montgomery, 2013).

When discussing the assessment of giftedness in twice-exceptional students, grade level standardized testing does not prove cognitive processing abilities but only a limited amount of intellectual abilities; they include ceiling effects (Reis & Moon, 2004). Individual intelligence tests were recommended for 2e students, but they are time-consuming and expensive. However, reliability and validity are strengthened by using multifaceted testing and subscales relating to different cognitive areas to identify scatter points that target ADHD and learning disabilities. Lack of such testing at schools is the main reason twice-exceptional students are overlooked and unidentified (Reis & Moon, 2004).

2e students' struggle in school achievement and having their giftedness overlooked leads to poor self-concept and low self-esteem; paving the way for social-emotional and behavioral problems. Some social-emotional and behavioral portrayals include impulsivity (for example, speaking out of turn), risk-taking, aggression, and

carelessness (Montgomery, 2013). Maslow (1956) was the first to state that self-esteem was one of the essential needs of humans. Internal esteem included respect, autonomy and achievement were primary, and external esteem factors like recognition were also considered (Fathi-Ashtiani et al., 2007). Self-esteem depended on the difference between what the person desired, what the person believed he/she achieved, and the overall sense of external support (Fathi-Ashtiani et al., 2007). Hence, one intervention mentioned by Montgomery (2013) that would intervene and improve self-esteem would be goal setting. Many 2e students develop negativity towards the school system as a defense mechanism, causing high rates of dropouts and emotional and behavioral outbursts (Montgomery, 2013). Targeting self-esteem would resolve social-emotional and behavioral problems along with improving the overall academic life of the student. However, a more holistic approach toward self-esteem must be taken from all angles and not just one. The 2e student's environment, self-concept, and view of the future must be targeted and intervened in.

Previous qualitative and quantitative studies compared the chronological age and mental age of students with giftedness and non-gifted students' mental health and showed inconsistent fluctuations (Reis & Moon, 2004). Using the Attitude 4-scale Inventory, the California Test of Personality – Form AA, and the Stanford Benet IQ over a longitudinal study and using control studies, the findings did not show differences in depression and anxiety levels between students with giftedness and students without within the same chronological age but showed variations in nervous symptoms between the students and their same mental age group (Reis & Moon, 2004). However, variations in depression and anxiety showed within gifted subtypes with disabilities; i.e. different 2e subtypes and regression analysis proved that depression and

anxiety predicted loneliness in students with giftedness (Reis & Moon, 2004). The combination of educational and personal intervention has been suggested by research, with cognitive theory the strongest holder of intervention (Reis & Moon, 2004).

Beck's cognitive theory of depression has revealed that negative automatic thoughts, cognitive distortions, and core beliefs are interconnected and have inter cause-effect relationships that then lead to depression when triggered by a life event; with a depressogenic schema developed early in life (diathesis) placing individuals at a predisposition (Craighead et al., 2017). The model later became known as the diathesis-stress model/integrative model of depression in cognitive behavioral therapy. All individual cases differ and integrated, strength-based models are to be used to help 2e students' success at school. When it comes to self-esteem, this can be affected by the person's non-existing plan for the future and lack of agenda-setting due to instructional deficit and un-identification; a negative view of the self that may be affected by: the recurrent failure due to lack of identification systems, parental neglect, and social isolation and stigma; which ultimately affect the student's view of the world. Beck's cognitive triad of depression explained that individuals have three types of negative perceptions that impact each other, therefore causing anxiety along with social-emotional and behavioral problems (Fathi-Ashtiani et al., 2007). Beck's (1967) cognitive triad introduces three negative perceptions that exist and interact with each other: negative view of the self, negative view of the world, and negative view of the future. This causes distortions in memory and functioning along with cognition through the causation of anxiety and depression (Beck, 1967).

Studies have suggested using CBT and interventions on depression that are used with non-2e students with 2e students along with strong mentorship; explaining that

students suffer from distress via cognitive distortions (Reis & Moon, 2004). Further, evidence has shown that the combination of CBT with educational intervention concerning special educational needs would best help students (Bekirogullari, 2018). Research revealed that cooperation among parents, school counselors, along with student cooperation in class with peers and teachers leads to the student's success (Reis & Moon, 2004).

Since the strengths and disabilities of 2e students have shown to be paradoxical, their characteristics affect curriculum design and instruction. Paradoxical characteristics of 2e students include academics; where their grades vary drastically depending on the area of strength; reading troubles but strength incomprehension; and contradicting brain-imagining studies (Castellano et al., 2011). Reading skills require linking knowledge and background, speed in processing, and the ability to translate symbols and sounds using attention, memory, language, and motivation. Brain imaging studies have shown differences in the parietal operculum (auditory skills area); however, when instruction is adapted, students achieve excellent comprehension and synthesis, and creativity (Castellano et al, 2011).

- Sternberg's Triarchic Theory of Human Intelligence is composed of three sub-theories: componential (cognition and analytic skills), experiential (schema theory and creativity/novelty), and contextual (social and cultural) (Al-Hroub, 1999). Historically, much of intelligence and knowledge processes were attributed to culture and cognitive approaches; however, Sternberg introduces the fact that intelligence is multimodal and that cognitive approaches were restricted to one domain without generalization (Eysenck, 1986). Knowledge is indeed cross-cultural, however, based on its nature, it comes from social

learning and schema theory. Intelligence is a combination of traditional learning and analytic acquisition along with the capacity to generate new ideas through experience. IQ testing was criticized as being too constrained and not covering all areas of intelligence and strengths (Al-Hroub, 2021; 2019; Sternberg, 1986). Hence, based on this, recent interventions for twice-exceptionality are strength-based and multi-faceted, with identification being very detailed and covering different aspects and domains of intelligence that combine multiple assessment tools to resolve the paradox.

Furthermore, prevalence rates of twice-exceptionality fluctuate with respect to subtype (Fugate et al., 2021). Additionally, such rates have been undefined and fluctuant due to masking with emphasis on the need for research to identify prevalence (Ronskley-Pavia, 2021). This implies the importance of such a review in resolving identification issues that affect prevalence rate estimation.

CHAPTER 3

METHODOLOGY

Book Review History

Book reviews are considered post-publication opinions on the value of the content provided by scholars in a certain field that place a book within a wider range of research, providing its most important points (Gorraiz et al., 2013). There has been a contradicting conflict in the study of mechanisms in book reviews where negative criticism is often associated with soft fields rather than academic fields in book reviews, and such criticism whether positive or negative is socio-culturally bound (Hyland & Diani, 2009). Such rhetoric is also highly dependent on the field in which the review is being conducted (Hyland & Diani, 2009). A much-generalized way of conducting such a review has been bound to four main parts; introduction of the book, outlining, highlighting the important parts, and then evaluation. Yet, placing critical observations that include critical achievements done by the field-related book are dominantly expected by readers; where such criticism is part of the evaluation with positive notes conquering negative ones (Hyland & Diani, 2009).

Academic book reviews have been studied in the field of education and have been concluded to include multiple books with the inclusion of a journal section (Orteza & Miranda, 1996). The section is now known as the background, which places these books in a broader scope of research. Connections between these books in a review must be made by the end of it (Orteza & Miranda, 1996). When it comes to the field of social sciences, scholars prefer detailed book reviews with descriptions, criticism, and timeline. The timeline of the book review ranked as the highest priority for criteria of book review quality in previous review studies (Spink et al., 1998). Hence, this review

will include everything mentioned in this methodology section in a timely manner; where the past five years were a selection criterion for books included in this review.

Criteria for Selection

Specific keywords were used for the book selection process. The books chosen were compiled and edited over the past five years (2016-2021) in the field of educational psychology under the themes: twice-exceptionality, mental illness in 2e students, policy and intervention, identification, and assessment methods. Five books, edited by professionals in the field of educational psychology, published in English over the last five years presenting new research, and including quantitative studies were chosen through multiple search engines. Databases included ERIC, AUB Libraries, Scopus, and Google Scholar. Keywords included gifted (or talented) with learning disabilities, gifted with disabilities (physical, auditory, visual, autism, sensory, ADHD, learning), twice-exceptional, dual-exceptional, double-exceptional, and multiple exceptionalities.

Review Guideline

The guideline will be based on requirements set in *The Frontiers in Psychology*; due to its cross-sectional psychological research including educational psychology and cognitive sciences, along with clinical. The review format is as presented (*The Frontiers in Psychology*, n.d.):

1. Introduction
2. Background: Includes previous research concerning twice-exceptionality, identification, and intervention. Places the books in a wider scope of scholarly research.
3. Methodology

4. Critique:

- Summary
- Evaluation of the book's content: contributions to the field, articulation, and relevant points.
- Discussion of the book's content: placing it in a larger context of research and discussing data used.

5. Conclusion

CHAPTER 4

BOOK REVIEWS

Book Review 1: “Twice Exceptional: Supporting and Educating Bright and Creative Students with Learning Difficulties”; edited by Scott Barry Kaufman (2018)

Summary of the Book

The book is edited by Scott Barry Kaufman and comprises a complement of articles by specialists in the field. The overarching theme and argument of such articles is the need for comprehensive multi-model assessment across all domains for twice-exceptional students. The book contains four parts; with a total of nineteen chapters as a whole

Part 1 of the book focuses on identification methods for twice-exceptional students with chapters supporting. Chapter 1 defines twice-exceptional students as having both exceptional ability and disability, with the need for counseling, enrichment, and specialized identification. Chapter 2 presents different tools for personalized and individualistic identification as well as emphasizes the need for psychological and interpersonal well-being and a strength-based talent-focused program. Chapter 3 refutes traditional intelligence testing methods and suggests comprehensive assessment to solve paradoxical masking effects. Testing all aspects of functioning and finding the disability that impacts them is needed. Chapter 4 highlights the misdiagnosis of ADHD for overexcitability with the latter prominent in 2e students. Chapter 5 redefines students with twice-exceptionality as case-mix rather than comorbid; due to co-existing socio-emotional problems and the complexity of multiple diagnoses.

Part 2 of the book covers intervention methods. Chapter 6 places mental health interventions within a cognitive-behavioral framework and emphasizes teaching metacognition. It additionally presents methods for global thinkers. Chapter 7 expands on the social and emotional struggles of 2e students regarding self-efficacy, self-confidence, and the classroom environments. It presents the teacher as a social-emotional pillar. Chapter 8 looks at advocacy through a child-centered and problem-solving approach. Chapters 9 and 10 indicate a model and need for family collaboration with the school in addition to providing an individualized educational plan in order to pertain to self-regulation and achievement.

Part 3 delves into specific subtypes in twice-exceptionality. Chapter 11 terms giftedness with ADHD as attention divergent hyperactive giftedness; suggesting reverse hierarchal learning and proposing the evaluation of divergent thinking in ADHD as a testing measure. Chapters 12 and 13 show that social creativity is correlated to prosocial behavior and better prognosis in twice-exceptional students with an autism spectrum disorder. Furthermore, strategies for strengthening mental representation in English are provided within the context of visuospatial learning. Chapter 14 contrastingly explains the need for strengthening visuospatial thinking in 2e-RD is highlighted along with the processing strength of complex visual forms and divergent thinking in reading disorder. Chapter 15 presents the strengths of 2e students with dyslexia; which include material, interconnected, narrative, and dynamic reasoning. Chapters 16 and 17 present the new term 3e as twice-exceptional students of underserved diverse cultures with overlooked or misdiagnosed cultural aspects; with emphasis on inclusion. It stresses the need for further research.

Part 4 of the book presents the 2 final chapters of the book; 18 and 19, which provide feasibly and concretely demonstrated strength and talent-focused curricula tailored personally for 2e students; implemented successfully one-on-one and at the 2e school Bridges Academy.

Evaluation of the Book's Content: Content and Style

Through advocacy for neurodiversity in education, Kaufman bases the book on his background in humanistic psychology. Kaufman is a revered professor and cognitive humanistic psychologist in the United States; having taught at Columbia University, Yale, New York University, and others (Kaufman, 2022). The editor's practices in the field of cognitive sciences have influenced the choice of articles through his coaching of students for self-actualization and teaching practices. This strengthens the overall arch of the research by immediate trust in the editor's choice of articles and argumentation, which is important because the research is novel and adds to previous ones.

Primarily, the book introduces its goals by presenting the need for comprehensive assessment in 2e, the issue of paradoxical masking by illustrating a clear definition of the term, and the need to help resolve identification and intervention problems associated with this. Kaufman (2018) refutes traditional identification tools for 2e with emphasis on comprehensive assessment, which solves paradoxical masking. Tools include the Wechsler Intelligence Scale for Children-Fifth Edition (WISC-V), Stanford-Binet Intelligence Scale Fifth Edition, Woodcock-Johnson Tests of Achievement Fourth Edition (WJTA-IV), and interview data. The presented evidence suggested a new type of assessment that has lacked research in the field, filling the gap in the literature and presenting both quantitative and qualitative data; both are scarce in the field of educational research (CEC, 2014).

To strengthen his initial argument, Kaufman begins by portraying issues of misdiagnosis, misconceptions, and stereotypes that are due to inadequate diagnostic testing and wrong intervention plans. He does this in detail by indicating such problems in specific subtypes of twice-exceptionality. Such subtypes revealed details supporting argumentation through quantitative and qualitative research newly introduced to the field.

First, Kaufman covers the misdiagnosis of ADHD in 2e due to a lack of comprehensive assessment. Insufficient neurological indication misdiagnosis due to unclear behavioral criteria, and variations in executive functioning lead to the over-diagnosis of ADHD in 2e students. A gap in the literature suggests that ADHD inattentive has previously been differentiated 2e, with a combined type prevalently studied in 2e research (Reale et al., 2017). The book adds to the literature with data showing that hyper-activeness is uncorrelated to overexcitability in giftedness and 2e. Overexcitability, specifically low psychomotor overexcitability, and high intelligence overexcitability are present (Al-Hroub & Krayem, 2020) highlighting the need for differentiation. Instead, imaginative overexcitability is shown to be a predictor of attention hyperactive giftedness. This emphasizes a need for comprehensive assessment for correct diagnosis.

Second and smoothly integrating the points of introduction and argument, Kaufman validates his argument of diagnostic and interventional insufficiency in ASD. Kaufman adds to the literature the need for cognitive and behavioral analysis for correct intervention. Viewing imagination in ASD as a strength to promote social creativity has been questioned in previous research (Baron-Cohen & Craig, 1999).

Kaufman presents correlational data to prove the existing relationship between social creativity and better lifetime prognosis in 2e students with ASD, rather than social knowledge. One intervention mentioned in Kaufman's book is Socio-dramatic Affective Relational Intervention (Lerner et al., 2011) which allows for flexibility in response to social cues through improvisation; with gains in prosocial behavior, and emotion recognition, greater peer interaction, and reduced social anxiety. The research adds to previous studies concerning whether social creativity reduces social anxiety. Social knowledge has indeed been refuted as a link to prosocial behavior in autism, due to impairments in forms of understanding and internal cognition (Callenmark et al., 2013; Travis et al., 2021). This research is a novel approach to autism intervention.

Third, Kaufman argues for individualized and comprehensive assessment regarding reading disability. The editor adds to the literature the processing strength of complex visual forms and divergent thinking in reading disorders rather than the visuospatial deficit that has been prominent in previous research. The lack of research and the need for further studies on strengthening visuospatial skills is highlighted.

Kaufman acknowledges the diversity in such population throughout the research articles, and further broadens such advocacy and acknowledgment by integrating research on the new term in the field, 3E; which includes the cultural diversity of 2e students. The chapter dedicated to this term highlights the impossibility of cross-cultural diagnosis through traditional identification methods, further backing the book's argumentation.

Finalizing the synthesis of his research, Kaufman attracts teachers and administrative educational systems by bringing attention to the true feasibility of applying the intervention methods explained. Articles detailing case studies and steps

regarding one-on-one and group interventions in generalized school settings as well as special schools are indicated. This seals the argumentative point of the book by showing empirical data proving successful application.

Discussion

The book argues for the integration of twice-exceptional students in school systems and sheds light on misinformation, misidentification, and presents new intervention methods and systematic educational restructuring. It advances the understanding of such a population and the continuous need for its advocacy.

The synthesis of articles has strong implications and feasible applications in the practices of teaching, counseling, and systematic integration of 2e at schools; allowing for their success in life. Such identification methods implicated teachers, parents, and counselors along with school interventions are demonstrated to work empirically. Multi-modal dimensional comprehensive identification that allows for successful intervention is explained, refuting one-dimensional and traditional methods. Empirical data is presented along with a clear reference list for indicated articles and their citations. The sources open the door for further research pertaining to the use of the term thrice-exceptional; 3E. It additionally highlights the problematic gap in visuospatial research suggesting further scientific research pertaining to neural pathways that may be connected to executive functioning. Such visuospatial research may solve the gap in the research regarding the reading disorder.

Overall, the book can be used as a handbook and reference for all practitioners in the field to successfully provide educational and psychological services for twice-exceptional students.

Book Review 2: “Talent Development in Gifted Education: Theory, Research, and Practice”; edited by Joyce VanTassel-Baska (2021)

Summary of the Book

Edited by VanTassel-Baska (2021), the book targets assessment and the consideration of individualistic strength-based assessment and typical exemplars of human development rather than pathological indicators for giftedness in 2e. The book is divided into four parts; and is comprised of a total of fifteen chapters.

Part 1 of the book investigates the theoretical background of talent development. Chapter 1 covers the theoretical basis of talent development and previous research background. It introduces the theme of the book: individual strength-based assessment with emphasis on multi-modal identification and intervention. Chapter 2 refutes Terman’s IQ cutoff score for the identification of giftedness and refutes its prediction of future achievement or psychopathology. The chapter emphasizes a gap in the research concerning the developmental relations between creativity, talent, expertise, and giftedness. Chapter 3 places research in the context of inequality and exploitation as barriers to the ethical integration of gifted individuals in educational systems. Chapter 4 emphasizes the need for a safe school environment for talent development to take place. Chapter 5 tackles the need for comprehensive assessment and a collaborative model for intervention and teacher training, along with the role of families in the success of twice-exceptional students.

Part 2 of the book the processes for talent development. Chapter 6 proposes universal screening and the combination of multiple assessments for the identification of giftedness in 2e. Chapter 7 presents the term educational dosage as part of talent development intervention and curricula. This is in addition to acceleration, enrichment, and grouping. Chapter 8 provides empirical evidence for the predictive role of spatial

abilities in achievement, in addition to the predictive role of domain-specific identification for achievement in those domains. The chapter also explains the role of the counselor and the need for a humanistic and individualized view of the student for identification.

Part 3 of the book studies the role of intelligence and its nature in talent development. Chapter 9 emphasizes the need for social-emotional learning and its relationship with giftedness. Chapter 10 argues for a conative approach and its effectiveness relative to knowledge itself. Chapter 11 re-emphasizes the need for a supportive environment and psychosocial skills for the wellbeing and success of students with giftedness. Chapter 12 proposes different protocols with a set of characteristics for the enrollment of students in school, specifically domain-specific high ability students. Chapter 13 includes pedagogical implications for teacher training.

Chapter 14 presents the developmental manifestations of gifted entrepreneurship. Chapter 15 concludes the book by summarizing the research on talent development from previous chapters.

Evaluation of the book's content: Content and style

An accomplished professional in the field, Joyce VanTassel-Baska has directed multiple institutions related to the development of giftedness in the United States, along with working on the development of giftedness in underprivileged societies. Her background provides readers with insight into the true need for understanding underserved populations in education.

The editor's book can be divided into three main contributions to the field: the first being the study of non-intellectual aspects of giftedness and twice-exceptionality along with the need for reformed assessment and intervention.

First, the study of non-intellectual aspects of giftedness and twice-exceptionality includes personality studies. Previous research has shown no direct link between openness personality factor and giftedness but assessed the Five-Factor Model of personality relating to giftedness and found that a combination of openness and assertiveness factors are correlated to giftedness (Dimitrijević, 2012; Shavinina, 1995). However, what VanTassel-Baska suggests is that openness plays a mediating factor in the relationship between gifted students and higher creative ability.

Through a domain-specific longitudinal study called SMPY (Study of Mathematically Precocious Youth), a heavy literature review, and a presentation of case studies, VanTassel-Baska extends research on visuospatial talent by identifying associated personality trait variation. These include: (1) independence/nonconformity; (2) drive/resiliency; (3) courage/risk-taking; (4) androgyny; (6) Introversion; (7) intensity or overexcitabilities; (8) openness to experience; (9) MBTI: intuition (N); (10) self-discipline, 11) ambition/envy; (12) concern with philosophical matters; (13) frankness often expressed in political or social activism; (14) psychopathology; (15) depression; (16) empathy; and (17) a sense of humor. This adds to the understanding of the visual-spatial improvement and its nature where further research was needed. Emphasis on variation and the individualized nature of these traits extends the need for comprehensive assessment in twice-exceptionality; confirming Kaufman's previous argument, as well as a multi-dimensional intervention that includes social-emotional support.

Motivation and passion are also studied as part of non-intellectual mechanisms that drive success. VanTassel-Baska (2021) shows that motivation and passion, two non-intellectual concepts, predict future achievement, have implications on improved

self-concept and are correlated with mathematical achievement. In addition, social and emotional well-being is seen as an integral non-intellectual aspect of achievement. The development of metacognition and resilience is seen as integral to this (VanTassel-Baska, 2018). VanTassel-Baska (2018) adds to the current trend in psychology that resilience is not innate but built and can be enhanced. Through her emphasis on political and systematic injustice and unethical practices imposed on gifted and twice-exceptional students, she provides an existential view of social and emotional development in this population.

Second, VanTassel-Baska contributes to the field of assessment and intervention in giftedness and twice-exceptionality. As suggested in Kaufman, the issue of misdiagnosis and over-diagnosis of 2e is mentioned, with the recommendations of universal testing and the use of a holistic and comprehensive assessment method. Traditional methods are refuted further extending previous research's importance on the assessment conducted by school psychologists (Leggett et al., 2010).

For intervention, VanTassel-Baska (2021) emphasizes the importance of a combination of counseling, a parent-centered approach, and a school-centered approach with a safe learning environment. This can be contextualized as a need for parent collaboration and the need for integrating all sides for successful intervention adding to Kaufman's previous research.

Discussion

VanTassel-Baska (2021) presents empirical evidence for the understanding of twice-exceptionality, its identification, and assessment. Although most of the book targets giftedness, clear connections to twice-exceptionality are made with the implication of integration of such points to its field. Yet, there remains a geographical

limitation to the SMPY study suggesting the further need for cross-cultural studies of conative intelligence in 2e.

VanTassel-Baska fills a gap in the research about the variations in definitions of twice-exceptionality and adds to its understanding through non-intellectual and social-emotional studies. Such understanding is further strengthened by VanTassel-Baska's rigorous background in working with underprivileged and underserved gifted and twice-exceptional populations. Systematic implications for school interventions reiterate Kaufman's (2018) argument for comprehensive assessment; yet, VanTassel-Baska presents further detail concerning counseling practices. The importance of such practices implies cross-cultural, more specifically traumatized and underserved populations.

There was much repetition of theories and practices in the book, as well as too much detail pertaining to already established and old educational theories. However, this allows for a more generalizable audience and makes the book accessible to readers of all backgrounds.

In summation, the book presented further information and research about Kaufman's argument for comprehensive assessment and multi-dimensional intervention for twice-exceptional students. Yet, the approach was different through the study of non-intellectual traits of giftedness. This fills the gap in the literature and allows for a future unified definition of giftedness applied to twice-exceptionality.

Book Review 3: “The School Handbook for Dual and Multiple Exceptionality”; By Denise Yates and Adam Boddison (2021)

Summary of the book

The book is comprised of five chapters; dense in information regarding overidentification, multidimensional intervention, the two respective topics in a collaborative strength-based model, a person-centered approach, and detailed case studies to finalize these topics.

Chapter 1 presents the importance of a multidimensional identification of dual and multiple exceptionalities (DME) due to over-identification, overlooked gender discriminants, and the need for harnessing DME individuals’ economic and social potential. Chapter 2 states that the role of the teacher is a facilitator for change and not an expert, with the need for high learning potential (HLP) and special educational needs and disability (SEND) experts to be present in school environments in addition to training for the development of staff. Chapter 3 explains that successful identification and intervention require a strength-based collaborative model. The special needs coordinator and gifted (SENCO) and talented coordinator (GATCO) school collaborate to identify and intervene with school leaders to review performance and effective provision. The governors' role, in this case, would be to structure, evaluate, and hold accountable for any errors. Chapter 4 presents a person-centered co-production approach to DME. The zone of effective coproduction would come from the learner, professionals, and family. Chapter 5 explains the efficient implementation of such identifications and interventions in case studies, concluding policy reform.

Evaluation of the content: Content and style

The book’s introduction states that the identification and intervention methods explained may be understood by anyone in the field. Although such a statement seems

general at first, Chapter 3 identifies the roles of each reader at school. There is an emphasis on UK policies on which most of the research is based, with strong contextualization. However, case studies regarding both qualitative and quantitative methods are used, with high reliability and validity; strengthening generalizability.

Studies have requested more systematic research indicating the lack of policy reform for the accommodation of twice-exceptionality (Dimitriadis et al., 2021). The book clearly defines DME into four categories, which is different from the previous books seen in this review. It identifies them as high learning potential (HLP) with communication difficulties, HLP with cognitive and learning disabilities, HLP with social and emotional problems, and HLP with sensory or physical disabilities. This goes beyond the strict DSM 5 categorization as seen in Kaufman (2018) and unifies such issues through a humanistic approach toward the definition itself

Yates and Boddison (2021) highlight the repeated failure of presenting a definition for DME; highlighting a definition of HLP as specific to the art and sports domains. Such constriction builds the basis for the need for identifying giftedness over arching different domains. The writers left the door open for readers to interpret such a definition as wrong, connecting it to the purpose of the book; redefining twice-exceptionality.

The book presents a neurodiverse approach to autism and other disorders by focusing on social, emotional, and educational compensation and counseling. This follows the trend in research refuting traditional interventions such as applied behavior analysis for autism. By allowing such a connection, the book builds upon a comprehensive assessment; filling a gap in dyslexia identification research.

As much as there is a need for comprehensive assessment, this is paralleled with a need for a multi-intervention model as is shown in different books of this critique. Strength-based, self-interest-driven education is emphasized and has been supported, in addition to social and emotional counseling, to lead to students' success. For such interventions to take place, initial teacher training has also been recommended by previous research with emphasis on building students' metacognitive skills. The multi-intervention model indicates that there is a collaboration between the SENCO (Special Educational Needs Coordinator) and GATCO (Gifted and Talented Education Needs Coordinator), with further collaboration between school administrations, governors, parents, and teachers (Yates & Boddison, 2021). This collaboration allows for a positive and ethical overview of assessment and intervention and fills a gap in the literature concerning policy. This also fills a gap in the lack of evidence where SENCO and GATCO collaboration proves student success.

Discussion

Yates and Boddison (2021) introduce a detailed intervention that is collaborative and multifaceted. In addition, the book introduces a comprehensive assessment in line with Kaufman's (2018) research. The lens that the book looks at DME through is neurodiverse, further refuting traditional testing and intervention methods to reframe within multifaceted ones. This allows for connection with previous research and prompts the reader to do so through grazing over previous policy and research errors.

Through this neurodiverse lens, the book allows for a positive outlook on mental health assessment in ways that policymakers and governors must uptake (Foreman, 2016). The book fills a gap in the research pertaining to evidence-based collaboration and policy by presenting six detailed cases. Such cases included quantitative assessment

results and pre-post intervention through the qualitative description. This has further implications for cross-cultural application and generalizability. Such research proved feasible for policy change in the UK and must be regarded and built on across different settings.

Book Review 4: “To Be Gifted and Learning Disabled” By Susan Baum, Robin Schader, and Steven Owen (2017)

Summary of the book

The book is comprised of four parts and a total of fourteen chapters. The parts comprise a definition of twice-exceptionality and highlighting issues in the field, a neurodiverse approach to twice-exceptionality, comprehensive assessment, and intervention strategies respectfully. The book is based in the context of the United States.

Part 1 of the book introduces definitions and issues regarding the field of twice-exceptionality. The first part is comprised of four chapters. Chapter 1 of this part defines twice-exceptionality as learners who present the potential for high achievement in one or more domains and manifest one or more disabilities. It includes the subsets: specific learning disabilities, speech and language disorders, emotional/behavioral disorders, physical disabilities, autism spectrum disorders, ADHD, and health impairments. Chapter 2 explains through a historical approach the refusal of traditional identification methods such as IQ. Chapter 3 highlights the need for multiple testing tools for twice-exceptional students due to their paradoxical characteristics. Chapter 4, the last chapter of part 1, emphasizes the need for a strength-based and talent-focused approach targeting different areas of student wellbeing.

Part 2 of the book presents a view toward twice-exceptionality through neurodiversity. The first chapter of this part, Chapter 5, discusses knowledge and behavioral acquisition and manifestation using executive functioning and memory as its concepts; along with the attention and sensory input. Chapter 6 introduces the field and explains personality traits in twice-exceptionality with potential categorization. Chapter 7 explains why twice-exceptional students are misidentified, refuting traditional testing and current policy-based intervention methods.

Part 3 provides further detail about comprehensive programming for 2e. Chapter 8 proposes a combination of a priori identification and domain-specific, ability-focused dynamic identification for twice-exceptional students. Chapter 9 discusses a strength-based model considering the students' environment, executive functioning, and emotional wellbeing. Chapter 10 focuses on talent opportunity through differentiated school programs and mentorship.

The final part of the book, Part 4, proposes a detailed look at intervention models. Chapter 11 of the final part goes into further detail regarding the previously proposed strength-based approach in chapter 9. It emphasizes this along with dual differentiation through applying such to qualitative case studies introduced separately throughout previous chapters. Chapter 12 focuses on a psychologically safe environment for twice-exceptional students; explaining its positive correlation to executive functioning. Chapter 13 focuses on helping twice-exceptional students with reading disabilities through a multisensory approach and strengthening working memory. The final chapter of this part and the book, Chapter 14, concludes with the need for a collaborative model between parents, counselors, and teachers for better social and emotional support.

Evaluation of the Content: Content and Style

Following the trend of current research, the book refutes traditional IQ testing methods highlighting the need for domain-specific and combined testing; which can be seen in VanTassel-Baska's (2021) work. Additionally, a collaborative method that concerns parents, teachers, the student, and the school administration is suggested and has been demonstrated efficient in previous research and further supported by Yates and Boddison (2020) in the previous section. A comprehensive plan is suggested along with dynamic identification; as seen in all sections of this review. However, the book introduces a new approach to a strength based on the consideration of the school environment and emotional well-being is directly correlated to executive functioning.

Cooperative learning and stress management were emphasized indirectly helping executive functioning; with cooperative learning supporting self-efficacy and allowing for safe social integration (VanTassel-Baska, 2021) and stress reduction showing a better attitude toward self and others (Kaufman, 2018).

When it comes to identification, performance-based assessment is shown to lead to that through a longitudinal study conducted by Baum. Experiential intelligence is a subtype of intelligence as a whole. Such has also shown a better representation of students' skills and helped promising development and better identification in previous research, with emphasis on creative problem-solving. This has implications for Kaufman's research (2018) on social creativity and well-being of 2e students with ASD.

In their book, Baum et al. (2017) take a much more scientific and quantitative approach to twice-exceptional research than other sections of this review. This includes heavy literature citing Bartol et al. (2015) concerning neural scientific data pertaining to information processing along with a historic approach to memory studies. This then led

to the need for further studies regarding long-term memory distortion in information processing and the different coding systems of the brain.

Additionally, the book approaches the topic of ADHD in 2e through quantitative analysis pertaining to diagnostic tools, and diagnostic criteria, along with qualitative case studies. More quantitative data, however, was required for the ASD subtype of 2e; where chapter 2 was only covered qualitatively through literature and policy review. Imaging studies were cited to support the neurodiverse approach of the book; emphasizing different regions of the brain including the prefrontal cortex in direct correlation to executive functioning.

ADHD in 2e has in fact shown a delay in prefrontal cortex development; with this area of the brain being in charge of executive functioning and self-regulation (Baum et al., 2017). Baum et al. (2017) suggest improving extended time and time management by targeting the temporal organization, working memory, and self-awareness along with emotional and motivational self-regulation. Consequently, the book blends different parts of the book indirectly and allows the reader to link the different parts together. This then opens the door for further research regarding prefrontal cortex studies and their association with temporal studies.

Finally, Baum et al. (2017) contribute significantly to personality studies; within twice-exceptionality. The research adds to VanTassel-Baska's (2021) personality research in giftedness where it considers problems and difficulties in twice-exceptional students as well. Baum et al. (2017) include environmental needs and deficits that combine social, emotional, behavioral, and academic areas. Such research helps match students' personalities and needs to teacher instruction, which promotes development

and achievement. The research on the personality of 2e students helps develop customized curricula and instructional methods (Baum et al., 2011).

Discussion

The book enriches the field with a very scientific approach to educational psychology. Group comparison studies, experimental studies, qualitative case studies, along with longitudinal studies were conducted to provide accurate results; strengthening generalizability regardless of extensive reference to American policy. Placed in a larger context of research, Baum et al. (2017) blend with current research on several points; including neurodiversity, comprehensive assessment, and the presentation of quantitative data pertaining and qualitative data regarding twice-exceptionality.

The book overarches with medicinal and clinical references without infringing on the humane perspective towards 2e. This is done through individualized case studies containing quantitative testing measurements along with qualitative interviews. It takes a person-centered humanistic approach towards 2e counseling and intervention; but does not limit testing and identification to such, combining reliable and valid quantitative testing tools such as WISC V. It allows for further quantitative and imaging research within the topic of neurodiversity in twice-exceptionality.

Book Review 5: “Understanding Twice-Exceptional Learners” By Matthew Fugate, Wendy Behrens, and Cecelia Boswell (2020)

Summary of the Book

The book consists of eight chapters. Chapter 1 explains the need to look at twice-exceptionality through a neurodiverse lens and restructure schools for a safe environment, talent-focused approach and accommodation, building students’ self-

awareness, and applied knowledge. Chapter 2 sees disabilities on a neurological basis; questioning the role of the prefrontal cortex in recent intelligence research. The chapter introduces executive functioning for executive skill development; emphasizing correlates with motivation, metacognition, and self-efficacy with implications on misdiagnosis. Chapter 3 explains how creativity can be integrated into educational programs for 2e students with ADHD; helping their executive functioning skills.

Chapters 4, 5, and 6 cover the 2e subtype-specific learning disorders. A strength-based approach with special needs accommodations with an emphasis on socialization. Visual-auditory and visuospatial deficits are addressed with a focus on multisensory and cursive writing for dyslexia, dysgraphia, and reading disorder.

When it comes to mathematical difficulties, working memory and executive functioning must be intervened in through multisensory techniques and remediation; with emphasis on anxiety and its impact on diminishing working memory. Chapter 7 looks at autism through a social model that acknowledges cognitive variations with distinctive strengths in 2e students of this subtype. It criticizes the medical approach towards autism that has somewhat protected autistic children's rights and suggests a strength-based one with an emphasis on a healthy school environment. The final chapter of the book, chapter 8, reconnects to the concept of anxiety mentioned in chapter 6 and emphasizes the fact that anxiety disorders accompany 2e students and must be systematically approached.

Evaluation of the content: Content and style

The book uses a neurological and neurodiverse approach to twice-exceptionality; emphasizing and furthering the understanding of executive functioning and the prefrontal cortex. It highlights the prefrontal cortex as a major part of the brain that works in learning mechanisms and executive functioning.

The book builds on previous research and fills a gap and adds to Baum et al.'s book (2017); considering persistent faulty perception as part of dysfunctional executive functioning (Fugate et al., 2020), and highlighting the need for social and emotional intervention as part of a multimodal intervention. This is possible specifically due to the lens of neurodiversity that considers the whole individual.

In regards to intervention, The Enrichment Triad Model curriculum (Fugate et al., 2020) was found effective to compensate for behavior without the expense of remediation; it is a student-centered model that focuses on motivation and engagement and betters self-confidence and includes general exploratory activities, group training activities, and individual and small group problem solving (Kenzulli & Reis, 1982); with self-efficacy being seen as essential for student growth (VanTassel-Baska, 2021; Neihart & Wang, 2015). As previous research has also shown, Fugate et al. (2020) state that metacognition, motivation, and self-efficacy then all impact executive functioning as well as metacognition and self-efficacy impact motivation for learning.

Additionally, a didactic approach that includes self-regulation, creativity, and critical thinking along with socialization and learning through creative pathways has been found efficient. Socialization has been shown to improve self-concept (Brown & Townend, 2016) and ecological influences, highlighted by Fugate et al. (2020). Including teacher and family along with having a safe physical environment and peers to interact with through cooperative learning allows for more support and executive functioning (Fugate et al., 2020). The last point is valid as seen in VanTassel-Baska (2021) and Baum (2017); which shows that the book allows the reader to smoothly connect to current research in the field.

Dyslexia, dysgraphia, ADHD, and specific language impairment may co-exist with giftedness and such interventions are recommended to reach academic success. Fugate et al. (2020) fill a gap in the research about visual-auditory and visual-spatial issues in reading disabilities. Fugate et al. (2020) suggest a multisensory approach to learning words. Previous experimental studies showed that word reading accuracy was not sufficient for maintaining on-task behavior (Borden & Thorpe, 1985); hence the suggestion for removing visual-auditory distractions (Fugate et al., 2020). Cursive writing has also been shown to help spatial problems in writing and motor skills (Biren & Kaufman, 1979; Fugate et al., 2020).

Going back to the need for social and emotional support; when it comes to anxiety, math anxiety has been prevalent in 2e students with arithmetic difficulties (Fugate et al., 2020); in addition to anxiety being prevalent amongst 2e students due to asynchronous development. Previous studies have only linked the processing and storage of information in working memory to anxiety (Darke, 1988). The book follows current research done by Baum et al. (2017) that found positive correlations between anxiety to working memory and executive functioning skills (Fugate et al., 2020). For this, multisensory learning and remediation along with support for anxiety were recommended. Working memory as a central executive functioning element is diminished through anxiety. Finally, a systematic approach that combines all interventions mentioned was suggested (Fugate et al., 2020).

Discussion

The book takes a neurodiverse approach to twice-exceptionality as one of the most effective intervention practices. As seen in the previous books, multimodal intervention is heavily emphasized; with a more scientific approach to the need for

social and emotional counseling. Such an approach is based on the study of executive functioning and brain regions associated with it, specifically the prefrontal cortex. This study fills a gap in the research and adds to Baum's book by stating that faulty perception is part of executive functioning; opening the door for more emphasis on brain regions and pathways that may have an impact on executive functioning.

This being said, the book allows the reader to connect this to the need for anxiety intervention in the final chapter and indirectly strengthens the point that there must be more research on such pathways; to have a better scientific understanding of executive functioning. The research used single case studies that included quantitative testing measurements along with qualitative data in order to identify limitations identification and interventions and suggest alternative interventions. Qualitative case studies also showed the need for socialization as an integral part of the intervention; by providing a psychologically safe environment. This is suggested as part of a didactic approach.

Fugate et al. (2020) also emphasized the possibility of comorbid learning disabilities that may come in the way of visuospatial recognition; further supporting multiple interventions. The research book has strengthened the scientific basis of twice-exceptionality through neurological evidence and its ability to indirectly connect the reader to previous scientific research concerning social and emotional pathways in the brain; opening the door for further research on executive functioning. It also connects to previous books critiqued regarding a detailed intervention in learning disabilities considering comorbidity and the need for additional screening.

CHAPTER 6

CONCLUDING SUMMARY

This critique included five books under the theme of twice-exceptionality; covering the main issues of identification and intervention. All five books intersect on the need for comprehensive assessment and intervention plans, refuting traditional methods and reliance on below IQ scores. The main implications were in ecological environments and multimodal collaboration between parents, students, teachers, and school administration, along with the assessment that included subscales with reliance on discrepancy scores and high IQ. The main argument was that comprehensive assessment and planning that crosses over the five books; backed by research pertaining to both quantitative and qualitative methods, is a combination much needed in the field today.

This review filled gaps in the research pertaining to ADHD misdiagnosis, executive functioning, social flexibility in autism prognosis, and policy reform; along with comorbid and case-mix psychopathology in twice-exceptionality subtypes. The last was specific to anxiety and social-emotional related disorders that accompany twice-exceptionality diagnosis; strengthening the argument for a comprehensive assessment. Such points had a great implication on counseling techniques and school interventions, specifically collaborative and multidimensional intervention, and policy reform.

Identification through comprehensive assessment and intervention through a multidimensional model were clearly defined and backed up by the five books through citing of literature, qualitative and quantitative case studies, and longitudinal studies. This review intersects with a definition of twice-exceptionality; where it portrays

students as both having special educational needs and giftedness; or high learning potential. These two parts of the term must be respectfully assessed through comprehensive tools in order to overcome masking and misdiagnosis. Intervention, as seen, must be collaborative and multidimensional in order to compensate in a person-centered and humanistic integrated matter for the student. Such must be done on an administrative and teacher trained school level, governmental policy level, and parental and counseling intervention.

In conclusion, comprehensive and multidimensional methods must be applied more with twice-exceptional students in order to reach success and gain achievement. A neurodiversity approach must be taken to harness students' strengths without sole emphasis on special needs education. Further research must be conducted regarding neuroimaging and quantitative data pertaining to brain pathways regarding memory and executive functioning in connection to the different subtypes of twice-exceptionality. Additionally, visuospatial studies must be strengthened in order to resolve a gap in identification and intervention studies pertaining to reading disorders. Finally, correlation studies regarding social flexibility, imagination, and autism prognosis are also needed.

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