Applying Executive Function for the Sake of Well-Being: A Case Study of Gifted Middle School Students

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Applying Executive Function for the Sake of Well-Being:

A Case Study of Gifted Middle School Students

A Dissertation Presented to the Faculty of the
Department of Education & Social Work
West Chester University
West Chester, PA

In Partial Fulfillment of the Requirements for
the Degree of Doctor of Education in Policy, Planning, and Administration

By
Erika N. Lucas

May 2024

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Abstract

This study provided middle school student participants the opportunity to discuss the complexities of gifted culture in academia as they have experienced it and sought to pinpoint the emotions or feelings that students and their parents experienced as they transition to high school concerning their perceived sense of confidence and readiness as it pertained to executive function. Gen Z students deemed "gifted" are at a higher risk for depression and suicide due to the rising levels of stress and anxiety they experience (Andrews, 2014). Klimkeik et al. (2011) discovered that teenagers with depression and/or anxiety disorders exhibited impairments in working memory and processing speed, which are crucial executive skills. Experts advocate the use of mindfulness activities to develop and refine executive functioning skills in gifted students to enhance their mental and emotional well-being (Sisk, 2021). Because gifted students are educated in elementary and intermediate schools in a systematic and assisted manner, the need to hone executive functioning skills in these settings is reduced. The issue arises when students enroll in advanced courses in high school, which require them to exhibit complex executive functions. Many previous studies neglect to include the perspectives and experiences of adolescents immersed in gifted culture regularly, and this case study chose to do the opposite by amplifying these voices. Using focus groups, surveys, webinars as interventions, and student reflection, the findings of this study suggest that gifted students benefit from explicit instruction about executive function, the practicality and application of these skills, and a non-judgmental space to practice honing these skills and reflecting on these strategies.
Acknowledgments

First and foremost, I would like to thank my dissertation advisor, Dr. Heather Schugar, Ph.D., whose unwavering support, encouragement, and belief in my abilities have been the cornerstone of this journey. Your guidance not only pushed me to take risks and explore new horizons but also transformed our professional relationship into a genuine friendship and trusted partnership. Your weekly meetings were not just sessions of academic discourse but moments of personal growth and camaraderie that I will truly miss after the defense.

I am also immensely thankful to the members of my dissertation committee, Drs. Karen Dickinson, and Pauline Schmidt, for their invaluable contributions, sacrifices, and generosity with their time and expertise. Your uplifting words, constructive feedback, and kind edits have significantly enriched the quality of this work and shaped it into its final form. Your belief in the importance of this research and your willingness to support me along the way has been truly inspiring.

To the incredible people of Cohort 6 who, throughout this process, became dear friends, colleagues, and fellow Drs. and who supported and encouraged me throughout this journey, whether through words of wisdom, acts of kindness, or unwavering belief in my potential, I extend my heartfelt appreciation. This dissertation would not have been possible without your collective guidance and encouragement, and the text chain we upheld for the last three years where we shared frustrations, victories, and everything in between. The work we have set out to do is inspiring, and I look forward to continuing to lift one another up in our future endeavors.
Dedication

This dissertation is not just a testament to my academic journey, but a humble dedication to the shining lights of my life – my ever-supportive husband, Seth, and my precious daughter, Cordelia. As I pour my heart and soul onto these pages, I want you to know that you are the reason behind every word written, every lesson learned, and every victory achieved.

Seth, the unwavering support, and selflessness you have shown me throughout the past three years of this journey is the epitome of unconditional love. Your sacrifice has been the driving force behind my pursuit of this dream, and for that, I am eternally grateful. Your unwavering belief in me illuminated my path, igniting a fire within me to strive for more. Your encouragement, patience, and constant reassurance have been the cornerstone of my success. You held me up when my spirit wavered, reminding me of my capabilities when doubt crept in. Whenever the weight of deadlines threatened to consume me, you took on the responsibilities that I could not bear, ensuring that my focus would remain on the task at hand. This journey has been as much yours as it has been mine. You have shared in both the triumphs and the setbacks, standing by my side through it all. This will forever be etched in the deepest recesses of my heart, reminding me of the love we share and the incredible family unit we have created together.

Cordelia, your presence alone ignites a fire within me that fuels my determination to create a better world for you to flourish within. I hope that this dissertation serves as a reminder that nothing is beyond your reach. Through its pages, you’ll recall firsthand the countless nights and weekends I spent researching and the undying belief I held in the contents of this passion of mine. You, too, have the power to achieve every aspiration that dances across your heart. I hope this dissertation encourages you to pursue your dreams fearlessly, knowing that you possess the strength and resilience that run through your veins. I hope you come to realize that the
limitations set upon us are but an illusion and the only true boundaries are self-imposed. May you always have the courage to embrace challenges and chase your wildest aspirations. The world awaits your brilliance.
# Table of Contents

Abstract ........................................................................................................................................... ii

Acknowledgments.......................................................................................................................... iii

Dedication ......................................................................................................................................... iv

List of Tables ..................................................................................................................................... xi

List of Figures .................................................................................................................................... xii

Chapter 1: Introduction .................................................................................................................. 1

  Problem Statement ....................................................................................................................... 4

  Purpose of the Study ..................................................................................................................... 4

  Significance of the Study ............................................................................................................. 5

  Research Questions ..................................................................................................................... 6

  Rationale for Methods ................................................................................................................ 6

  Definition of Terms ..................................................................................................................... 7

  Summary ....................................................................................................................................... 9

Chapter 2: Literature Review ......................................................................................................... 11

  The History and Culture of Gifted Students ............................................................................. 11

  Gifted Services in Pennsylvania ............................................................................................... 12

  Pennsylvania’s Title 22, Chapter 16 ......................................................................................... 13

  Defining Gifted Populations: A History of Theoretical Frameworks ..................................... 14

    Identification and Learning ..................................................................................................... 15
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>48</td>
</tr>
<tr>
<td>Chapter 3: Methods</td>
<td>50</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>50</td>
</tr>
<tr>
<td>Description of the Setting</td>
<td>53</td>
</tr>
<tr>
<td>Description of the Participants</td>
<td>53</td>
</tr>
<tr>
<td>Informed Consent and Protection of Human Subjects</td>
<td>54</td>
</tr>
<tr>
<td>Qualitative Case Study Methodology</td>
<td>54</td>
</tr>
<tr>
<td>Survey Methodology</td>
<td>55</td>
</tr>
<tr>
<td>Case Study Methodology</td>
<td>56</td>
</tr>
<tr>
<td>Instrumentation</td>
<td>57</td>
</tr>
<tr>
<td>Interviews/Focus Groups</td>
<td>57</td>
</tr>
<tr>
<td>Survey</td>
<td>58</td>
</tr>
<tr>
<td>Procedures</td>
<td>59</td>
</tr>
<tr>
<td>Parent Recruitment</td>
<td>59</td>
</tr>
<tr>
<td>Student Recruitment &amp; Procedures</td>
<td>60</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>61</td>
</tr>
<tr>
<td>Student Survey</td>
<td>61</td>
</tr>
<tr>
<td>Student Webinars</td>
<td>61</td>
</tr>
<tr>
<td>Student Reflection</td>
<td>62</td>
</tr>
<tr>
<td>Analysis &amp; Coding Procedures</td>
<td>62</td>
</tr>
<tr>
<td>Coding</td>
<td>62</td>
</tr>
<tr>
<td>Validity, Reliability, Trustworthiness</td>
<td>64</td>
</tr>
</tbody>
</table>
List of Tables

Table 4.1 Parent’s Emotions and Perceived Children’s Emotions – Transition to High School..85
Table 4.2 Actual Student Emotions – Transition to High School……………………………….87
List of Figures

Figure 2.1 Anatomy of a Gifted Learner Conceptual Framework……………………………………48
Figure 3.1 Mixed Methods Research: Explanatory Sequential Design…………………………….51
Figure 3.2 Mixed Methods Research Study Components…………………………………………52
Figure 4.1 Parent-Facing Executive Skills Questionnaire (by Skill)………………………………..93
Figure 4.2 Parent Perceptions of Child’s Executive Function Proficiency……………………….94
Figure 4.3 Student-Facing Executive Skills Questionnaire (by Skill)………………………………96
Figure 4.4 Student Perceptions of Their Own Executive Function Proficiency…………………97
Figure 5.1 Anatomy of a Gifted Learner Conceptual Framework (Revised)………………………115
Chapter 1: Introduction

Support for gifted learners has been an ongoing tension in education for the past two centuries (Brown & Wishney, 2017). In 1989, American educational psychologist John F. Feldhusen wrote an article for Gifted Child Today magazine titled, “Why the Public Schools Will Continue to Neglect the Gifted” posited that gifted students did not receive instruction that met their unique needs. When predicting the future of gifted education, he stated, “[Despite] the views I have presented so far, it seems likely that many school programs for the gifted will continue as very weak pullout services (Cox et al., 1985)” (p. 57). Hundreds of teachers, parents, and support staff members whose main goal is to support this distinctive, frequently misunderstood, population of students have echoed this sincere concern about the support of gifted students nearly 35 years later.

Not only has the neglect of gifted students in America’s public schools continued, but its effects have had dire consequences to education. Soon after Feldhusen published his article, another article with a similar undertone was penned by Elsie Robertson (1991), titled “Neglected Dropouts: The Gifted and Talented”. In the article, author Elsie Robertson (1991) stated, “Gifted dropouts appear on a self-actualizing quest; the wanderlust is a means to an end that may not be fully understood but is an affective and cognitive component of identity development as they strive for their niche in the world” (p. 67). Robertson delivered the call to action to encourage change within the public school systems to support the gifted population. She proposed the conduction of research to uncover the prerequisites that would contribute to the retention of gifted students within educational institutions, as well as the approaches that are essential for providing them with the required support until they successfully complete their studies.
In the year 2005, just after the turn of the new millennium, a prominent researcher named Joyce VanTassel-Baska, widely recognized as a leading figure in the domain of gifted education, authored an article entitled "Gifted Programs and Services: What are the Non-Negotiables?" In it, she noted that “in the era of No Child Left Behind (NCLB), one population has been neglected” (p. 90) and chastised public schools in America for failing to put the introductory provisions in place to meet the needs of gifted and talented learners. She cited differentiation, problem-based learning, and higher-level questioning techniques as simple strategies that regular education teachers could utilize to begin to meet the needs of gifted students who were entrenched in disengagement and yearning for more rigor, sitting directly in front of them daily (p. 94-95).

Nearly a quarter of the way through the 21st century, gifted education in public schools has not yet evolved into a vehicle that supports, encourages, and inspires the very students it is meant to serve. At a minimum, educators would expect that with the United States’ technological advancements, that those in education could find a way to support gifted students. Unfortunately, despite the innovative thinking needed to accomplish so much technologically, very little has changed in supporting gifted students, a problem that still plagues American public schools today.

Teachers’ lack of support for gifted students in the United States reveals several factors or tensions within gifted education, resulting in a trickle-down effect. The overarching issue is the lack of federal funding for education including the subsections of special and gifted education (Van Tassel-Baska, 2018). Because of the lack of funding, there are fewer resources for pre-service teaching programs to offer courses solely teaching about the gifted student population that all education professionals encounter daily (Plunkett & Kronborg, 2021). The
consequences of ill-equipped teachers trained to teach and support gifted learners are academic and social-emotional: a lack of differentiation, acceleration, and enrichment, and a misunderstanding of gifted students as a whole child, with their social-emotional differences and predisposition to mental health challenges.

A single study by a teacher-researcher may not be enough to change the political landscape impacting education funding, and one single study would not help to change the expectations of post-secondary school course offerings. However, one single study can educate parents of gifted students and their gifted children on the uniqueness and diversity of this often misunderstood and underrepresented population in American public schools. Primarily, these are the skills that many of these students do not have opportunities to practice in their academic tenure leading up to the transition to high school. Reis et al. (1995) illustrated this notion in their study when one student’s comment reflected the attitude of most students involved in the survey about why gifted students drop out of high school: “Elementary school was fun. I always got A’s on my report card. I never studied when we were in class, and I never had to study at home” (p. 164).

When gifted students transition from elementary and middle school to high school, they must transfer skills they never needed to use before. Like the sentiments of the high school student mentioned in Reis et al.’s (1995) research, the need to study (or use working memory for recall) is one of these critical skills, which could fall under the broader scope of executive functions, which, in addition to working memory, include inhibitory control and cognitive flexibility.
Problem Statement

Many gifted students have not needed to engage with executive functioning skills as deadlines have become more flexible, grading more lenient, and instruction sometimes on a screen with access to search engines, artificial intelligence, and video games only a click away. Considering that the recent pandemic was a stressful time for many and, more notably, adolescents, it is unsurprising that children's executive functioning skills have suffered (Lavigne-Cerván et al., 2021). The National Child Traumatic Stress Network stated, “In adolescents from 13 to 18, in addition to physical symptoms, sleep problems or isolation, and increased or decreased energy, higher rates of apathy or inattention [were] expected” (p. 6). The struggle of learning through the pandemic disproportionately harmed students, particularly those from marginalized groups (Talafha, 2022). Surprisingly, one specific group of students struggled with executive functioning skills such as task initiation and time management throughout the pandemic: gifted students (Guilbault & McCormick, 2022). With the increase in stress and anxiety that Gen Z students face, students identified as “gifted” are at a heightened risk for depression and suicide (Andrews, 2014). Furthermore, Klimkeit et al. (2011) found that adolescents with depression and/or anxiety disorders showed deficits in working memory and processing speed—two essential executive functions. Many have since begun promoting mindfulness practices to foster and hone executive functioning skills (Sisk, 2021) for the sake of gifted students’ mental and emotional health.

Purpose of the Study

This study aimed to determine the need and effectiveness of explicitly teaching executive functioning skills to gifted middle school students before entering high school, and how this instruction impacts their negative emotions about the transition. An explanatory sequential
mixed-methods design ensures the collection of quantitative data, and then explains the quantitative results using in-depth qualitative data. This study utilized a pragmatic worldview and a qualitative case study design (Yin, 2014).

**Significance of the Study**

As gifted adolescents progress through the primary and intermediate levels of their educational trajectory, the way they are required to acquire knowledge is structured and supported, hence minimizing the necessity for them to cultivate and refine executive functioning abilities that are crucial for their secondary schooling and subsequent endeavors (Rakow, 2021). The lack of necessity to use executive functioning skills became even more apparent during the COVID-19 pandemic (Guilbault & McCormick, 2022). This struggle becomes increasingly more pronounced when students opt to take advanced placement (AP) classes upon their entrance into high school, wherein building the background knowledge before coming to class is solely up to students on their own time, necessitating the use of advanced executive functioning skills (Thai et al., 2021). This shift in independence and ownership of learning can impact gifted students detrimentally, as this population often bases a substantial portion of their identity on being “smart” (Haberlin, 2015). Should gifted students meet hardship and need to employ a sense of grit, determination, and a growth mindset, something foreign to their educational experience thus far, this can only further the anxiety and depression gifted students are already predisposed to (Moreschi, 2022). Nevertheless, it is plausible to hypothesize that providing explicit instruction to students regarding the concept of executive functioning and equipping them with various strategies to enhance these skills prior to their enrollment in Advanced Placement (AP) classes may result in a reduction of anxiety and depression levels, particularly during the process of selecting courses for high school (Doss & Bloom, 2018).
Research Questions

This study examined the research question, *in what ways does explicit instruction on executive functioning support students in their transition to the secondary level?*  

Three sub-questions guided this inquiry:

(1) What is the role of giftedness and gifted culture in the development of students’ sense of self?

(2) In what ways does direct instruction about executive functions contribute to gifted students and their caregivers’ perceptions of emotional well-being regarding their transition to the secondary level (high school)?

(3) In what ways does explicit instruction about executive functions contribute to gifted students and their parents’ perceptions of academic readiness regarding their transition to the secondary level (high school)?

In the following section, I provide a rationale for answering this research question through a qualitative case study. I measured students’ perceived comfort, confidence, independence, and preparedness both before and after they had received explicit instruction in honing executive functioning skills.

Rationale for Methods

As the researcher, I chose a qualitative design using case study methods, with the following instruments: surveys, focus groups, and reflection opportunities (Creswell & Clark, 2018). Since the goal of the study was to examine the nuances of the experience of the gifted student culture in the state of Pennsylvania, I also chose to look at the research through a transformative lens, or paradigm; wherein the gifted community will benefit from the knowledge gained through the study and its implications are shared with those who are stakeholders within
the community (Mertens, 2003 & 2010). I chose to view this qualitative study in two parts: The qualitative surveys and the qualitative case study and revised my theoretical frameworks as they best fit the type of research being conducted. The initial qualitative aspect of the study involved soliciting parents' perspectives on the impact of gifted culture on their child's executive functioning skills. Furthermore, the survey conducted using the Qualtrics platform aimed to collect the perspectives of students on this issue. As a result, the initial phase of the study adopted a post-positivist perspective, since the survey provided insights for the qualitative component of the research, at which point I transitioned to a constructivist framework (Creswell & Clark, 2018). In the latter portion of the study, I facilitated a focus group with student participants, employing semi-structured questions that was guided by the insights obtained from the surveys. This approach aimed to build upon the existing data (Creswell & Plano Clark, 2018) and inform the development of content for student webinars. These webinars were intended to provide a structured platform for students to enhance their executive functioning abilities, thereby facilitating a smoother transition to the secondary level of their academic pursuits. Finally, after participants had interacted with all other facets of the study, I asked student participants to reflect on their experience via a Qualtrics questionnaire to further empower them to critique the study itself and to keep them involved in making future research an even better fit for others (Creswell & Plano Clark, 2018).

**Definition of Terms**

In this section, I define relevant terms in the field of gifted education that I used in this study.

*Parents:* Although the term appears throughout this research study, this term refers to the child’s legal guardian, which could include any primary caregiver.
"Gifted Student: This study takes place in the state of Pennsylvania; hence the state’s definition will be used; Pennsylvania Chapter 16 (22 Pa. Code § 16.21) defines a gifted student as:

“A person who has an IQ of 130 or higher or when multiple criteria as set forth in this chapter and in Department Guidelines indicate gifted ability. Determination of gifted ability will not be based on IQ score alone. Deficits in memory or processing speed, as indicated by testing, cannot be the sole basis upon which a student is determined to be ineligible for gifted special education. A person with an IQ score lower than 130 may be admitted to gifted programs when other educational criteria in the profile of the person strongly indicate gifted ability. Determination of mental giftedness must include an assessment by a certified school psychologist.

(e) Multiple criteria indicating gifted ability include:

(1) A year or more above grade achievement level for the normal age group in one or more subjects as measured by Nationally normed and validated achievement tests able to accurately reflect gifted performance. Subject results shall yield academic instruction levels in all academic subject areas.

(2) An observed or measured rate of acquisition/retention of new academic content or skills that reflect gifted ability.

(3) Demonstrated achievement, performance or expertise in one or more academic areas as evidenced by excellence of products, portfolio or research, as well as criterion-referenced team judgment."
(4) Early and measured use of high-level thinking skills, academic creativity, leadership skills, intense academic interest areas, communications skills, foreign language aptitude or technology expertise.

(5) Documented, observed, validated or assessed evidence that intervening factors such as English as a second language, disabilities defined in 34 CFR 300.8 (relating to child with a disability), gender or race bias, or socio/cultural deprivation are masking gifted abilities.”

Executive Function: the mental processes that enable humans to plan, focus attention, remember instructions, and juggle multiple tasks successfully. Specifically, working memory, inhibitory control, and cognitive flexibility (Cartwright, 2012).

Working Memory: the part of short-term memory that is concerned with immediate conscious perceptual and linguistic processing (Potter, 2012).

Inhibitory Control: the ability to suppress or countermand a thought, action, or feeling; controlling automatic urges (attention, behavior, thoughts, and emotions) by pausing, then using attention and reasoning to respond appropriately (Bari & Robbins, 2013).

Cognitive Flexibility: the ability to switch between thinking about two different concepts or to think about multiple concepts simultaneously; the brain’s ability to adapt to new, changing, or unplanned events (Heilman et al., 2003).

Summary

Research suggests that explicitly teaching about executive functions and utilizing mindfulness (Schonert-Reichl et al. 2015), metacognition (Espinet et al., 2013), and brain training (Rabipour & Davidson, 2015) coupled with rewards and motivation (Doebel, 2020) can increase the transfer of executive functioning skills to daily life (Espinet et al., 2013). In
addition, the research addresses the notion that if students are equipped with strategies to successfully use executive functioning skills, the symptoms of anxiety and depression are lessened --- two mental health disorders with which gifted students are notoriously diagnosed (Ganesan & Steinbeis, 2022).

This study followed a qualitative single case-study design. (Morgan, 2014). Specifically, Phase 1 of the study included two surveys (self-reported executive function and emotions about transition to high school) during the parent webinar, one for parent participants and one for student participants. Phase 2 of the study commenced when the student participants engaged with one another in the focus group and again within the three instructional seminars and final reflection. Finally, I collected qualitative data through a single-case study (embedded) design by analyzing the student participants’ reflections. In the next chapter, I illustrate the relevant literature and theoretical framework that shaped this study.
Chapter 2: Literature Review

Gifted students comprise one to two percent of the population in the United States (Grier, 2020). In gifted education, educators have shifted from simply identifying individuals as gifted to actively developing their giftedness, emphasizing the importance of honing one’s cognitive skills throughout their lifetime (Lo & Porath, 2017). Currently, the Pennsylvania Department of Education (2023) defined being mentally gifted as the possession of “outstanding intellectual and creative ability, the development of which requires specially designed programs or support services, or both, not ordinarily provided in the regular education program” (p. 4). Research on high-achieving adolescents found that over 70% of teachers acknowledged that their most exceptional learners were not adequately stimulated or provided opportunities to excel within their educational environments (Loveless et al., 2008). Moreover, providing gifted students with specialized programming is often necessary, as the current general education curriculum is insufficient to meet their unique needs (Hertberg-Davis & Callahan, 2013). Despite the overwhelming need for gifted education, no federal mandate dictates what gifted education should look like nationally (Robinson & Deitz, 2022). Consequently, each state’s education department is responsible for determining what gifted services, and consequently gifted education, should look like for gifted students, resulting in a great deal of variation in programs from district to district (Robinson & Dietz, 2022).

The History and Culture of Gifted Students

The policy landscape in the field of gifted education can be characterized by a fragmented and heterogeneous collection of legislative and administrative guidelines, primarily implemented at the state level (VanTassel-Baska, 2009). Despite the presence of a federal definition and a limited budget, the No Child Left Behind Act, which primarily aimed to enhance
academic performance among underperforming students, resulted in the neglect of gifted education as a focal point for federal consideration (Robinson & Deitz, 2022). All 50 states have implemented legislation about gifted and talented learners, yet there exists a divergence in policies that hinders achieving a cohesive, complete, and inclusive national reform in gifted education (VanTassel-Baska, 2009). As a result of a nationwide directive, the development of policies and the allocation of financial resources are often delegated to stakeholders' initiatives within each respective state, and Pennsylvania is no different.

**Gifted Services in Pennsylvania**

The website of the Pennsylvania Department of Education (PDE, 2023) highlights the state's dedication to offering customized educational programs for exceptional kids, indicating the presence of a unique tradition of gifted education in Pennsylvania. The alteration of the term "handicapped education" to "exceptional education" in the Public School Code of 1949 in 1961 serves as a notable illustration of this differentiation. Act 546 of 1961, through its amendment, granted the state the authority to allocate funds for the identification and funding of programs catering to gifted students. This provision was unprecedented in comparison to other states. In the year 1975, the State Board made an official declaration about the provision of a suitable educational program for students with exceptionalities, with the aim of addressing their unique requirements. The Board offered a more precise elucidation of the term "exceptional persons" as "individuals who are of school age and demonstrate deviations from the norm to such an extent that they require specialized educational programs and support services" (24 Pa. Stat. § 13-1371). Gifted students encompass individuals who possess outstanding abilities that differ from the norm, hence necessitating specialized activities or services that are not typically offered to regular children by local authorities (24 Pa. Stat. § 13-1372). In the year 1975, the courts in
Pennsylvania reiterated the entitlement of gifted students to similar rights as students with disabilities. In 1989, the General Assembly issued a directive to the State Board of Education and the Department of Education, instructing them to undertake a comprehensive revision of the regulations and standards pertaining to special education, which encompassed the domain of gifted education as well. In response to the matter, the State Board and the Department proceeded to develop new regulations and standards, which came into effect on July 1, 1990. These regulations are found in 22 Pa. Code Chapter 14, while the corresponding standards are outlined in Chapter 342. Notably, these measures were specifically designed to address the needs of gifted individuals. The state revised the regulations in December 2000 and subsequently modified them once more in November 2008.

**Pennsylvania’s Title 22, Chapter 16**

Currently, Pennsylvania’s Title 22, Chapter 16 legislation maintains uniformity in the identification of pupils and the screening procedures implemented throughout various districts within the state. The presence of a discrepancy, which consequently leads to inequity, can be attributed to the lack of clarity surrounding the anticipated program and curriculum delivery methods for students identified as gifted. The educational approach for gifted students should encompass elements such as acceleration, complexity, depth, challenge, and originality (VanTassel-Baska, 2023). According to Gilson et al. (2023), the implementation of strategies that encompass content, process, learning environment, and product is crucial in establishing a comprehensive framework and practical measures to ensure the provision of high-quality teaching for talented kids. Additionally, there is no legal requirement that anyone involved in providing gifted education must have specialized training in the pedagogy and education of gifted learners; rather, teachers are only required to possess a valid teaching certification.
The state has given local school districts the responsibility of facilitating the attendance of gifted educators at appropriate state, regional, and national conferences, and teleconferences (Guilbault et al., 2022). Frequently, these developmental possibilities impose a financial burden on taxpayers and school districts, leading to the inference that the state employs the term "encouragement" to absolve school district officials of the responsibility of funding such initiatives (Guilbault et al., 2022). This situation creates a disparity between those who possess resources and those who do not. Specifically, wealthier districts have the capacity to offer training to a significant number, if not all, of their teachers specializing in gifted education, whereas non-affluent districts may lack this capability (Peters, 2022).

**Defining Gifted Populations: A History of Theoretical Frameworks**

The debate concerning whether giftedness in the educational sense is innate (Delisle, 2021) or whether individuals develop these talents over time is well-interrogated (Horowitz et al., 2009). In the past, researchers have expanded on these concepts further by proposing that gifted and talented students require opportunities to explore their passions and interests to have their unique areas of giftedness emerge (Gagné, 1985; Renzulli, 2016), while other researchers combine these ideas and choose to factor in the social and emotional well-being of the gifted learner (Betts & Neihart, 1988; Dabrowski, 1964; Hollingsworth, 1942). The following analysis details the diverse views created by scholars regarding the anatomy of a gifted learner. This analysis encompasses the methods educators employ to identify gifted and talented learners, the exceptional aptitude of these learners for acquiring knowledge, and their distinctive manner of perceiving and responding to their surroundings.
Identification and Learning

The identity of a gifted student is multi-faceted (Mahoney, 2001). Consequently, scholars have endeavored to establish clear definitions for giftedness and talent, ascertain the identification of students who demonstrate these attributes, and discover the most effective methods for facilitating the educational development of these individuals (Renzulli et al., 2023). Gagné (1985) and Renzulli (2005) both put forth notable theories that, despite having different viewpoints on identification, have similar ideas about how to foster the unique culture of gifted students effectively (Dai & Chen, 2013).

Differentiated Model of Giftedness and Talent (Françoys Gagné). Many educators and education professionals who interact with gifted and talented students tend to agree that the best way to help this population of students thrive is to provide them with more enriching opportunities, as well as a broader range of challenges across the curriculum (Moltzen, 2021). Gagné (1985) described the necessary learning requirements for this population of students to develop their abilities in the Differentiated Model of Giftedness and Talent (DMGT). In his theory, Gagné (2004) argued that a person's potential or aptitude can transform into talent (developed abilities) through various factors, such as their learning environment. This paradigm examines what a person must do to transform an intrinsic ability into a learned skill (Gagné, 2009). Gagné defined giftedness as 'natural' competencies that are manifested through the ease and rate at which individuals acquire new skills; picking up new concepts appears to be simpler and more rapid in individuals who have exceptional inherent abilities, but such abilities must go through a process of growth before being demonstrated as 'talents' (systematically developed skills); developing talent necessitates thorough investigation and exercise, and the greater the extent of the learning and exercise, the deeper the advancement of the talent. According to the
DMGT, inherent abilities may not translate into talents, although one cannot be talented without first being gifted (Gagné, 2005). Therefore, the academic underperformance of some cognitively exceptional students may be attributed to their inability to participate fully in the developmental process (Ronksley-Pavia & Neumann, 2020).

**Three-Ring Conception of Giftedness (Joseph Renzulli).** While sharing much of the same characteristics as Gagné’s DMGT theory, Joseph Renzulli’s Three-Ring Theory of Giftedness (1986) focuses on an individual’s behavior and only applies to some individuals, not all. Renzulli’s “three rings” represent three clusters of characteristics: above-average aptitude, creativity, and commitment to the task (Brown et al., 2005). According to Renzulli (2016), these three characteristics interact to produce creative accomplishments (i.e., behaviors). Similarly to Gagné (2004), Renzulli maintained that students who exhibit sufficient levels of these characteristics or who have the potential to do so require additional opportunities and challenges outside of the regular classroom (Reis & Renzulli, 2004). In addition, Renzulli & Reis observed that these three rings do not exist in a vacuum (2016); personality and environmental factors establish contexts for developing the three rings (2021). The potential influence of co-cognitive elements on the development of social and intellectual capital is worth exploring. The factors encompassed in this context comprise optimism, courage, a fervent interest in a particular subject or field, attentiveness to human concerns, robust bodily and mental well-being, and a perception of personal purpose (Renzulli & Reis, 2021; Renzulli, 2016). Dong et al. (2022) explored the interplay between personality factors and cognitive features in shaping the developmental potential of students.

**Profiles of the Gifted and Talented Framework (George Betts).** Betts and Neihart (1988) have critiqued many ideas that aim to explain the identification process and distinctive
learning capacities of gifted and talented learners. They espoused these theories fall short of acknowledging the distinctive attributes that define the essence of gifted individuals (p. 248). Before deciding how to support a gifted student's learning, he hypothesized that educators and families must carefully consider the student's emotions, behaviors, and needs (Betts, 1986). To prioritize education as the ultimate goal, Betts and Neihart (1988) created a matrix of six gifted adolescent profiles, ranging from successful to underachieving. The intention was that those who worked with gifted youth would use the matrix as an initial step in identifying the "type" of gifted student they were working with and to determine their needs accordingly (VanTassel-Baska & Brown, 2021). After obtaining a comprehensive understanding of the talented student's characteristics and abilities, the parent or educator can implement instructional strategies that are tailored to the student's specific needs, thereby enhancing the effectiveness of the educational process (Ford, 2012). Betts (1985) argued that the Autonomous Learner Model (ALM) is grounded in a post-positivist perspective, wherein the talented student is viewed as an active participant in constructing knowledge alongside the instructor. This approach emphasizes the importance of allowing students increased autonomy and control over their own learning. Betts and Kercher (1999) stated, "An autonomous learner, by definition, solves problems through a combination of divergent and convergent thinking and functions with minimal external guidance in selected areas of endeavor" (p. 14). Through the Autonomous Learning Model, students not only determine their own learning requirements, but also establish their own learning objectives and strategies for attaining those goals and evaluate their own growth as learners (Siegle et al., 2016). The work of numerous other scholars who prioritized gifted students’ social and emotional well-being complemented Betts and Neihart's examination of the cognitive and affective aspects of gifted students' educational experiences, emphasizing agency cultivation.
Examining the socio-emotional dynamics within the gifted intellect is a well-established subject of inquiry (Plucker & Stocking, 2001). In fact, Terman (1925) and Hollingsworth (1942) were the first researchers to study this phenomenon, which covered the synergistic relationship between high intellect and the social and emotional well-being of highly gifted students (Wood & Laycraft, 2020). Following Terman and Hollingworth, numerous scholars have undertaken the task of advancing their initial work, aiming to enhance the understanding of professionals who work with gifted individuals. Consequently, these efforts seek to enable these professionals to adequately address the multifaceted academic, social, and emotional requirements of students classified as gifted (Eren et al., 2018).

**Theory of Positive Disintegration (Kazimierz Dąbrowski).** Among the academics who have engaged with this thematic discourse, Kazimierz Dąbrowski emerges as a prominent figure. He is notable for the origination of his Theory of Positive Disintegration in 1964, a seminal contribution that has yielded valuable insights into the psychological requisites associated with gifted individuals. According to this theory, individual development has five levels, and individuals with greater emotional intensity (i.e., gifted, and talented students) have more intuitive access to the increasingly complex ones (Dąbrowski & Piechowski, 1977). These intense emotional states are known as overexcitabilities, that augment the natural ability to react to stimulants and indicate abundant physical, sensual, creative, intellectual, and emotional energy, resulting in creative endeavors and advanced emotional and ethical development despite causing inner turmoil (Dąbrowski, 1964).

In addition, Dąbrowski's theory includes five levels of development: primary integration (Level 1), uni-level disintegration (Level 2), spontaneous multi-level disintegration (Level 3),
organized multi-level disintegration (Level 4), and secondary integration (Level 5) (Nelson, 1989). Level 1 students may overcompensate for their lack of empathy and self-examination with ego, blaming outside variables for their failures (Nelson, 1989). Level 2 students lack a strong moral compass and are susceptible to peer pressure to fit in, whereas students in level 3 have developed a robust code of ethics, and their inner conflict centers on how to rise to these higher expectations; if they do not, they experience anxiety or depression (Mendaglio & Tiler, 2006). Students at Level 4 have figured out how to achieve their ultimate goal and are mindful and self-sufficient in thought and action; finally, at Level 5, students have overcome their sense of self and act with the utmost empathy, doing that which will benefit the common good of humanity (Nelson, 1989). This Theory of Positive Disintegration is what many in the field of social and emotional well-being of gifted learners use as the basis for their own research (Mendaglio & Tiler, 2006).

The Theory of Asynchronous Development (Hollingsworth & The Columbus Group). Asynchronous development is also a significant factor in how gifted students respond to their social environment, contributing to their emotional well-being (Peterson & Jen, 2018). Through her research on the discrepancy between cognitive and emotional intelligence, Hollingsworth (1942) found that the further a child’s numeric age is from their intellectual age, the more difficult it is for them to adjust socially and emotionally (Silverman, 1990). This idea of asynchrony carried over into The Columbus Group’s efforts to redefine giftedness in 1991 (Andronaco et al., 2014). Neville et al. (2013) reported that The Columbus Group defined asynchrony as “development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm. This asynchrony increases with higher intellectual capacity” (p. 21). Today, it is a widely
accepted notion that exceptionally gifted individuals are asynchronous (Pfeiffer & Prado, 2018), implying that giftedness and asynchrony are synonymous. Nearly ten years before The Columbus Group’s new definition of giftedness, Annemarie Roeper (1982), who was also an integral part of The Columbus Group’s research team, had eloquently noted that “emotions cannot be treated separately from intellectual awareness or physical development. Gifted children's thoughts and emotions differ from those of other children, so they perceive and react to their world differently” (p. 21).

Addressing the social and emotional well-being of gifted students can help them realize their intellectual potential (Neihart & Yeo 2018). The rising stress and anxiety that "gifted" Gen Z students experience exacerbates their increased risk of depression and suicide (Winsor & Mueller, 2020). Klimkeit et al. (2011) found that adolescents with depression and/or anxiety disorders showed deficits in working memory and processing speed—two essential executive functions. Educators, school counselors, and psychologists have since begun promoting mindfulness practices to foster and hone executive functioning skills (Sisk, 2021) for the sake of gifted students’ mental and emotional health. Present and future researchers must continue shouldering the responsibility of advancing this scholarly endeavor to gain a more profound understanding and offer crucial support to the marginalized community of gifted students (Ford et al., 2023).

**Tensions in Gifted Education**

Despite the extensive body of data on gifted individuals' distinct learning requirements and socio-emotional welfare, tensions within gifted education are a source of discouragement. A fitting point of departure involves recognizing and examining a historical backdrop in which the aforementioned researchers historically deployed intelligence theories to perpetuate educational
disparities for Black and Brown students. This initial step holds significance, as the resultant inequities have pervasive implications across multiple dimensions of gifted education, encompassing identification methodologies, program provisions, teacher preparation, and advocacy, among other aspects. The following section’s main goal is to illuminate the tensions that currently exist in the field of gifted education and to explain previous researchers' suggestions for strategies to reduce these tensions.

**Definition of “Giftedness”**

According to numerous scholars who have made it their life's work to research the culture of the gifted (Dai, 2020; Renzulli, 1978, 1984, 2005; Sternberg, 2021), there is no definitive proof of a delineation between those who are “gifted” and “non-gifted.” Instead, the research addresses many variations of what it means to be gifted (Renzulli, 2009). As Sternberg (2022) points out, giftedness is “a sociocultural labeling process rather than some intrinsic property of humans that labels them as one thing or another” (p. 231-232). Given the pervasive disparities in public education in the United States, where students from different races, ethnicities, and socioeconomic backgrounds receive disparate resources and standards of support (Worrell & Dixson, 2018), these imbalances also affect the area of gifted education. Identification of Gifted Students

Acknowledging the presence of marginalization in the realm of identification, qualification, and the extent of services provided is paramount. Mun et al. (2021) and Peters et al. (2019) supported this claim, highlighting the existence of marginalization. Furthermore, Dixson et al. (2020) argued that numerous gifted programs have been excessively exclusive, a trend that persists today. Specifically, Black, Latinx, and Indigenous American students are significantly underrepresented in gifted education compared to their overall K–12 student
population, as are students who receive services through special education and English language learner programs (Peters, 2022). In contrast, some Asian (e.g., Chinese, Korean) and White students are overrepresented at a disproportionate rate (Peters, 2022). If those in power were to be more inclusive in the identification process, the result would only benefit more students (Card & Giuliano, 2016). Still, this would mean the dismantling of a system that has been inherently racist since its’ conception (Kohli et al., 2017), starting with the identification process itself.

The task of identifying gifted individuals has consistently faced significant challenges, even in its best iterations (Sternberg, 2021). The only criteria used to determine success and, consequently, a level of giftedness are those that American culture values (Lubinski, 2016), such as academic achievement and awards (Sternberg, 2022). Silverman (2009) noted that intelligence quotient (IQ) test results typically craft their norms from all population groups in the U.S. census, arguing that this practice results in a foundation for an unbiased gifted identification process. Sternberg (2022), however, disagrees, stating that “the list of variables on which higher-IQ children are advantaged is so long and mutually interactive that it would be impossible to identify all the variables and certainly to control for them all” (p. 233). Similarly, in 2018, the National Association for Gifted Children (NAGC) released a statement noting that the Full-Scale IQ (FSIQ) score is not an accurate data point, and hence should not be used, when identifying gifted students citing test biases and an inability to identify marginalized students. Instead, the NAGC (2018) positions the use of comprehensive, individual intelligence tests such as the WISC-V (Wechler, 2014) (Silverman & Gilman, 2020). That said, Sternberg (2022) asked whether a test solely developed by “white males living middle- or upper-middle-class lives” (p. 238), rather than by a diverse group of scholars that represent the students in today’s America, is a worthwhile measure in the identification process.
Further still, Peters (2022) questioned whether tests measure an individual’s “true score” at all, using classical test theory (CCT; Lord et al., 1968) to support his stance, as CCT posits that tests only measure an individual’s “observed score” by proxy. Swanson et al. (2021) suggested that classroom teachers act as “talent scouts,” citing Gubbins et al.’s talent-based approach (2020) as a means to identify gifted students within the classroom. Carrying out this ideal successfully would mean that teachers must first be taught to understand the unique innerworkings of gifted student culture through their academic journeys to becoming educators. While this is seemingly presented as an excellent idea, it also creates tension in gifted education as a result of the lack of teacher training and professional development across school districts.

Teacher Training and Professional Development

Researchers have repeatedly identified educator deficit beliefs as one of the many reasons for the number of students traditionally underrepresented in gifted programs nationwide (Mun et al., 2020). Colangelo et al. (2004) noted that students identified as intellectually gifted need qualified teachers who understand their uniqueness in how they learn and their social-emotional well-being. In 2008, the Higher Education Opportunity Act stated that all teacher candidates were to receive training that would ensure they were able to meet the needs of all students in their classrooms (Peters & Jolly, 2018); however, as many as 58% of in-service general education teachers report having little to no training in gifted education (Farkas and Duffet, 2008). With a lack of training comes misconceptions and stereotypes surrounding gifted students in the classroom, further perpetuating classroom teacher biases (Allen, 2017). That said, even minimal training on the various teaching and learning strategies often reserved for gifted learners could greatly impact the entire student population when used in a general education classroom.
Providing differentiation for gifted students is crucial, and the potential benefits it offers to the learning community alone justify its implementation.

**Differentiation for the Gifted Student**

Most gifted students' time is spent in general education classrooms, and research indicates that many who already know between 40% and 50% of the curriculum before the start of the school year (NAGC, 2008). This acquired knowledge on the part of gifted students necessitates additional planning and preparation for general education instructors to do more than assign additional work or rely on gifted students as "tutors" for peers who require remediation (Berman et al., 2012). There are many intellectual and psychological facets of exceptional students, which Sayi (2018) noted as including “rapid understanding of intricate concepts, rapid awareness of interpersonal relationships, attention to detail, adaptable thinking, thorough synthesis, comprehensive learning and autonomy, profound emotional awareness, and high awareness of themselves” (p. 263). Gifted students also ruminate on risk analyses, employing speculative concepts, deriving inferences, generalizing, visualizing, and applying an understanding of figurative language (Eren et al., 2008). Thus, gifted children require a differentiated, accelerated, and enriched educational program. Therefore, providing gifted students with challenging opportunities to struggle and demonstrate fortitude is the cornerstone of an effective program for gifted students (Sayi, 2018). Researchers in the neurological field concur, noting that learning only occurs when the brain is sufficiently activated (Caine & Caine, 1991). If the educational experience or learning journey remains stagnant and uninspired for gifted populations, learning does not take place since these students are neurologically unable to engage (Sayi, 2018); when tasks are insufficiently difficult, the proper chemical processes that are crucial for learning within the brain do not occur (Schultz et al., 1997). The intellectual
journeys of gifted students differ from those of their neurotypical peers, as do their social and emotional interactions.

**Social-Emotional Differences in Gifted Students**

One of the leading causes of poor social-emotional well-being in gifted students is that, for the vast majority, the place where they spend their academic tenure does not support their social-emotional needs (Casino-Garcia et al., 2019). Without appropriate ongoing training, general education teachers cannot completely comprehend the demands that gifted students face and how these factors affect their identities, wellness, and capacity to learn in the classroom (Guthrie, 2020). Both intrinsic and extrinsic factors contribute to the pressure these students experience. The responses and requirements of exceptional students fluctuate according to societal demands, educational settings, and norms (Wiley, 2019). Asynchronous intellectual growth and maturation rates in gifted students exacerbate feelings of alienation, difficulties with peer interaction, and stigmatization of gifted students, which begin to develop as early as the age of ten (Cavilla, 2019). In academic discussions and settings, gifted students frequently struggle to distinguish between their sense of self and their own views (Zakreski, 2018). A significant portion of gifted students' identities stem from their gifted label.

Consequently, intellectually talented individuals perceive academic problems as threats to their cognitive abilities, leading to feelings of anger and frustration (Eklund et al., 2015; Peterson, 2015). The presence of cognitive rigidity among gifted children hinders their ability to effectively collaborate with their peers, resulting in negative emotions such as disappointment and discontent that harm their self-perception (Caldwell, 2022). Of significance to these adolescents are educational interventions that target cognitive inflexibility and heightened emotional reactivity, such as teaching gifted students to adopt an open mindset when engaging in
problem-solving activities (Cavilla, 2019). This phenomenon can be attributed to the failure to fulfill the psychological requirements of students within the educational setting, resulting in a higher propensity for engaging in passive-aggressive behaviors commonly observed among young adults (Wiley, 2020). Highlighting the concept that intellectually talented individuals necessitate tailored educational interventions, it is remarkable that this aspect also presents a conflict within the domain of gifted education.

**Curriculum & Programming for the Gifted Learner**

Despite the overwhelming need for gifted education, the fact remains that there is no federal mandate that dictates what gifted education should look like at a national level (Robinson & Deitz, 2022). Hence, the responsibility lies with the education departments of individual states to establish the parameters of gifted services and, consequently, the nature of gifted education for students with exceptional abilities (Robinson & Dietz, 2022). According to Gubbins et al. (2021), the development and execution of programs targeting gifted and talented students necessitate meticulous consideration and strategic preparation (p. 115). Researchers highlighted identification, intervention, infrastructure, and outcomes as the four main parts of this process (Eckert & Robins, 2017). The significance of maintaining a seamless relationship between the identification process and the provision of tailored assistance for talented students has been emphasized over the last thirty years (Lockhart et al., 2022). As a result of the multitude of tactics that have been examined and proven effective in the realm of gifted education programming, the compilation resembles a selection of choices rather than a unified collection of approaches to address the distinct requirements of gifted students.
Individual districts frequently must develop such programs due to the various inconsistent expectations for gifted programming by the Department of Education. The State of the States (2022) highlights:

There is no federal mandate to identify or serve gifted students in the United States, so it is up to states and local education agencies (LEAs) to determine and provide gifted education services in public schools across the nation. This [phenomenon] leads to substantial variation in the quantity and quality of services across and within the states. (p. 14)

Educational authorities, commonly referred to as LEAs, are responsible for the selection of instructors and administrators. Nevertheless, according to Allen (2017), it has been observed by those in the gifted community that these individuals may possess insufficient knowledge regarding the distinctive attributes of gifted children and the most effective approaches for designing a comprehensive program. This situation presents a dilemma for local educational agencies (LEAs) as they are responsible for creating curricula for talented students despite lacking expertise in gifted culture and adequate financial resources to ensure the successful implementation of these initiatives. This phenomenon is associated with an additional source of conflict within the realm of gifted education, namely the allocation of financial resources and the availability of necessary materials.

**Funding & Resources for Gifted Education**

Gifted education is not a priority in the United States. VanTassel-Baska (2018) noted that there has never been a level of consistency when it comes to federal support for gifted education funding. The Javits Act of 1990, which received funding from the federal government, concentrated on identifying and providing services to students who needed them (Swanson,
The findings from the Javits project indicate that the most effective approach to providing enrichment for gifted students, particularly those from disadvantaged backgrounds, is through the tutelage of educators who have received specialized training in this area (Adams & Chandler, 2014). Despite receiving funding for over 25 years and generating substantial data, there is a lack of concerted efforts at the federal level to advocate for the needs of these students, including addressing the aforementioned tensions and formulating strategies to tackle the challenges in gifted education (VanTassel-Baska, 2018). This leaves champions for gifted education unable to advocate for far better than what has always been done.

**Summary**

Nurturing achievement and doing so equitably should go together (Dixson et al., 2020). According to Peters (2022), scholars specializing in gifted education have long been aware of the issue of disproportionality and marginalization within gifted programs. However, until recently, only a small number of individuals have responded to the call to action made by Gentry et al. (2019), urging researchers to adopt a more solution-oriented approach in their studies, rather than merely acknowledging the problem without taking any concrete steps to address it. Considering families are often the first to identify and develop their children’s gifts and talents (Hertzog et al., 2018; Olszewski-Kubilius et al., 2018), Mun et al. (2021) suggested collaboration between schools and families is instrumental in closing the identification gap, especially within underserved, marginalized communities. After the identification of students, a competent team of teachers, administrators, school psychologists, and counselors is required to provide the necessary assistance for identified gifted children' academic success and social-emotional well-being (Windsor & Mueller, 2020).
Further awareness of the unique characteristics of racial/ethnic, socioeconomic, and geographical designations constitutes a prerequisite for closing equity disparities in K–12 programs for gifted and talented children (Hodges, 2018). Hodges et al. (2022) contended that beginning to dismantle the inequities of gifted education would be much more successful if stakeholders considered such distinctions. Mun et al. (2020) reaffirmed that a strong, gifted education program is all-encompassing and requires administrators to encourage and maintain accountability measures to ensure equitable access (Johnson & Fuller, 2014). Scholars in the academic domain acknowledge the existing conflicts and actualities inherent in the realm of gifted education, a situation that will persist unless the emphasis shifts from incessantly identifying the issues to actively seeking and executing resolutions. As educators engaged in research, our professional endeavors are focused on enhancing the educational experiences of our students. We possess the capacity to serve as agents of transformation; we have the potential to be catalysts for change.

The Profile of a Gifted Student

There are multiple concerns pertaining to gifted education that suggest a prevalent lack of understanding and insufficient recognition of this specific demographic. The primary focus of most studies on gifted adolescents is the mental and social-emotional health, as well as the general well-being of this group. This section will thoroughly investigate the misconceptions and extra influencing variables that contribute to this emphasis. Researchers have frequently endeavored to comprehend the associations between intelligence and mental health, resulting in the emergence of two distinct perspectives concerning the mental and emotional well-being of gifted adolescents. Prior to delving into these contrasting perspectives, it is imperative to
ascertain the essential and frequently discernible aspects of intellectually gifted children and their social and emotional reactions to their environment.

**Social and Emotional Facets of The Gifted Child**

Individuals designated as gifted during their early childhood encounter a distinct developmental trajectory as they progress through their formative years. This identification significantly impacts their identity and sense of self, leading them to display characteristics unique to gifted children, perpetuating their perception of being different from their peers and experiencing exclusion due to this difference. As a result, they are at risk of developing depression, anxiety, and suicidal ideation (Windsor & Mueller, 2019). In the following sections, I will examine the factors contributing to the hindrance of talented children from realizing their full intellectual and emotional potential due to the behavioral consequences of their sense of being different.

**Feelings of “Differentness”**. According to Coleman and Cross (1988), it is uncommon for a gifted adolescent to self-identify using the label "gifted" when asked to define themselves. Instead, they will express a feeling of “differentness” (Robinson, 1991; Robinson, 1996), which is an accurate measure considering the two most obvious ways they differ from their peers in ability and motivation (Coleman et al., 2015). Below is a further explanation of how a sense of "differentness“ manifests in these two areas.

**“Differentness” in Terms of Ability**. Educators have long understood that gifted children have an innate ability to rapidly learn, deeply understand, and strongly engage in topics they are most interested in (Coleman et al., 2015). As a result, gifted children can become aware of this atypicality as early as age six (Cross et al., 2003), with awareness only growing and differences becoming more evident as gifted children develop (Coleman, 2005). When gifted students reach
the secondary level of their education, they may view their ability and motivation as unmatched by their neurotypical peers.

“Differentness” in Terms of Motivation. Coleman & Guo (2013) noted that around middle school, gifted students begin or continue developing an unrelenting passion for a topic or cause, which Winner (1996, p. 3) described as “a rage to master.” This intense motivation to learn as much as they can as quickly as they can about the topic of interest can be attributed to strong intrinsic motivation, that is, learning that is solely facilitated and acted upon by the gifted child, not one that is forced upon them for some outward or extrinsic reason (Coleman & Guo, 2013).

Masking “Differentness”: Reasons for a Lack of Ability & Motivation. As Luftig & Nichols (1990) posited, children do not like to be different, and in fact, they prefer to blend in with perceived normalcy. Because normalcy is a gray area, children's perception of their own “differentness” is enough to impact how they carry themselves both behaviorally and intellectually (Coleman, 2015). For gifted children, there are advantages and disadvantages to their label, and the disadvantages make them more inclined to hide their "differentness" (Berlin, 2009).

Perceived Disadvantages of Giftedness. Several perceived disadvantages of giftedness are identified as playing a role in the supposed lack of motivation among gifted students. The first two are specific to students from marginalized populations: Black and Brown students and AAPI (Asian and Pacific Islander) students. For Black and Brown gifted students, culture and ideals come into play when observing ability and motivation. For example, Black culture frequently associates high academic achievement as conformist behavior rather than resisting and combating Euro-centric supremacy (Lundy, 2003; Ogbu, 2004; Coleman et al., 2015).
Further, when Black and Brown students are identified as gifted, they are underrepresented in gifted education (Wing, 2022). Because of the underrepresentation, they then find themselves separated from their Black, unidentified peers, making fostering a sense of community among Black and Brown students even more difficult than it already is in predominantly white schools (Wing, 2022). As Henfield et al. (2008) indicate, Black and Brown students dissociate from their identity as gifted students and mask their intellectual abilities for the above reasons. For AAPI students, the opposite becomes true because of the model-minority stereotype that depicts Asian Americans as the epitome of academic achievement and social adjustment (Coleman et al., 2015). The ever-present struggle to achieve without being stigmatized is at the heart of potential notions of a lack of motivation and ability.

Apart from culture, other disadvantages that plague gifted students in America are bullying (Gallagher, 2019), heightened expectations from parents and school personnel (Seigle et al., 2019), and less-than-adequate support in the delivered curriculum (Mofield & Peters, 2019). These factors contribute to the deterioration of gifted adolescents’ mental health and well-being (Winsor & Mueller, 2020). Below is an explanation of how gifted and talented students experience adverse mental health outcomes and the staggering statistics showing the necessity for those who work with this population to be trained on how to identify these outcomes, and best support students.

**Mental Health of Gifted Students**

Because gifted students rarely describe themselves as such, there is a unique disconnect between their internal dialogue and their outward experiences (Windsor & Mueller, 2020). Unfortunately, similar to how many gifted students choose to hide their advanced intellectual capabilities, they often also hide struggles with mental health (Cross et al., 1991). As a result of
their asynchronous development (Columbus Group, 1991), wherein gifted students develop more quickly intellectually than emotionally (Webb, 2007), gifted students are considered at risk of developing perfectionism, anxiety, and depression, which, when left untreated, can ultimately lead to suicide ideation, attempts, and death (Pfeiffer, 2019).

**Encountering Perfectionism.** Peterson et al. (2018) noted that one of the main contributors to gifted students developing perfectionist tendencies is the immense pressure and high expectations from parents, teachers, and peers. Equating one’s self-worth with intellectual ability is a trap that many gifted students grapple with (Windsor & Mueller, 2020). Because performing to perfection at all times is an unrealistic expectation, gifted students are seemingly inept at dealing with failure when encountered, resulting in overwhelming feelings of hopelessness, helplessness, and worthlessness—feelings associated with depression, which is another adverse mental health concern among America’s gifted adolescents.

**Experiencing Depression.** According to the NAGC’s (2018) report, a startling 10% of gifted teens received treatment for depression symptoms from a qualified healthcare provider. Aside from intentionally hiding their symptoms, gifted students are particularly difficult to identify when exhibiting symptoms of depression. Such symptoms manifest in ways that differ from their non-gifted peers (Malivoire et al., 2019), ranging from being withdrawn socially, underachieving academically, and thinking irrationally (Corson et al., 2018). Though depression does not always lead to suicide ideation or completion, it is a precedent that should be considered a reason for intervention.

**Confronting Suicide.** Andrews et al. (2014) noted that gifted Gen Z students are more likely to have ideations of suicide because of depression but are also more likely to seek professional assistance to cope. Unfortunately, according to Cross & Cross (2019), those who do
not seek help are more successful in suicide attempts than their non-identified peers. In 2020, a report from the CDC identified suicide as the tenth leading cause of death in the United States and the second cause of death for individuals aged 10 to 24 years old (Winsor & Mueller, 2020). This harrowing data serves as a call to action among those who serve and treat students identified as gifted to remain vigilant in recognizing those who exhibit symptoms and those who are seemingly asymptomatic from the outside.

**Coping with Adverse Mental Health.** The educational experience of talented children is multifaceted, requiring them to navigate the complexities of their social and emotional challenges daily. Two prevailing perspectives elucidate the coping mechanisms employed by talented individuals: the protective stance and the vulnerability stance. These two stances will be expounded upon in the subsequent paragraphs.

**The Protective Stance.** The higher cognitive ability of gifted students has been seen by numerous researchers as advantageous in navigating the concurrent stress and problems associated with social and emotional development (Zeidner, 2021). Plucker and Callahan (2008) noted that gifted children experience more success and show increased emotional intelligence when compared to their non-gifted peers, demonstrating a significant amount of tenacity and resilience in challenging life scenarios, and instead viewing them as ways to grow personally and intellectually (Robertson, 2013). Despite this research, there is an opposite stance, the vulnerability stance, which claims the opposite.

**The Vulnerability Stance.** Researchers who are proponents of this stance argue that gifted children are an especially vulnerable population at risk of developing poor mental and emotional health throughout their development (Coleman et al., 2015). Further research cites lofty expectations, societal pressures, and negative stereotyping as typical barriers for gifted
children to overcome and ones that harm their mental and emotional health (Massé & Gagné, 2002). Coupled with the innate competitiveness and perfectionism indicative of gifted children, researchers surmise a negative impact on mental health. However, these two stances on gifted children's mental health and well-being demonstrate yet another tension in the research on this population, making it even more difficult to support these students.

**Impact of Mental Health on Executive Function**

If gifted students are more susceptible to adverse mental health conditions and disorders, one could argue that gifted students are also more likely to experience executive dysfunction, another unfavorable outcome directly resulting from poor mental health. The data indicates a correlation between the two in ongoing neuropsychology research regarding adverse mental health and executive dysfunction (Lin et al., 2022). The following sections identify executive function and how gifted students are impacted.

**Executive Functions and The Gifted Adolescent**

Executive functions (EF) are a group of cognitive processes frequently referred to as executive functioning skills. These processes are essential for controlling and regulating a wide range of higher-level cognitive operations. These skills are not separate; they work together in tandem and are necessary for everyday life, including social interactions, academic performance, and ordinary daily life. Prior to delving into an analysis of the interplay between gifted children and executive function, it is crucial for researchers and educators to initially comprehend the neurodevelopmental aspects of the teenage brain, as well as the specific cognitive abilities encompassed under the concept of executive function.
Studying Pediatric Neurology/Development

Anderson (2014) stated that EF and executive function abilities develop in early childhood and continue into adulthood. Specific brain regions are active during EF usage in humans, and these regions cooperate as a cohesive network. Although the prefrontal cortex is the primary source of EF, the parietal cortex, basal ganglia, amygdala, and hippocampus support these tasks. Finally, the neurotransmitters cortisol, dopamine, and norepinephrine stimulate the brain regions that support EF. These substances are crucial in deciding whether a person can perform typically or atypically (dysfunction). When neurotransmitters reach an average level, the prefrontal cortex plays a crucial role and functions as intended. Conversely, elevated neurotransmitter levels cause stress or anxiety, manifesting as over- or under-stimulation, ultimately leading to dysfunction (Blair, 2017).

According to Ganesan and Steinbeis (2022), adolescence is the essential developmental window for more complicated EF skills as the brain is most malleable and EF skill refinement is most possible during this time. Adolescence, regrettably, is also the height of adverse experiences related to mental health (Bathelt et al., 2021); however, recent research indicates that developing EF could mitigate these events (Ganesan & Steinbeis, 2022). This theory is predicated on the idea that improved cognitive agility and self-control—two of the three EFs covered below—may inhibit worry and rumination, which are often symptoms linked to anxiety and depression.

Twice Exceptionality and Executive Dysfunction. As previously indicated, students classified as twice exceptional comprise a distinct subgroup within the gifted and talented community. Understanding the effects associated with being a twice-exceptional student on executive function has been the goal of several studies. The key finding within these studies was
the conclusion that twice-exceptional students with autism spectrum disorder (O'Hearn et al., 2008), depression (Nelson et al., 2018), anxiety (Shi et al., 2019), obsessive-compulsive disorder (Pietrefesa & Evans, 2007), and attention-deficit hyperactivity disorder (Petrovic & Castellanos, 2016), frequently struggle with EF from an early age. This research is essential for professionals who interact with students who have previously been designated as gifted. However, as executive dysfunction may conceal a student's underlying abilities and disqualify otherwise qualified pupils, the capacity to perform executive functions should also be discussed during the identification process.

**Identifying Executive Functioning Skills**

Neurologists now widely acknowledge that neuronal circuits in the pre-frontal cortex and other brain areas are essential to developing EF skills (Duncan, 2013). To evaluate EF, three abilities are frequently examined: working memory, inhibitory control, and cognitive flexibility (Miyake et al., 2000). According to Duckworth and Seligman (2005), EF is a more reliable indicator than IQ, which makes it even more essential to comprehend how EF and talented adolescents interact. This point is especially important to relay to parents of gifted students, as the intelligence quotient (IQ) is frequently used to evaluate giftedness. EF is seldom a discussion point in the identification process. Still, knowing whether a gifted child struggles with executive function can be challenging to decipher, as the signs do not present in the same way for every child. Below, I describe what each EF could look like practically within a classroom and how a student struggling with EF might interact.

**Scientific Explanation of Inhibitory Control.** Inhibitory regulation is the process of consciously stopping irrelevant responses to the task at hand to focus on relevant responses (Ordaz et al., 2013). As Fosco et al. (2019) pointed out, it is vital to separate impulsivity from
inhibitory control, as both entail regulation of behavior. One of the primary differentiating characteristics is that impulsivity comprises a lack of inhibition, specifically concerning stimuli with a positive or negative emotional value. Additionally, inhibition involves the tendency to prioritize immediate outcomes above delayed repercussions. Therefore, "impulsivity" encompasses the cognitive processes of top-down management and the motivating factors inherent in the given scenario. In contrast, inhibitory control does not explicitly consider the motivating environment and instead represents the ability to inhibit or cease a reaction already in progress. The manifestation of disorders marked by impaired impulse control often arises from a deficiency in inhibitory control, despite the flawed assumption that the loss of inhibition directly equates to an inability to regulate urges (Kang et al., 2022).

Three facets are recognized for their role in facilitating inhibition. The circuit responsible for controlling motor responses is involved in preparing and directing a response timed adequately and aligned with a specific objective. This circuit contains the supplementary motor area, posterior parietal cortex, and putamen (Rubia et al., 2003). The executive control circuit is responsible for coordinating and planning adaptive, goal-directed behavior. According to Aron et al. (2004), this circuit comprises the dorsolateral prefrontal cortex and ventrolateral prefrontal cortex. Lastly, the dorsal anterior cingulate, which leads the circuit in charge of processing errors, keeps track of performance. When faults are detected, it informs the executive control circuit to adjust activity, enhancing performance (Kerns, 2006).

According to a study by Mirabella (2021), inhibitory control encompasses more than just one executive function. The difference between motor and interference inhibition is generally acknowledged in academic literature (Kang et al., 2022). Motor inhibition is the ability to stop a planned motor response. On the other hand, interference inhibition tests a person's ability to
handle reaction conflict caused by irrelevant but opposing sensory qualities, which requires inhibition to avoid wrong responses (Mirabella, 2021).

The process of inhibitory control continues to develop during adolescence. According to a 2010 study by Luna et al., this development occurs concurrently with changes in brain function. A comprehensive analysis of brain activity showed that the areas responsible for controlling motor responses in the brain may reach maturity throughout childhood (Ordaz, 2013). However, the brain regions linked with processing errors may continue to develop and grow into young adulthood (Velanova et al., 2008).

**Inhibitory Control in Practice.** According to Chim et al. (2021), those who possess robust inhibitory control can effectively suppress external distractions to concentrate on the current activity. Aïte et al. (2019) note that it is less probable for a middle school student who is engaged in independent laptop use during class to be interrupted and diverted from their given assignment. In contrast, an individual who exhibits a deficiency in this executive function (EF) may engage in behaviors such as covertly reading a new book from the library while neglecting to complete the assigned worksheet (Siegle et al., 2020). The distractions experienced by gifted learners may manifest differently compared to their peers, given that exceptional individuals frequently exhibit intellectual passions and interests. Nevertheless, these distractions remain present.

**Scientific Explanation of Working Memory.** Working memory processes are often broken down into two tasks: recall and recognition. Whiting and Smith (1997) posited that recalling information requires greater working memory than recognition (Luciana et al., 2005). In 1974, Baddeley and Hitch shared their three-part model of working memory with the psychology community, which included one primary executive system and two smaller
subsystems (visuospatial and auditory) that worked in tandem to store and change knowledge temporarily. The model suggests that the subsystems would store information in a way that was appropriate for the primary system and keep that information over time. The central primary system made decisions about using attentional resources, changed information that lower-level systems held, and implemented strategies for using that information.

Vogel et al. (2005) explained that filtering ability or removing unnecessary or distracting information from working memory while encoded, is highly linked to total working memory capacity and accuracy. Neuroimaging shows that the basal ganglia is crucial for eliminating unnecessary information (McNab and Klingberg, 2008). Working memory and related neural systems have been studied from childhood to early adulthood (Asato et al., 2010). However, much remains unknown about how these systems change over time and how they affect working memory filtering in particular. Few studies have examined the history of working memory filtering in detail. Recent research discovered that adolescents aged 12 to 16 are not as adept at working memory filtering as adults, as the brain regions that support this skill are still developing (Spronk et al., 2012). More information is coming from neuroimaging studies showing many brain changes that happen during adolescence. Researching these changes further is prudent considering that they show improvements in executive control; a function carried out by the prefrontal cortex in adults.

**Working Memory in Practice.** Individuals that possess a robust working memory exhibit the ability to effectively maintain and retrieve information inside their cognitive system, even in situations when the material has undergone modifications (Cowan, 2014). One potential pragmatic utilization of possessing a robust working memory capacity may be observed in the context of a student within an educational setting. Specifically, such a student is capable of
effectively amalgamating pre-existing knowledge with newly acquired material, hence facilitating the ability to articulate the way their comprehension has progressed (Oppong et al., 2019). According to Siegle et al. (2020), a gifted student experiencing challenges with working memory may tend to abstain from displaying their problem-solving steps alongside their solutions in an advanced mathematics class. This behavior may be attributed to the student's observation that when they do provide their work, it often leads to an incorrect result. In the given situation, the cognitive demand of maintaining a systematic approach and documenting the sequential operations involved in solving the problem exceeds the cognitive load associated with mentally computing the solution without external aids.

**Scientific Explanation of Cognitive Flexibility.** Cognitive flexibility, the capacity to transition between various activities or objectives, is widely recognized as a fundamental component of EF (Miyake et al., 2000). This cognitive skill enables individuals to effectively govern their thoughts and behaviors flexibly and adaptably (Jurado & Rosselli, 2007). In scholarly discourse, this phenomenon is sometimes labeled as shifting, attention-switching, or task-switching (Buttelmann & Karbach, 2017). Encompassing the cognitive capacity to disengage from extraneous information associated with a prior activity, and to concentrate on pertinent information about a subsequent task (Monsell, 2003).

Cognitive flexibility facilitates the capacity to engage in divergent thinking, shift perspectives, and effectively adjust to an ever-evolving environment and can be broken down into two distinctions: instructed flexibility and adaptive flexibility. In an environment where individuals receive explicit instructions, they must modify their behavior in response to dynamic task rules, as shown in paradigms involving task switching. In contrast, adaptive flexibility necessitates an individual's ability to deduce rules by utilizing input on previous actions, as
shown in paradigms centered around performance monitoring. Unlike instructed flexibility, adaptive flexibility relies on adaptation to environmental factors, such as feedback on performance (Peters & Crone, 2014).

Neuroscientists have been researching the causes of age-related changes in the brain’s plasticity and cognitive flexibility for quite some time (Gopnik et al., 2017). One category of advancement pertains to changes in synaptic connectivity. More synaptic connections are formed during childhood and adolescence compared to the adult phase (Huttenlocher, 1990). As individuals mature, certain neural connections undergo reinforcement. In contrast, others undergo pruning, transitioning from a brain characterized by flexibility, sensitivity, and plasticity to one more efficient and regulated (Huttenlocker, 2009). In addition to the biological changes that take place that interfere with cognitive flexibility, simultaneously, there is a notable shift in peer interactions (Somerville, 2013), wherein the desire to gain approval from peers often surpasses the inclination to comply with authority figures, which may also play a role in cognitive flexibility on a social and behavioral level as well (Hauser et al., 2015).

**Cognitive Flexibility in Practice.** Individuals that possess a high level of cognitive flexibility demonstrate the ability to consider and analyze details from multiple lenses or perspectives (Van Gerven, 2021). One example of this common behavior can be observed in a student who, although holding a divergent viewpoint from a fellow classmate, is able to transcend the disparity in perspectives and comprehend the underlying reasoning behind their peer's stance (Oppong et al., 2019). A student with executive function difficulties may have unease in the development of their thoughts and, as a means of coping, may exhibit a potentially contentious attitude during discussions involving literature or debates (Siegle et al., 2020).

Educators can easily visualize one or more gifted students in their classes by just reading
the scenarios above. Because these students present as being above average on paper or in a grade book, their executive dysfunction remains unidentified. Given the responsibility of educators to support gifted support, and the high probability that many of these students frequently experience executive dysfunction, it is reasonable to question whether there are methods to enhance and refine executive functioning. If such tactics exist, it is important to determine which ones have been proven to be most effective. The following section describes the strategies that researchers have studied the effectiveness of, as well as how this research correlates to each EF.

**Strategies to Hone Executive Functions**

Since EF differences predict a wide range of developmental outcomes, individuals working to support gifted students in and out of schools must understand the best ways to remediate in this area. These outcomes include academic achievement and societal acceptance as teens (Mischel et al., 1989), grade-point average in higher education, and graduation rates (McClelland et al., 2000). According to Mischel et al. (1989), these variations also predict one's physical capacity and socioeconomic position. Moffitt et al. (2011), on the other hand, suggested that EF may be associated with substance abuse and criminal convictions.

Teachers need to know which remediation procedures to utilize for gifted learners with executive dysfunction since gifted students depend on their teachers to understand and support them. Encouragingly, there is potential for improvement and development in executive functions. When used, metacognition, mindfulness, and brain training have shown researchers the most impressive results.
Applying Metacognition

Espinet et al. (2013) stated that EF abilities can be developed through scaffolded practice, that is, the explicit teaching of what each EF is and strategies to transfer these skills to various authentic scenarios. Evidence shows that training can enhance a person’s EF skills and, in some cases, fluid intelligence (Mackey et al. 2011). According to more recent research, it is critical to encourage adolescents to engage in metacognitive reflection on their experiences with EF skills to help them understand their value and how and when to apply them in different contexts (Espinet et al., 2013). One potential approach entails providing a plan to a student experiencing difficulties with working memory. Subsequently, the student is encouraged to implement this strategy and subsequently engage in a debriefing session to reflect on the efficacy of the technique in achieving desired outcomes. If we provide students with the knowledge and comprehension of executive functions (EF), afford them the opportunity to experiment with various ways to refine these skills, and give them time to reflect on the effectiveness of these strategies in practical situations, they will likely experience reduced overall stress levels. Additionally, this approach may potentially address issues related to executive dysfunction.

Practicing Mindfulness

Like the intervention described above, Kabat-Zinn (2009) noted that another way to deal with EF dysfunction is to practice mindfulness, purposefully paying attention to the present without passing judgment on oneself. Other researchers have also found that adopting a practice of mindfulness has also been found to improve EF skills (Schonert-Reichl et al. 2015) and, when combined with reflection and scaffolding of EF skills, is a particularly effective strategy (Zelazo et al. 2018). The concept posits that mindfulness integrates executive functions (EF) to address external stressors that contribute to feelings of anxiety and depression. According to Geronimi et
al. (2020), mindfulness is well-suited for addressing the influences of reflective and reactive behavior. Previous research has demonstrated that it can also boost executive function (EF) skills due to its ability to integrate goal-directed attention with contextualization and mitigate the influence and outcomes of emotions (Ganesan & Steinbeis, 2022).

**Engaging in Brain Training**

The field of brain training has experienced notable progress in recent years, yielding noteworthy findings for researchers (Kontostavlou, 2022). Deliberate engagement in mental exercises, sometimes referred to as brain training or cognitive training, aims to enhance cognitive capacities by practicing and refining cognitive processes (Rabipour & Davidson, 2015). According to Drigas and Karyotaki (2018), the neuroplasticity of the brain is a determining factor for neural and cognitive functioning. The decline in mental flexibility among individuals as they age can be attributed to a reduction in neural porosity. The process of neuroplasticity can be influenced by hormones and environmental stimuli, including cognitive activity, leading to the development of new brain networks. According to Simons et al. (2016), the effectiveness of brain training is attributed to its ability to transfer and apply gained knowledge to different contexts.

**Motivation, Risk, and Rewards**

The three tactics listed above have proven successful for the researchers cited. Yet, much of the current research has not considered motivation—a crucial component when working with gifted adolescents. Doebel (2020) proposed that motivation is a crucial factor in the successful execution of EFs. As a result, EFs have been reexamined and are now seen more as resources that are called upon based on the situation rather than as competencies or talents that alter because of cortical development (Qu et al., 2013). According to experts, cost-value calculations
relating to cognitive effort could impact the decision to exert effort (Shenhav et al., 2017). In particular, gifted students may weigh the benefits and drawbacks of an action to determine whether it is desirable to undertake it in the face of scarce resources (Ramos et al., 2022). This process ensures that the student can allocate resources more effectively and guarantees they are not misused (Shenhav et al., 2017).

Additionally, rewards significantly affect how well individuals perform EF tasks (Lertladaluck, 2020). For example, four-year-old children perform noticeably better when given reward-related feedback or knowledge about the benefits of carrying out a given task (Tarullo et al., 2018). Reward sensitivity alterations throughout childhood and adulthood are associated with the ongoing growth of corticostriatal connections and their impact on EF performance.

The performance of a gifted student can be influenced by the value of the target and the cost associated with executing the activity or cognitive process. The rewards offered solely for the completion of activities are insufficient in compensating for the work expended in relation to executive function tasks (Ganesan & Steinbeis, 2020). Hence, when the perceived futility of exerting effort for attaining a goal becomes apparent, it is plausible that academically talented individuals, specifically, would opt against investing their efforts in the given activity. As a result, it is imperative to emphasize the factors discussed in this section when making decisions regarding the most suitable course of action for enhancing and improving executive functioning in gifted adolescents.

**Conceptual Framework**

Numerous frameworks have been devised throughout the years to delineate specific attributes gifted learners exhibit, with most of these frameworks emphasizing distinct facets of this exceptional cohort. The scholarly works of Gagne (1985) and Renzulli (1986) focused on
identifying and understanding the learning methods exhibited by individuals with exceptional abilities. Conversely, Betts (1986) directed his research toward comprehending gifted children's emotional, behavioral, and developmental requirements. Dabrowski (1964) conducted a study that primarily examined the phenomenon of overexcitabilities throughout the population, and, in a similar vein, Hollingsworth's (1942) research centered on the concept of asynchronous development.

Each theorist noted above focused on a specific, isolated aspect of gifted learners while overlapping in some regard (see Figure 2.1). However, conducting research with this demographic, including all elements of these students is crucial. Hence, I have made the deliberate decision to consider the comprehensive aspects of gifted children, encompassing their identification, learning styles, emotionality, behaviors, overexcitabilities, and asynchronous development. In doing so, I hope to portray the experiences of this unique and often misunderstood population accurately and authentically, in addition to developing approaches that can effectively support these students and their families by providing strategies to enhance their executive functioning skills, an endeavor intended to enhance their sense of comfort, confidence, independence, and preparedness during the transition to high school.
Figure 2.1

**Anatomy of a Gifted Learner: Conceptual Framework of the Study**


**Summary**

Gifted children constitute a marginalized group of students who often lack adequate understanding and support, necessitating the amplification of their perspectives on their educational experiences. Such amplification is crucial for effecting meaningful change in the
way these students are supported within the K-12 education system. A comprehensive examination of the methods and justifications employed in this study will be thoroughly discussed in the subsequent chapter.
Chapter 3: Methods

Purpose of the Study

The objective of this study was to assess the necessity and efficacy of providing explicit education in executive functioning skills to gifted middle school students before they transitioned to high school, as well as to examine the influence of this instruction on their perceptions of negative emotional experiences associated with the change. Using a qualitative case study design facilitates the elucidation of the quantitative findings by the incorporation of comprehensive qualitative data (see Figure 3.1).
The study employed a pragmatic perspective and a research design that incorporated both qualitative methods (Creswell & Plano-Clark, 2018) and utilized a case study design (Yin, 1994). Figure 3.2 outlines the components of this qualitative case study.
Figure 3.2

*Qualitative Case Study Components*

Description of the Setting

To share information regarding the study, I contacted all intermediate units across the state of Pennsylvania, requesting their assistance in sharing a concise graphic (see Appendix A) I designed to provide a brief overview of the study to potential participants, across their various social media channels such as Facebook, Instagram, and TikTok. The parent participants documented their willingness to participate in the study by utilizing a digital RSVP form facilitated through the Qualtrics platform (see Appendix B). The collection of quantitative data was also conducted using the online survey tool, Qualtrics. The surveys were imported into the platform and made accessible to participants through the Internet. During the quantitative data collection phase of the study, the researcher engaged with parents and students via the online video conferencing platform, Zoom. The study did not involve a physical setting.

Description of the Participants

There are two categories of participants in this study. The initial participants were parents of 8th-grade gifted students. These students had been identified as gifted students per Pennsylvania’s Chapter 16 guidelines, as defined in the definitions of terms in Chapter 1. The caregiver could include a grandparent, aunt or uncle, foster parent, or another legal guardian. Despite consenting to being participants in the study themselves, parents were not obligated to also provide consent for their children to participate in the study.

However, if parent consent was obtained for the child, student participants were asked to complete an assent form, noting their understanding of the study and their willingness to participate. Student participants were aged 13-14 years old and currently enrolled in 8th-grade traditional public or public charter schools in the state of Pennsylvania who currently receive gifted services per Pennsylvania’s Chapter 16 guidelines.
**Informed Consent and Protection of Human Subjects**

I received permission to conduct this study through the Institutional Review Board at West Chester University (see Appendix C). Parents for both themselves (see Appendix D) and their child (see Appendix E) and students (see Appendix F) each received a separate consent or assent form which was signed at the end of the parent webinar (see Appendix G). All participants were given a number upon consenting. Identifying information was redacted from open-ended survey questions, interview transcriptions, and artifacts to protect participant privacy.

**Qualitative Case Study Methodology**

Creswell & Plano-Clark (2018) outlined the process of integration in explanatory sequential design, which involves explaining survey results through qualitative interviews, establishing connections between quantitative results and qualitative data collection, presenting results that align survey results with qualitative research questions, and interpreting the findings to provide insight into the survey results using information from participants who possess the most relevant perspectives (p. 298). The research study included a combination of quantitative surveys and a qualitative single case study embedded research design.

The study was approached in two distinct sections, namely the qualitative survey and the qualitative case study. The theoretical frameworks were adjusted to align with the specific nature of the type of research being undertaken in each part. The study's quantitative component entailed gathering parents' viewpoints about the influence of gifted culture on their child's executive functioning abilities, as well as the perception of parents and their child’s feelings about this transition (see Appendix H). In addition to the parent survey, a similar survey was given to student participants to obtain the same information from their point of view (see Appendix I) following a focus group. Consequently, the study's initial phase embraced a post-
positivist viewpoint since the surveys yielded valuable insights into the other aspects of the research, the webinars, and reflection. Subsequently, a shift was made to a constructivist framework, as outlined by Creswell and Plano-Clark (2018). For the qualitative case study portion of the research, I conducted a focus group with student participants, before the student survey. The focus group included semi-structured questions (see Appendix J). The objective of this strategy was to expand upon the preexisting data from the focus group (Creswell & Plano-Clark, 2018) and provide insights for the creation of educational content for student webinars. Following the focus group and surveys, three webinars (see Appendices K, L, & M) were held at various times conducive to the student participants’ schedules. The purpose of the webinars was to offer students an organized platform for improving their executive functioning skills, with the aim of supporting a more seamless transition to the secondary level of their academic endeavors. Following the completion of all other components of the study, the student participants were requested to engage in a reflective exercise through a Qualtrics questionnaire (see Appendix N). This was done with the intention of providing them with the opportunity to critically evaluate the study itself and to maintain their engagement in the process of enhancing future research to better suit the needs of others (Creswell & Plano-Clark, 2018).

**Survey Methodology**

Creswell & Guetterman (2019) provided a definition of survey design as a research methodology that involves the administration of a survey to either a sample or the entire population with the aim of capturing the attitudes, views, behaviors, or characteristics of the population (p. 385). These designs are commonly used in social science research to gather data on a wide range of topics. Creswell & Guetterman noted that by collecting data from a diverse group of individuals (in this case parents and students from across the entire state of
Pennsylvania) at a single time point, researchers can gain insights into the prevailing attitudes, beliefs, and behaviors within the population (2019). In accordance with Creswell & Guetterman (2019), this study examined parent and student self-efficacy about the ability to use executive functioning in their daily lives, as well as their perceptions regarding feelings about transitioning to the high school level. According to Creswell & Guetterman (2019), the involvement of participants in the study can lead to the generation of quantitative data, while the utilization of focus group interviews, coupled with webinars, allows for personal interaction between the participants and the researcher, resulting in the acquisition of qualitative data.

**Case Study Methodology**

Creswell & Guetterman (2019) asserted that the incorporation of case study design in research allows for the successful depiction of persons and the identification of patterns or themes, hence allowing the creation of a thorough and nuanced portrayal (p. 545). Phase II of my study utilized a case study methodology (Yin, 2014) to examine the practical application of executive function usage. Yin (2014) underscored the importance of utilizing questioning strategies, active listening skills, adaptability, and maintaining a robust background of prior knowledge in his research. To properly utilize the case study design, it is crucial to possess the necessary abilities of impartiality and a thorough examination of the phenomena under investigation. These qualities align well with the utilization of the semi-structured interview instrument.

By employing a combination of case study methodology and semi-structured interview techniques, this study aims to elicit participants' narratives. Consequently, the selected case serves as a pertinent and current phenomenon within its authentic real-world setting (Yin, 1994). The objective of this study was to utilize the individual experiences of gifted middle school
student participants to bring about positive, meaningful change within the field of gifted education.

**Instrumentation**

There were multiple instruments used in this study. Using focus groups, surveys, an intervention via three webinars, and student reflections, I was able to weave together the shared experience that students were candid enough to divulge the details.

**Interviews/Focus Groups**

The preliminary phase of the research involved conducting semi-structured interviews with students who expressed their interest by responding to an RSVP invitation using the Qualtrics platform. The interview protocols utilized for students encompassed a combination of semi-structured interview questions, along with potential follow-up inquiries. The interviews were conducted and recorded using the Zoom platform, and thereafter, the files were transferred to a computer that was protected by a password. The interviews were accurately transcribed and subjected to member screening to ensure the validation of participants' statements. Subsequently, the interviews underwent a process wherein all identifying information was removed and replaced with a numerical identifier, with the intention of safeguarding the privacy of the participants. The initial objective of conducting the interviews was to establish a positive relationship with the student participants, so enhancing the likelihood of obtaining more precise and genuine data for the study, reflective of their own experiences. According to the findings of Holbrook et al. (2003), the establishment of rapport plays a crucial role in mitigating response bias. This is attributed to the fact that rapport serves as a motivating factor for respondents, encouraging them to actively participate in the interview process and provide sincere and meaningful responses (Bell et al., 2016).
Survey

The survey selected for this study is a combination of demographic questions, the Executive Skills Questionnaire (ESQ) (Dawson & Guare, 2010) and open-ended questions about their perceptions of the feelings they had about the transition to high school. The ESQ is a self-reporting rating scale that incorporates contemporary scientific knowledge of fundamental executive function (EF) processes, while also considering ecologically valid EF skills that are directly relevant to academic settings and activities. Given the online nature of the study involving unfamiliar families and children with whom I lack a pre-existing relationship, I perceive three advantages to using this questionnaire.

The ESQ was created to facilitate comprehension of one's executive functions, as well as discern both proficient and deficient aspects. It is important to note that there are no profiles of strengths or weaknesses that can be deemed superior or inferior to others. Everyone possesses both strengths and flaws. The primary objective of the ESQ is to determine if your combination of strengths and weaknesses allows the test-taker to effectively handle their duties and overcome obstacles with a reasonable level of success. To enhance goal attainment, it is advantageous to recognize and leverage strengths, address areas that provide difficulties, and ensure that hurdles do not impede progress. This aspect significantly influenced my positionality, as I aimed to prioritize the positive aspects, particularly while attempting to establish rapport during three webinars conducted over a computer screen. Based on personal observation, I note that adolescents tend to exhibit optimal performance when the adults present in their environment use an approach that extends beyond just highlighting their shortcomings.

Another advantage of the questionnaire is its high level of comprehensibility among both parents and teenagers. Another aspect of my positionality involves prioritizing the accessibility
of the study and data to families. Ensuring the absence of specialized terminology and trendy phrases is crucial to obtain dependable and genuine data through a survey. One final notable advantage of the ESQ is the alignment of each question and section with a distinct executive function. This feature facilitates the interpretation of quantitative data obtained from this segment of the research. Parents were given a survey with language correlating to their role and students were given a similar survey with kid-friendly language making it more accessible and easier to comprehend.

The ESQ is not a norm-referenced tool. This means that it does not compare performance to that of others. Instead, it provides insight into the relative strength of executive talents. It is for this reason also, that I chose not to assess executive function using a norm-referenced exam, such as the Behavior Rating Inventory of Executive Function (BRIEF), as this inventory does not specifically emphasize strengths.

**Procedures**

The following section details the procedures I used to recruit participants, conduct focus groups and surveys, deliver intervention via webinars, and obtain student reflections.

**Parent Recruitment**

To recruit parents, I reached out to the following contacts of the Pennsylvania Intermediate Units (IU) on October 30 to request that they post information via a graphic (Appendix G) about the study and how to participate via their professional (IU) social media pages (e.g. Facebook, Instagram, TikTok). In addition, I contacted various gifted parent groups (via social media) from districts in the state of Pennsylvania, as well as PAGE (Pennsylvania Association for Gifted Education), Hoagies (a well-known community supporting gifted families), PaTTan, (Pennsylvania Training and Technical Assistance Network) and NAGC
(National Association for Gifted Children). When potential participants interacted with the social media posts by clicking "Enroll Now", they were be directed to a Qualtrics form that gave more information about the study, and requested their name and email address, for further communication regarding the phases of the study, as well as a question regarding whether they have a gifted child who was enrolled in 8th grade for the 2023-2024 school year. During the recruitment phase, I reviewed all potential participants’ contact information, and sent an email to qualifying potential participants with information regarding the date and time for the parent webinar.

After the email was sent to potential participants, I hosted a parent webinar via Zoom for the parents who had shown interest and provided participants with an opportunity to ask questions, sign the consent form, and complete the parent-facing survey via a Qualtrics link (via the Zoom chat as well as a bit.ly link visible to all members of the webinar), wherein they could provide their child’s email address for future communication. I maintained the security of the signed documents on a personal password-protected laptop, in a password-protected folder.

Participants were informed that there was no compensation for participating and that parents who chose not to participate could still attend the parent webinar, and have their child attend the webinars. This practice was imperative to my positionality, as I did not want to withhold research and information that could benefit students in some way, regardless of whether they consented to participation in the study.

**Student Recruitment & Procedures**

Following the parent webinar, I viewed all parents who have consented to their children participating in the study. I distributed the assent forms via a Qualtrics link (sent in an initial email to consenting parents and their potential assenting child) to all students who have been
granted consent to participate in the study. Once student participants had completed their assent form (via Qualtrics) they were navigated to a form that allowed them/their caretaker to RSVP to a focus group meeting of their choosing.

**Focus Groups**

Once I had the dates that were chosen by student participants for the focus groups, I gave students information regarding the focus group time, date, and location once they had signed the assent form. I also sent this information out via personal email to parents with an RSVP space. I held three student focus groups via Zoom for all the students whose parents gave consent for their child to participate in the study. Student participants attended a 30-45-minute focus group at a date and time mutually agreed upon. During the focus group, students were asked semi-structured interview questions, and then completed the student survey directly following the focus group.

**Student Survey**

Upon finishing up the focus group with students, I provided students with the Qualtrics link to access & complete the student survey. Students completed the survey in one sitting, while still on the Zoom call so that if they had any clarifying questions, I could be there to answer them. All information was stored in Qualtrics (a password-protected site) on a password protected device. Following the focus groups, student participants were given a link to a Qualtrics form with the dates of three (researcher-crafted) webinars that they would attend via Zoom.

**Student Webinars**

Based on the information shared in the parent and student surveys, I crafted three (3) 30-minute-long webinars (on multiple dates and times for maximum participant attendance) via
Zoom. Student participants and parents were given the dates and times of these webinars all at once for planning purposes, so as not to conflict with any extra-curricular activities that would impede student participation. Student participants were invited to attend three seminars, a series, which included the following student-friendly information regarding executive function and student-centered discussion:

1. Working Memory (Tips, Tricks & Tools for Success)
2. Mental Flexibility (Tips, Tricks & Tools for Success)
3. Self-Control (Tips, Tricks and Tools for Success)

At the end of the final webinar, I provided students with a reflection form, giving them digital access via Qualtrics link, and time to complete it.

**Student Reflection**

At the end of the final seminar, students were given access to a reflection form regarding their experience in the study (see Appendix H). Students completed the reflection in one sitting via Qualtrics at the end of their final webinar while remaining on Zoom to again, ensure that if a student had a question or needed clarification, I was available to assist.

**Analysis & Coding Procedures**

The following section details how I chose to code the data I received from surveys, focus groups, and reflections, and the rationale behind this decision.

**Coding**

The coding process encompassed both first and subsequent iterations of coding. Coding serves as the crucial connection between the process of data gathering and the subsequent elucidation of its underlying significance. Qualitative data analysis involves the utilization of codes, which are constructs developed by researchers to represent and assign interpreted
meaning to individual pieces of data (Charmaz & Bryant, 2010). These codes are subsequently employed in various analytical procedures such as pattern identification, categorization, theory development, and other related activities. The initial coding phase is employed to summarize portions of data (Miles et al., 2014). The initial cycle coding technique employed in this study was in vivo coding. In vivo coding involves the inclusion of statements obtained directly from the participant's verbal expressions. Hence, the practice of in vivo coding places emphasis on prioritizing and respecting the perspectives of the participants (Miles et al., 2014). According to Merriam (1998), the analysis and interpretation of a study's findings would be influenced by the constructions, concepts, language, models, and theories that were initially employed to frame the investigation (p. 48). The utilization of in vivo coding in this study prioritized the participants’ viewpoints by incorporating their own language and expressions as codes, rather than relying on words and phrases supplied by the researcher (Saldaña, 2013). An exploratory coding method was employed to discover themes that emerged from the data.

During the second cycle of coding, I evaluated the data for phrases or statements that answered the specific research questions and organized them into subcategories until I reached saturation. According to Miles et al. (2014), the second cycle coding benefits are fourfold for the data analysis, as it: (a) condenses large amounts of data into smaller number of analytic units, (b) gets the researcher into analysis during data collection, (c) helps the researcher elaborate a cognitive map—an evolving, more integrated schema for understanding local incidents and interactions, and (d) lays the groundwork for cross-case or within case analysis by surfacing common themes and directional processes. I inductively coded the data to allow the themes and subthemes emerge from the participants’ perspectives of applying soft skills during clinical practice, the current global pandemic and how it impacts their ability to apply patient-centered
care, their perceived subjective well-being, and their emotional response to implementing soft skills during their clinical experiences. The process of second-cycle coding involves organizing the initial cycle codes into overarching themes and subthemes. I used categories and themes to address qualitative research questions.

Also, during the second phase of the study, I employed the technique of pattern coding to establish a "meta code" (Saldaña, 2013, p. 81). This approach enabled me to assign significance to a group of in vivo codes that captured the participants’ voices, views, and perspectives (Saldaña, 2013). Employing second cycle coding methodology, offered valuable insights for future research endeavors. The process of pattern coding continued until reaching a state of saturation.

Validity, Reliability, Trustworthiness

The dependability of the instrument in Phase I was ensured through the utilization of internal consistency reliability, as it pertains to the survey approach applied. I attained this by implementing the same iteration of the survey to every participant, per the suggestion by Creswell & Guetterman (2019). The survey employed Likert scales to structure questions in an easily understandable manner. Furthermore, to mitigate participant fatigue, as recommended by Creswell & Guetterman (2019), I provided an estimated completion time of 8-10 minutes. Although the study implemented specific protocols and safeguards, it remained vulnerable to potential risks to both internal and external validity. Merriam (1998) posited that there are six ways to augment the internal validity of data. In the present investigation, I used three procedures, specifically, member checking, peer examination, and identification of researcher biases. The concept of trustworthiness in qualitative research involves various crucial elements,
such as the meticulousness of the study design, the credibility of the researcher, the plausibility of the findings, and the adherence to the research technique (Rose & Johnson, 2020, p. 3).

**Summary**

This chapter provided an overview of the methodology used in this study. This research study used a qualitative case study design (Yin, 2014). Data was collected for this study in two phases. In Chapter IV, I will discuss the results of the data collection, beginning with the results of Phase 1, the qualitative survey portion of the study, and then analyzing the qualitative data in Phase 2.
Chapter 4: Findings

Throughout this study, I sought to examine the experiences of gifted middle school students and their excitement and/or anxiety as it pertains to transitioning to high school. Specifically, I sought to examine the experiences of gifted middle school students and their excitement and/or anxiety as it pertains to transitioning to high school. This chapter provides an overview of the findings of this qualitative study to explore whether explicit instruction on executive functioning supported students in their transition to the secondary level. The chapter starts with a demographic overview of the 12 participants in the study. The second section of the chapter is organized under the three research questions that guided this study: (1) How do gifted students and their parents perceive their emotional well-being? (2) In what ways does direct instruction about executive functions contribute to gifted students and their parents’ perceptions of emotional well-being regarding their transition to the secondary level (high school)? (3) In what ways does explicit instruction about executive functions contribute to gifted students and their parents’ perceptions of academic readiness regarding their transition to the secondary level (high school)?

Profiles of Participants

The research included two unique cohorts of participants. The initial round of participants consisted of parents of children in Pennsylvania who met the criteria for being recognized as gifted children, as specified by Pennsylvania's Chapter 16 standards, which I detailed in the definition of terms in Chapter 1. Out of the total of 10 participants, there was one father and nine mothers, with one mother enrolling two children in the study.

The student participants, aged 11 to 14, were currently enrolled in a grade level that mandated their transfer to a Pennsylvania public or public charter high school in the upcoming
academic year. Out of the student participants, three were enrolled in a public charter school, while eight were enrolled in a standard public school. The initial student poll revealed further demographic information, indicating that out of the 11 student participants, two identified as non-binary, five identified as girls, and four identified as boys.

Findings

This section presents the findings of the two research questions that guided this study’s inquiry. The findings for each research question include descriptive responses and direct quotes that capture the participants' sentiments and wording.

Empowered but Exasperated: The Gifted Identity and Emotional Well-Being

The first research question was as follows, “How do gifted adolescents perceive their emotional well-being as it pertains to their identity as a gifted student?” Through my exploration of participants' prior educational backgrounds and their own identity, I gained insight into how being involved in the gifted community from an early age led children to feel compelled to conform to the expectations of traditional schooling, despite their own dissatisfaction.

Playing the Game of School

Most gifted children in the United States primarily attend regular education classes, and studies suggest that a significant portion of them are already familiar with around 40% to 50% of the academic content in those classes prior to the beginning of the academic year (NAGC, 2008). The acquisition of information by gifted students requires general education teachers to engage in additional planning and preparation. This practice of differentiation goes beyond just assigning extra work or relying on talented students to act as tutors for peers who need remedial help (Berman et al., 2012). The participants in this study predominantly expressed unfavorable sentiments about their educational experiences in relation to their giftedness during their time in
elementary and middle school. Multiple aspects of these experiences illustrate what appears to be the typical pattern for gifted students throughout the Commonwealth of Pennsylvania. Participants found commonality and community in their shared experiences because of several factors, including the grouping of students, the delivery of material, the perpetuation of misconceptions about their identity by others, and their own sense of self as individuals and as a collective.

**The Gifted Bubble.** Gifted students across the Commonwealth of Pennsylvania have varying experiences when it comes to the services they receive per their Gifted Individualized Education Plan (GIEP). One facet of the experience is the way in which students are grouped, and whether enrichment takes place within the regular education classroom or in a pull-out model, wherein students are taken out of their regular classes for a set time - perhaps multiple times a week to receive enrichment.

Despite the overwhelming need for gifted education, there is no federal mandate that dictates what gifted education should look like at a national level (Robinson & Deitz, 2022). Though participants were all from the same state, they were from various backgrounds, be it public charter schools or public schools, and because of this, I was interested in understanding the participants’ experience as gifted students up until the present day. The topics that emerged from this lively discussion ranged from the early days of being identified in elementary school, to the confusion of why students were being pulled out of class to learn in a different classroom altogether. Three participants carried the beginning of our conversation, two of whom attended a public charter school together that catered to gifted or highly-intellectual children. The first was Etana, an introspective adolescent dedicated to the betterment of their community, and whose willingness to be vulnerable in the short time we had during the study was inspiring. Next was
Raven, who had a strong sense of who she was and became a voice for the collective group of participants in many ways. Finally, Anthony was a headstrong adolescent who dared not sugarcoat his experience and was unafraid to advocate for himself in the hope of making change. For some students, such as Etana, they described their elementary experience as one of confusion from being labeled:

For me, being a student in elementary school, I was pushed away from other students for classes that I was ‘too smart to be in’ which I did not appreciate. And I was treated kind of [less than] in elementary school, even though I was gifted. Gifted kids were separated from class and put into another group. (Focus Group 1)

In their own experience, they recalled not understanding what it meant to be identified as a gifted student, and many other participants shared these sentiments of confusion. Anthony, for example, shared, “I was also [placed into] a separate group. I'm not sure if it was gifted kids, or [what] it was. I think it was something [to do] with my PSSA [scores] because that was before I was diagnosed. [sic] But I was separate from everyone else I was with [before]” (Focus Group 1). It was clear as we continued deeper into our conversation that at least half of the participants did not have a clear understanding of what it meant to be identified as gifted because it had never been explained to them, nor why they suddenly began to get pulled out of their regular core classes. However, others, such as Raven, did report an understanding of why they were pulled out of their regular education classes for gifted enrichment, noting:

I was separated to an elementary school slightly differently. [e]cause in my school [students] had to test to get into programs. They had a social studies and a math program, and [gifted students] were taken out, increasing by grade level, up to 5 days a week. Then you would have to come back to the classroom and were expected to, because you were
gifted, catch up on everything you had missed while you were gone in the hour. (Focus Group 1)

The motivation for understanding whether the transition from regular education classroom to gifted enrichment classroom had more to do with whether she comprehended her giftedness, or merely the fact that she was expected to complete twice as much work as her non-identified peers. She added, “So it really was very secluded in that one space. That was where the gifted kids were, and then we left, and we had to go back to where all the [other] kids on the regular track course were.” Not only did Raven understand from a young age that she was being singled out from her unidentified peers, but she also understood that she had enrichment work that was being piled on in addition to what was being done in class when she left for her gifted classes, all because of her identification. Raven was also aware that the gifted classroom was where she went to be enriched, recalling, “The only enrichment that we got was in that one hour in that classroom. So, it really was kind of like a bubble that you walked into, and then you walked back into the regular classroom.” This “bubble” Raven described was that of belonging, something that she reported that she had not felt in the regular education classroom. While grouping practices varied across settings, the mode of delivery as well as the content being delivered was consistent overall.

The Busy Work-o-Meter. According to Gubbins et al. (2021), the development and execution of programs targeting gifted and talented students necessitate meticulous consideration and strategic preparation (p. 115). However, many of the participants reported a sense of disappointment in the level of expertise that their gifted and regular education teachers had when it came to educating gifted students, as well as the quality (and quantity) of work expected of them. Though I would have assumed that students who attended schools that boasted of catering
specifically to gifted students would have had a more positive experience than those in a traditional public school, this assumption was almost immediately disproven. Ivy, an adolescent who also attended a public charter school for gifted or highly intellectual children, jumped in almost immediately, “You just end up doing a lot of busy work, and you're really bored all the time.” This was followed up by an enthusiastic Raven, who affirmed, “Elementary school [was] so much busy work!” (Focus Group 1). The audible groans that erupted from each Zoom window after this point was asserted made it clear that this was a sentiment that many in the group shared. This attitude showed that gifted students have a unique ability to critique the work they are assigned, resembling a “busy work-o-meter” with which they can gauge the merit or necessity of the work.

With what can only be described as enthusiastic disgust that was shared among the group about the less-than-challenging type of work being assigned in their past and current gifted classes, I was left wondering if this had any impact on their diligence or participation in the class. Seth, a witty, charismatic adolescent who attends a public school and describes himself as having ADHD and OCD, chimed in:

I [left] the gifted room because all it is, is extra work. The time I quit was because one day I needed to finish something [for another class], and I asked if I could do the work, and [my teacher] said if I was still paying attention [to her lesson], I could do the work for my other class. So, I started doing it, and the other teacher just walked up and just closed my Chromebook on me! I was supposed to be writing a[n assignment] for ELA, and I needed to get it done that day. I did eventually get it done, although I was trying to get it done [in my gifted class]. (Focus Group 3)
Seth feels disheartened by the perceived lack of support from his gifted teacher. Despite his best efforts to use his time wisely in what he considered to be a safe space, he was confuted by an adult in the room who seemingly did not understand his predicament, or simply did not possess the compassion to do so, something that gifted students and their twice-exceptional counterparts often require. Johnny, a compassionate adolescent who also attends a public school and whose answers were most often thoughtful, followed Seth’s sentiment up with:

There have been quite a few kids who have dropped out or [are] trying to drop out gifted currently, because they feel like it's just extra work. We pretty much do the same work [Seth was] talking about. One thing I have noticed is that when kids ask, ‘Hey, can I go to my class? I'm a little behind and I need to get work done.’ [My gifted teacher will] let you, but she'll kind of be all passive aggressive. She'll make a speech to class about how we have to be here for gifted [because] that's what's on our schedule. Some of us have important classes that we need to take. And, I hate to say it, gifted [class] is kind of an optional activity. (Focus Group 2)

Certainly, Johnny and his peers’ perception of gifted classes merely being “optional” were not a result of a lackadaisical attitude about academics, rather, it was a misunderstanding of why they needed the support of a gifted classroom. This makes us ponder the value or merit in the work assigned in the gifted classroom, and the flexibility and support to complete work they saw as valuable for their regular classes. After listening to the participants find solace in each other’s negative experiences in their gifted-specific classes, it was not surprising that, if students were given the agency by their parents, they chose to drop the gifted classes altogether. However, I wondered about the classes that they did not have the option to drop: the regular education core classes. Anthony was the first to share his experience:
Even with normal Math class, it's just so much busy work in general. They'll teach us something. We'll learn it, and then they'll make us do it like 40 times for some reason before we take a test. I'm in a bunch of advanced classes, and because we have to do the PSSAs, they make us study all the stuff we've already learned. And then they also give us, say, 10 extra homework problems on [what] we're actually supposed to be learning. I'm in geometry, but [I] still have to learn [the type of] math [that will be on the eighth-grade PSSA], even though I learned Math 8 in the summer after sixth grade. (Focus Group 1)

Of course, standardized tests such as the Pennsylvania State Standardized Assessment (PSSA) and the expectation to perform well on such assessments are not going away any time soon (Starr, 2020). Anthony’s experience illustrated that enrichment, a facet of curricula that is not assessed, may not be the priority of regular education teachers; rather, the focus may be on factors related to performance ratings, such as high achievement on standardized tests (Renzulli & Reis, 2008).

Anthony expanded on his experience in other regular education classes:

In science, we don't have accelerated science at my school, so, I just get a Khan Academy course on top of all of my [regular] science work that I have to do as well because I'm gifted. [In ELA] we don’t really get to do anything fun. We had to read books. Yeah, I love reading, but they make us read really difficult books [for] no reason, and even continuing into middle school, they [do this]. (Focus Group 1)

This experience may have less to do with expectations for high achievement on standardized tests, and more to do with the inexperience, lack of understanding, or lackadaisical mindset of the classroom teacher. These same teachers might not have the stamina to differentiate for
students at varying levels, least of all gifted students. Whatever the reasoning, this scenario was seemingly all too common in the past educational experiences of the participants.

While most of the participants shared the experience of an expectation that they would complete busy work in the name of gifted education, not all of them did. Yunjin shared her experience, which, although dissimilar to the others, was disappointing in its own right:

Well, I feel like at our school, I've heard that teachers are supposed to give us extra work for being a gifted student, but I've never had a teacher give me extra work. And the weird thing is, my sister, she has gotten extra work for being [a] gifted student, and it's extra credit opportunities in [the] regular class, apart from [gifted] seminars. I don't get enough challenges from the work that we're doing [in my regular core classes]. We do have a really good, gifted program, but apart from our [gifted] seminars, there's nothing else that's particularly challenging. [Somehow], I’ve always managed to have like the teachers that my sister never gets, so all [of] her experiences are really different from mine. It [is] disappointing to not get that extra challenge during [core] classes. (Focus Group 1)

Though it is nothing new for gifted students to feel bored by the regular curriculum and a lack of enthusiasm for enrichment (Gallagher & Harradine, 1997), the gifted participants in this study yearned for more challenging content and enrichment based on their own understanding of what they needed as gifted learners. This sense of feeling misunderstood and, hence, being underserved in their academic endeavors seemed par for the course in the lived experience of these gifted adolescents.

Grappling with Giftedness: Knowing Thyself Amidst a World of Misunderstanding

The participants' demonstration of self-awareness surpassed my expectations as a researcher. They were able to explain in depth how their unique learning style affected their
emotional well-being and how being part of a community of distinct and sometimes misunderstood individuals enabled them to be themselves.

**Ways of Learning.** Participants held an acute awareness for how they did not learn best, but equally obvious was how in tune they were with their strengths and weaknesses as gifted students in general. When asked what it meant to be gifted, Seth, seemingly unsure of how to put the identification into words, muddled through his description the best he could: “Being gifted, it kind of means that, I don't wanna say ‘different’, but your brain works differently, and you just think of problems differently, not good or bad, it just depends. Usually [being gifted] makes things easier” (Focus Group 2). Like scholars who have dedicated their lives to researching what it means for an individual to be gifted, so, too, did Seth have trouble pinpointing universally what a gifted identification actually meant. Raven, took a more personal approach to what being identified as gifted meant to her, adding:

> Well, as a gifted kid, yes, a lot of it is intelligence, but I'm also very mature for my age. And also, people sometimes just go along with whatever I say. I'm mostly always making it up and using my intuition as a gifted kid to kind of try and figure out the best solution. But I also like to have another person to, almost, butt heads with and can figure out a [better] solution, too. Not just my opinion, but multiple people’s opinions, so I don't feel like I'm always making up what everyone [else is] doing. (Focus Group 1)

I wondered whether Raven’s innate sense of self was something that had been explained to her, or whether she was just more attuned and introspective of her experiences and metacognition overall. Marie, a somewhat reserved adolescent, expressed a different opinion than Raven:

> I don't like collaborating with groups, [because] I have my own way of how I want to do something. If somebody else does something other than that, if I don't think [their way] is
better than mine, and they [do] think it is better than mine, I just have a tough time dealing with that. I feel like when other people have other ideas that completely clash with mine, I don't wanna work with their ideas because it just doesn't make sense to me.

(Focus Group 3)

This admission by Marie illustrated what many gifted individuals grapple with throughout their lifetimes, which is a type-A, perfectionistic worldview. Others in the conversation seemed to interpret the sentiment as a flaw or deficit. Samantha, a confident and candid adolescent who attends a public school, confessed, “I think I sometimes struggle with constructive criticism because I feel like I did it correctly” (Focus Group 1). Given her experience of others misunderstanding her giftedness, it could be that Samantha grew to mistrust the feedback she had been given by those who misunderstood her. Given research that gifted students begin to shut down when they perceive that they may possess a deficit (Siegle et al., 2017), it became imperative that we shift to students sharing a glow and a grow; that is, students naming the skills or subjects that they did not have a natural aptitude for, but also what they were skilled at when it came to their learning. Seth chimed in, “I don't feel really good at science, but I'm in honors science, and I don't do too [well] at it, and I'm confused, usually. [On the other hand,] math comes easy” (Focus Group 2). Despite Seth being enrolled in a higher-level class, he was not confident in his abilities in this subject area. Math, on the other hand, was something he felt confident in. For Johnny, it was the opposite: “I'm incredibly gifted at ELA; all that kind of stuff comes easy to me, but when it comes to math, I'll just be sitting there in class [and] my brain will just kind of shut off” (Focus Group 2). Johnny took things a step further by identifying the behavior he resorted to when he did not feel confident in his ability. Both boys knew their
individual strengths, and they were confident in them, but they were also acutely aware of what they deemed their weaknesses.

In the third focus group, this question took a bit of a different turn. Kenny, a more reserved adolescent who attends public school and was often hesitant to contribute, responded with, “[It’s] grammar for me. It just goes in one ear [and] out the other. It's so hard for me to focus and pay attention whenever a teacher's [teaching] about [it], and I end up forgetting all the rules and stuff” (Focus Group 3). In this scenario, it seemed to be less about aptitude, and more about interest, or motivation. White et al. (2018) note that a common theme among underachieving gifted students is a lack of motivation. Etana shared some vulnerability with the group concerning motivation and the outcome of low achievement:

I feel like you're just taking my story out of my head and placing it [right] in front of me right now because I experience this lack of motivation and my parents... They've been a bit disappointed [in] me because I haven't [been] getting good grades, and they know now it's all about motivation. But I can't find the motivation. (Focus Group 1)

The experience of boredom fostering a level of unmotivation shared by Etana was common among the group. I pushed a bit more to get a sense of what our oldest participant, Glenn, a 9th grade boy had experienced. He related, saying, “I guess I can kind of like push myself to do things if I feel like it's really necessary. [Oftentimes] I'll get bored and not really pay attention. If it's a subject that I really like, I'll get into it and actually pay attention and try to be involved” (Focus Group 3). This astute connection to not only his ability, but the consciousness around motivation and how an understanding of the merit or applicability of a subject area, or concept could determine whether he paid attention to the material led us into a discussion about needing to know what participants referred to as, “the why”.
Knowing the “Why”. Classroom teachers are familiar with the age-old conversation often held in a classroom where a student who is not particularly fond of a subject or concept being taught in class asks, “Why are we learning this?” or, “When will we use this in real life?” The gifted students in this cohort were no exception. Justification for learning is a fundamental part of motivation for gifted learners (Doebel, 2020). Coupled with a feeling of being misunderstood by those responsible for delivering instruction, this is a recipe for perpetuating the phenomenon of underachieving gifted students. Anthony shared his experience in this regard, stating, “A lot of the time, I don't [understand] ‘the why’, so I just look into it or ask my friends. [If] I've learned it already, I don't get why I have to do it, and then I end up not doing my homework, and why I’m almost failing” (Focus Group 1). Upon hearing the word “failing” many of the participants were seemingly taken aback, a visible disassociation and lack of eye contact from each participant, making it clear. Perhaps it was because the word “failing” was not a part of their vocabulary, as many gifted students often grapple with perfectionism. It was quiet for a bit, but then Raven said something that resonated with the group:

I wanted to circle back to what Anthony was saying as well about ‘the why’. Often, people who aren't gifted say, ‘the why doesn't matter’, or “The why doesn't make sense’, or they can't think of a why. But, at least for me, and maybe you guys do this too, sometimes the why is exactly what we need to move forward because [that’s] we're so set on. Then we're able to learn better, because we know why we're doing this. Why we're going through the monotony of 12 years of school and flashcards, and note-taking, and Geometry. Why we do all these concepts, and why we learn all these things. (Focus Group 1)
Raven’s response was a rallying cry or a call to action that a passionate activist would deliver. Knowing she and others like her were misunderstood and misrepresented by those who were supposed to foster a love of learning within was disheartening. Her use of the word “We” suggested that those who are a part of gifted culture have a shared experience throughout their academic careers and beyond.

**The Collective “We”**. In the short timeframe that we had been in the focus group, the participants had created a community of learners whose commonality of being identified as gifted students had allowed them to show vulnerability. The conversation became less about each student as an individual and more about the culture of gifted students - who they were as a collective. I asked the group about their perceptions of giftedness as a culture, and their responses were inspired. Seth offered:

There's the literal sense [of being gifted] like a high IQ, but one thing I've noticed about all the gifted kids [is] that we all have some sort of interesting or different personality trait that no one else has. I find it really interesting. We're all slightly different than the average student, which I think is honestly pretty cool. (Focus Group 2)

This was the first time any of the participants showed a positive attitude toward their identification of being a gifted individual. In the first focus group, Anthony explained his interpretation of being gifted:

We learn by doing things, not by memorizing papers and stuff like textbooks and things. We make lots of connections, we do our own research just to figure out what everyone else, I guess, either doesn't care about or just assumes doesn't matter…We are not stupid. (Focus Group 1)
The need to address the fact that he and the collective group of gifted students were “not stupid” (Anthony, Focus Group 1) spoke to the belief that he had been treated and had seen others be treated as such, and it made him feel different, or less than. Ivy followed this sentiment up with, “And we do better not by learning specific facts, but more trying to work things” (Focus Group 1) which illustrated that she understood that she and others like her, do better by applying what they have learned in a more authentic, tactile way.

These facets of themselves as the collective “we” make it obvious that they are hyper-aware of their ways of being and ways of learning, and I wondered if it was from tireless attempts at advocating for themselves throughout their educational experiences thus far. It is possible that these attempts were made easier by their strength in numbers, as nearly all participants had experience of being a part of a homogenous group of gifted students. The theme of community, and its importance to their educational experiences was a reoccurring theme that deserved to be investigated.

**Sense of Community.** Although most participants asserted that they were not entirely certain of how or why they were identified as being gifted, for much of this cohort of gifted participants, this was the norm. Many expressed a sense of belonging when they were with the group of other gifted students, with Etana at one point calling them “just a bunch of wacky, goofy gifted kids” (Focus Group 1), which derived a knowing laugh from the group, with every participant nodding and rolling their eyes. Marie shared similar sentiments about the gifted bond that gifted students share with one another, noting, ”Naturally, I like [the] people [in my gifted class] because they're similar to me. And we've all gone through the same tests. And we're in the same class with the same teacher, and we just understand each other more because we have this extra thing that just bonds us” (Focus Group 3). This level of understanding one another solely
because they were identified as gifted was something that many of the participants mentioned in the focus groups. For example, Raven, who goes to the same school as Etana, expanded on her own experience of being solely with gifted peers, saying, “It's really just the best place because you have everyone who is all of the gifted kids from all of the schools put together, and we're just able to just be wacko” (Focus Group 1). The word “wacko” struck me less as meaning “out of control” and more as meaning that she was able to be herself and not have to mask her giftedness. Considering that once gifted students reach adolescence, they experience a sense of “differentness” from their non-gifted peers (Robinson, 1991 & 1996), which makes them more inclined to “mask”, or hide their “differentness” (Berlin, 2009), a chance to embrace the gifted identity is welcomed. Given that many participants had expressed a feeling of being misunderstood in their regular education settings, they described that when they were with like-minded peers, it felt like their homeplace. Johnny shared similar sentiments about the group that he had been with since early elementary school:

    I think having that community of people who do know what you're going through or have gone through [is important]. I don't know about every gifted group. But at least [in] my group, you're incredibly close-knit, the whole group. Personally, if it wasn't for the whole community, I probably wouldn't be in [the gifted-specific class] (Focus Group 2).

However, not all students shared this sense of community. Kenny shared, “I feel like in the gifted group that I'm in, it’s not that I dislike the kids; it's just that I don't think I have similar interests as them” (Focus Group 3). It was clear that students felt their most authentic selves when they were with their like-minded gifted peers. From the way their faces lit up when they talked about these communities, it became apparent that if students did not have this sense of community, it would take an emotional toll on their mental health and well-being.
Mental Health and Well-Being. When it comes to gifted students and their mental health, the research is clear: gifted students are more likely to struggle (Windsor & Mueller, 2020). From the way they develop asynchronously, to the ways their “differentness” is perceived, their sense of self and the confidence within are paramount for gifted students to maintain their mental and emotional well-being. The ways in which this specific cohort of students ranged from perfectionism to depression, ADHD and OCD, and the participants opened up about their unique struggles as twice-exceptional students thus far in their educational journey. Ivy candidly reflected aloud:

I know I was a huge perfectionist, especially in elementary school. I would spend hours on an assignment because that's the only work I would have for an entire week, homework-wise, and I would do this, I think, because I wanted to be engaged. So, I would just work and work and work on it until I thought it was perfect. (Focus Group 1)

This sentiment tied back to the notion that participants felt as though they were given busy work instead of work that held merit and value. While the conversation solely about the busy work was met with vehement frustration, Anthony had a light bulb moment following Ivy’s comment, saying, “You know, that totally makes sense. I understand where she's coming from because I did that in elementary school!” In addition to his revelation about the root of his perfectionism, Anthony also mentioned being twice exceptional:

Everybody thinks I have ADHD me and my mom, I'm pretty sure it was misdiagnosed giftedness. I'm in a bunch of ADHD enrichment [classes] which I'm not allowed to quit. I really wish I could [quit] because it's not necessary. We argue with people a lot about [my diagnosis]. It's stressful. (Focus Group 1)
Children should not have to prove their being to the adults who are supposed to support them in their educational system. However, not all students reported feeling stressed out about their mental health. Seth, also twice exceptional, was able to find the silver lining, “I have OCD and ADHD, so that really helps with the perfectionist thing. [For example,] if I'm packing a box, I need everything to fit perfectly. I don't [just] throw everything in, I perfectly space it out to fit” (Focus Group 2). He saw his disability as being detail-oriented, which he grew to embrace not as a deficit but as a strength.

**Conclusion**

Amplifying student voices that recount their experiences in education, in this case, gifted education, is imperative if we long to make any lasting, positive change in education. This section included student participants’ perceptions of comfort and confidence as they related to the student's feelings of security, ease, and self-assurance when discussing the transition to the high school level. Students expressed that emotional well-being was crucial for adapting to the new high school environment smoothly, maintaining confidence in their abilities, and feeling comfortable in their new surroundings. In the next section, I will discuss perceptions of academic readiness as perceived by both student participants as well as their parents. This category encompasses independence and preparedness. It focuses on the student’s academic capabilities as they move to high school. A large part of independence relies on students’ proficiency in exhibiting executive function. Skills like managing large assignments, budgeting time, and sustaining focus require some semblance of independence. A sense of independence is required to feel prepared for the transition, as students are expected to begin to foster much of the responsibility surrounding their academic performance. Both independence and preparedness go
hand-in-hand in demonstrating the ability to handle the heightened level of academic rigor in high school.

A Flaw in the System: Unveiling Perceived Academic Readiness

This section answers the second research question, which was, “How do gifted middle school students and their parents perceive their academic readiness for the transition to high school? What strategies do they implement in terms of developing independence and preparedness” (focusing on the student's academic capabilities as they move to high school)? Being academically independent involves developing and utilizing executive function skills. This portion of the findings begins with the comparison between parents’ perceptions of their children’s anxiety and excitement about the transition to high school to the student-participants' actual anxiety and excitement. In the section that follows, I’ll share the data that surfaced from the parent and student Executive Skills Questionnaire (ESQ) and provide an analysis. Finally, I will provide the conversation points made in the conversations with students in both the focus groups as well as in the webinars themselves. The topics in this section are (a) Perceptions of High School and (b) Necessity and Use of Executive Functions.

Parents’ Perceived Mental Health of Their Gifted Middle School Students

Following the parent webinar, which had the primary goal of educating families about gifted students and executive function, I conducted a survey for parents that integrated the Executive Skills Questionnaire (ESQ). This survey has two parts: the ESQ which asked about the parents’ perceptions of their children's' executive function skills in practical scenarios, and a portion that asked about the parents’ feelings or emotions about transitioning to high school, as well as their perceptions about those of their children. Table 4.1 shows the breakdown of the data on the next page.
Table 4.1

*Parents’ Emotions and Perceived Children’s Emotions - Transition to High School*

<table>
<thead>
<tr>
<th>Descriptor of Emotion</th>
<th># of Parents Who Chose “Very”</th>
<th># of Parents Who Chose “Somewhat”</th>
<th># of Parents Who Chose “Not at All”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent’s Anxiety</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Parent’s Excitement</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Perceived Anxiety</td>
<td>2</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Perceived Excitement</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note.* This table shows the number of parents’ own feelings and emotions (anxiety and excitement) regarding their child’s transition to high school, as well as their perceptions of their children’s excitement and anxiety regarding the transition.

As seen in the table above, the parents’ own anxiety is greater than they perceive their child’s. In some cases, this was due to the concern voiced by several parents that their child is indifferent to the transition, and do not know what to expect to even be anxious. The levels of excitement, however, were shared between five parents and their children, however, the same parents who mentioned their child’s indifference, were those who responded “not at all” regarding their perceptions of their child’s excitement for the transition.

**Socialization vs. Academics.** Based on the results, it seemed that parents were nearly equal parts anxious and excited, a justifiable reaction for any parent as their adolescent embarks on a new journey of independence. Of the parents who reported having somewhat of a sense of anxiety and excitement and those who reported that they were not at all anxious and very excited, they all seemed to nod to the social or academic aspect of the experience. Kenny’s mother added context to her answer noting, “Kenny would prefer to be in on-level classes so he can be with his closer friends. He also likes to do the bare minimum to get a 90 to please us, but
he doesn't have a lot of internal drive to do well. Especially for classes he doesn't think are important or interesting” (Parent ESQ, Comment).

This parent feedback echoed Kenny’ focus group comment that he did not connect with his peers in his gifted seminar; rather, he had more in common with his non-gifted friends (Parent ESQ, Comment; Focus Group 3). Anthony’s mother shared a similar sentiment, “I don’t think he sees the bigger picture. He just wants to stay with the one friend he made in middle school” (Parent ESQ, Comment). This parent's perception was regarding friendships rather than academics. This perception of parents, that their children didn’t take the transition seriously, Glenn’s mother verbalized, “He cares more about the experience than the knowledge” (Parent ESQ, Comment).

Of the parents who chose to provide context following their response and mentioned academics, they either mentioned the opportunities that would be provided to their child, their child’s lack of motivation, or their inability to budget their time. Raven’s mother added context to her response by saying, “I think she wants to be challenged and is looking forward to the opportunities she'll have in high school” (Parent ESQ, Comment). This view was consistent with her daughter’s feelings about the transition, as Raven had expressed a similar excitement later on in our conversations. Conversely, Seth’s mother offered the opposite about her child, saying, “He routinely says he doesn't like those classes, but I think it's because they actually make him work” (Parent Survey, Comment). On the other hand, Ivy’s father was more worried about the lack of executive function around budgeting time and the emotional toll that doing the most may take on her well-being mentioning, “My [child’s] main problem is wanting to take on many activities (both school and extracurriculars). She does manage to complete them, but reports feeling overwhelmed” (Parent ESQ, Comment). Though this parent infrequently checked off that his daughter had any room for improvement in any area of executive function, the concern was that
his daughter may want to be involved in extra-curricular activities, but that it would take a
negative toll on her mental health in the long-term.

While these were the parents’ own emotions and perceptions of their children’s emotions, the data that I compared were the actual emotions of the children themselves. Surprisingly, none of their responses had to do with the social aspect, but rather, they had everything to do with the academic facets of high school, specifically, higher-level courses.

**Student Emotions and Feelings About Transitioning to High School**

The survey that I administered to parents was like the one that I administered to the student participants following our focus group. Since the primary goal of the focus group is to learn more about the students past educational experiences and the culture of giftedness, it did not mention executive function by name. Rather, it had two parts: (a) The Executive Skills Questionnaire (ESQ) tailored with “I statements” appropriate for middle school students, and (b) two questions about the students emotions or feelings as they pertained to transitioning to high school. A summary of the students’ answers to the latter can be found in Table 4.2 below:

**Table 4.2**

<table>
<thead>
<tr>
<th>Descriptor of Emotion</th>
<th># of Students Who Chose “Very”</th>
<th># of Students Who Chose “Somewhat”</th>
<th># of Students Who Chose “Not at All”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>2</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Excitement</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note.* This table shows the number of students’ actual feelings and emotions (anxiety and excitement) regarding their transition to high school.

Overall, students were mostly excited about this transition, with a bit of anxiety for over half of them, and two reporting a higher degree of anxiety. Only 4 of the 11 students provided
context for why they answered the way that they did, all of which mentioned higher-level classes being the source of their emotions or feelings. Samantha mentioned that despite having the option of taking advanced placement courses in high school, she was undecided on how she would end up proceeding, noting, “I don’t think I will [take] AP [courses], but if I do [take] honors[courses], I will only choose the ones I know I will do well [at]” (Focus Group 1). This aspiration was a vastly different plan from the rest of her peers in the study, as it did not seem that Samantha had any interest or plan in taking the AP classes - something that others expressed they were excited about the possibility of. Anthony shared, “I'm nervous that I will mess up somehow and fail the classes [this year that are] required to [be recommended for] AP [courses] next year, but I'm really excited for the classes themselves” (Focus Group 1). By his own admission, Anthony had been preparing for the AP level courses by taking the classes that are considered prerequisites and had anxiety about the possibility of not being able to take advantage of the opportunity for which he was so excited. Others, like Ivy, noted that she had already been taking honors-level courses at her public charter school, which was specifically tailored to the gifted experience. She added:

I am already taking honors classes, so I am not very apprehensive about that. However, I feel a lot of pressure regarding AP classes (right now I am going to take a total of 14 APs through my senior year). I am very aware [of] what is important to colleges, and academic achievement is extremely important. (Focus Group 1)

It was clear that Ivy was laser-focused, already having her AP courses mapped out through her entire high school career. Raven, a classmate of hers who attended the same school, shared her confidence. Though Raven’s response was more about how the content of the AP course would be delivered and whether she would need to advocate for her learning style as a gifted student:
I'm very excited to take higher-level courses in high school to expand my knowledge and be properly challenged. However, as a gifted student, I'm worried about how the material will be taught, and I might not do so well in the class if the style of teaching doesn't make sense to me. AP classes are a big deal with a lot of rigor and I would hate for them [not to] work for me. (Focus Group 1)

Raven was one of the more self-aware students who utilized the collective sense of “we” when referring to the greater gifted population, so it came as no surprise that she mentioned the way in which she learned as a gifted student and the possibility of needing to advocate for herself.

With the sense of excitement and anxiety that came with thinking about the transition to high school and taking higher-level courses, so did a conversation regarding the skills necessary to succeed in such courses - executive functions. In addition to the students and their families sharing their own feelings and emotions about the transition, both parties also reflected on the use of executive function, or a lack thereof; the parents again answered regarding their perceptions of their children’s usage of the skills, and the students answered for themselves. Although not expressly labeled as executive functions, the initial focus group with student participants included notetaking, studying, time management, and their expectations for transitioning to high school. In the next section, I will discuss the outcomes of all three sets of data and the similarities and differences between them.

**Executive Functions Before High School.** As a result of the candid nature of the conversation around the type of work the student participants were given in their educational experiences thus far in their academic tenure, and the consensus of the group was that the work had been merely busy work and not challenging in the slightest, I inferred that this also meant they did not need to use executive function skills very frequently if at all. Being robbed of an
opportunity to hone these skills before high school could pose an issue, as executive function skills are critical when taking higher-level courses, such as honors or AP classes. Before getting into the participants' preconceived notions about what high school was going to be like, I wanted to understand what kind of foundation they had to be successful.

**Opportunities to Hone EF.** Unsurprisingly, students were as candid with their responses about whether they had used skills such as studying for tests, taking notes, budgeting time, or initiating tasks. Anthony noted:

I haven't really had to take notes or study for anything except for this year in Geometry [where] I've had to take notes a bit, and it's really surprising that I never learned the skill before. Most people already know how to take notes, but I've never needed to do that before. I just usually just bum notes off my friends because I just don't take notes. I stop. I pay attention during class, but then I just stop there. (Focus Group 1)

There had really been no expectation or necessity for Anthony to take notes before, as he could merely sit and listen to the information or content being delivered, remember it, and superficially demonstrate this learning rather than needing to apply it. Samantha’s experience was similar, in that she, too, had never needed to take notes or study until she began taking higher-level courses offered to her in middle school. She noted, “When I was younger, I knew that even if I didn’t study, I’d still get an A, but maybe not the highest A. It just wasn’t worth it for the few extra points. Now that [I’m in higher-level classes,] I actually need to study” (Focus Group 1). This notion that, although they would not earn the highest grade, students were content with an A, harkened back to the discussion we had about motivation and finding value in whatever they were spending their time doing. Raven also had a similar experience, mentioning, “[Most of the time] taking notes or studying just didn't do anything to help me, and not doing these things
wasn't detrimental” (Focus Group 1). Not finding value or merit in studying or note-taking was a
natural response as students reported still being able to achieve, without wasting their time with
what they perceived as menial study skills. For those who were forced to take notes as a study
skill, like Ivy, it stuck with her in a way that made her adverse to honing the strategy:

This is something that annoys me to this day about a lot of teachers. [They] are very
[dead] set on [students] taking paper notes, and paper notes just don't work for me.
[be]cause, I write very slow, and I'm when I'm writing, I'm so focused on getting the
letters [legible] that then I don't think I'm actually thinking about the actual concept I’m
taking notes on. People [always say], ‘If you write it down, you’ll remember it better.’
But [not me]. I'm so focused on the shapes [of the letters] themselves. (Focus Group 1)

Considering gifted students are more susceptible to frustration and anger when they are faced
with an expectation that does not serve them personally (Caldwell, 2022), the expectation for
students to use a strategy such as note-taking made it seem as if these kids were being required to
complete tasks a certain way simply for the sake of compliance and not because it would prove
beneficial to them in the long term. Apart from studying and note-taking, a few participants
mentioned task initiation and procrastination as something they had adopted as a common
practice. Marie tied the two thoughts together, adding, “I procrastinate a lot with everything:
cleaning my room, taking notes, reading - just everything. I just like [to leave] it to the last
second, like cramming before the test. I'm trying to get better at that. But for now, like, I'm okay
procrastinating” (Focus Group 1). Marie has been able to procrastinate with what she perceives
as having no real consequences and is content to continue this practice of procrastination until it
becomes detrimental. Johnny agreed with Marie’s sentiment and felt confident in his adopted
practice of procrastination saying, “I know, this sounds bad, but I'm [a] panic mode worker.
Yeah, I'm really aware; I work incredibly well under stress” (Focus Group 2). Similarly to Marie, Johnny’s tendency to procrastinate and be a “panic mode worker” has not proven to be a detriment to his academic achievement, and hence is something he embraced as a positive trait in himself; this ability to “work incredibly well under stress” (Focus Group 2).

Despite being averse to using or honing study skills, note-taking skills, and task-initiation skills, the participants did understand that they would need to figure something out to be successful because doing nothing was not going to yield success. Raven offered, “I [think everyone can] agree about how, as we get into higher-level [classes], we'll have to use the skills that we didn't necessarily need to use [up until this point]” (Focus Group 1). This baseline not only showed how students saw themselves applying executive function skills in everyday life, but also showed the perceptions of their parents. The data from the Executive Skills Questionnaire (ESQ) provided some insights into these curiosities and is discussed in the next section.

**Everyday Application of Executive Function.** The beauty of an instrument like the ESQ is that those who take the questionnaire are left not only with the skills they could improve upon but also the skills of which they are highly skilled. Despite students reporting a lack of opportunity to hone these skills in their academics, of course, they would hone some of these skills just by living life. I did not merely set out to gain the student perspective at this juncture of the study, rather, I sought a more complete picture, which included the parents’ perceptions of their children’s exhibition of executive function skills.

**Parents’ Perceptions of Their Children’s Executive Function.** The survey parents completed following the informative webinar required that they answer a series of questions
about their child’s proficiency, or lack thereof, in using executive function skills in authentic, everyday scenarios. The questions can be found in Figure 4.1 below:

**Figure 4.1**

*Parent-Facing Executive Skills Questionnaire (by Skill)*

<table>
<thead>
<tr>
<th>INHIBITORY CONTROL QUESTIONS</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child acts on impulse.</td>
<td>My child gets in trouble for talking too much in class.</td>
</tr>
<tr>
<td>My child says things without thinking.</td>
<td>My child has a short fuse – They are easily frustrated.</td>
</tr>
<tr>
<td>My child has difficulty paying attention and is easily distracted.</td>
<td>My child runs out of steam before finishing homework or other tasks.</td>
</tr>
<tr>
<td>My child has difficulty setting aside fun activities in order to start homework.</td>
<td>My child can’t seem to save up money for a desired object – problems delaying gratification.</td>
</tr>
<tr>
<td>My child doesn’t see the point of earning good grades to achieve a long-term goal.</td>
<td>My child prefers to live in the present.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WORKING MEMORY QUESTIONS</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child says, “I’ll do it later” and then forget about it.</td>
<td>My child forgets homework assignments or forgets to bring home needed materials.</td>
</tr>
<tr>
<td>My child loses or misplaces belongings such as coats, gloves, sports equipment, etc.</td>
<td>My child has difficulty setting priorities when they have a lot of things to do.</td>
</tr>
<tr>
<td>My child becomes overwhelmed by long-term projects or big assignments.</td>
<td>My child’s backpack and/or notebooks aren’t organized.</td>
</tr>
<tr>
<td>My child has trouble keeping their bedroom tidy.</td>
<td>My child doesn’t have very effective study strategies.</td>
</tr>
<tr>
<td>My child needs to be reminded to start chores or homework.</td>
<td>My child gets annoyed when homework is too hard or confusing or takes too long to finish.</td>
</tr>
<tr>
<td>My child gets upset when things don’t go as planned.</td>
<td>My child has trouble thinking of a different one.</td>
</tr>
<tr>
<td>If the first solution to a problem doesn’t work, my child has trouble thinking of a different one.</td>
<td>My child puts off homework or chores until the last minute.</td>
</tr>
<tr>
<td>My child has problems with open-ended homework assignments (creative writing, etc.).</td>
<td>My child has trouble planning for big assignments (knowing what to do first, second, etc.).</td>
</tr>
<tr>
<td>My child has a hard time estimating how long it takes to do something (such as homework).</td>
<td>My child often doesn’t finish homework at night and may rush to get it done in school before class.</td>
</tr>
<tr>
<td>My child needs a lot of time to get ready for things (e.g., appointments, school, changing classes).</td>
<td>My child doesn’t evaluate their performance and change tactics to increase success.</td>
</tr>
</tbody>
</table>

*Note.* The table above shows the list of questions in the Parent-Facing ESQ broken into the three executive function categories of inhibitory control, working memory, and flexible thinking.

The results of the survey showed that 42% of parents agreed or strongly agreed when asked whether their child showed a deficit around inhibitory control, while 44% disagreed, and 14% were neutral. This section included phrases dealing with attention and focus, stamina in
these areas, and handling impulses. The survey revealed that, when asked about their child’s ability to utilize cognitive flexibility, 51% of parents agreed or strongly agreed that their child did not exhibit proficiency in this area, while 29% of parents disagreed and 20% were neutral. These questions related to children being able to adapt to changing scenarios, reflect on their own thinking and plan ahead for large tasks or assignments. Finally, when asked about how their child performs in the working memory domain, 62% of parents agreed or strongly agreed that their child did not demonstrate proficiency, while 27% disagreed and 11% were neutral (see Figure 4.2).

**Figure 4.2**

*Parent Perceptions of Child’s EF Proficiency*

![Bar chart showing parent perceptions of child's daily executive skills proficiency](chart)

**Note.** This chart shows the results of the parent-facing ESQ, where parents provided their perceptions of their child’s proficiency in the use of executive function skills.

The choice for parents to enroll their child to participate in the study could have been an indication that they perceived their child as having areas for growth regarding executive
function, however, the ESQ results further reiterated their concern for their child to hone these skills.

**Students’ Perception of Their Executive Function.** The survey students completed following the focus group required that they answer a series of questions about their own proficiency, or lack thereof, in using executive function skills in authentic, everyday scenarios. The questions were revised to “I” statements, and although they have been grouped by overarching skills in Figure 4.3, they were in randomized order when students took the survey.
**Figure 4.3**

*Student-Facing Executive Skills Questionnaire (by Skill)*

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inhibitory Control Questions</strong></td>
</tr>
<tr>
<td>I act on impulse.</td>
</tr>
<tr>
<td>I get in trouble for talking too much in class.</td>
</tr>
<tr>
<td>I say things without thinking.</td>
</tr>
<tr>
<td>I have a short fuse – I am easily frustrated.</td>
</tr>
<tr>
<td>I have difficulty paying attention and am easily distracted.</td>
</tr>
<tr>
<td>I run out of steam before finishing homework or other tasks.</td>
</tr>
<tr>
<td>I have problems sticking with schoolwork or chores until they are done.</td>
</tr>
<tr>
<td>I have difficulty setting aside fun activities in order to start homework.</td>
</tr>
<tr>
<td>I can't seem to save up money for a desired object – problems delaying gratification.</td>
</tr>
<tr>
<td>I don't see the point of earning good grades to achieve a long-term goal.</td>
</tr>
<tr>
<td>I prefer to live in the present.</td>
</tr>
<tr>
<td>I say, “I'll do it later” and then forget about it.</td>
</tr>
<tr>
<td>I forget homework assignments or forget to bring home needed materials.</td>
</tr>
<tr>
<td>I lose or misplace belongings such as coats, gloves, sports equipment, etc.</td>
</tr>
<tr>
<td>I have difficulty setting priorities when I have a lot of things to do.</td>
</tr>
<tr>
<td>I become overwhelmed by long-term projects or big assignments.</td>
</tr>
<tr>
<td>My backpack and/or notebooks aren’t organized.</td>
</tr>
<tr>
<td>My desk or workspace at home is a mess.</td>
</tr>
<tr>
<td>I have trouble keeping their bedroom tidy.</td>
</tr>
<tr>
<td>I don't have very effective study strategies.</td>
</tr>
<tr>
<td>I need to be reminded to start chores or homework.</td>
</tr>
<tr>
<td>I get annoyed when homework is too hard or confusing or takes too long to finish.</td>
</tr>
<tr>
<td>I get upset when things don’t go as planned.</td>
</tr>
<tr>
<td>If the first solution to a problem doesn’t work, I have trouble thinking of a different one.</td>
</tr>
<tr>
<td>I get upset when plans or routines need to change.</td>
</tr>
<tr>
<td>I have problems with open-ended homework assignments (creative writing, etc.).</td>
</tr>
<tr>
<td>I put off homework or chores until the last minute.</td>
</tr>
<tr>
<td>I have trouble planning for big assignments (knowing what to do first, second, etc.).</td>
</tr>
<tr>
<td>I have a hard time estimating how long it takes to do something (such as homework).</td>
</tr>
<tr>
<td>I often don't finish homework at night and may rush to get it done in school before class.</td>
</tr>
<tr>
<td>I tend not to check my work for mistakes even when the stakes are high.</td>
</tr>
<tr>
<td>I need a lot of time to get ready for things (e.g., appointments, school, changing classes).</td>
</tr>
<tr>
<td>I don’t evaluate my performance and change tactics to increase success.</td>
</tr>
</tbody>
</table>

*Note.* The table above shows the list of questions in the student-facing ESQ broken into the three executive function categories of inhibitory control, working memory, and flexible thinking.

The results of the survey showed that 45% of students agreed or strongly agreed that they were not proficient in inhibitory control, while 30% disagreed and 21% were neutral. Just like the parent survey, this section included phrases dealing with attention and focus, stamina in these areas, and handling impulses. The survey also revealed that, when asked about their own ability to utilize cognitive flexibility, 39% of students agreed or strongly agreed that they did not feel proficient in this area, while 36% disagreed and 24% were neutral. Just as the parent survey,
these questions related to being able to adapt to changing scenarios, reflect on their own thinking, and plan ahead for large tasks or assignments. Finally, when asked about how they perform in the working memory domain, 45% of students agreed or strongly agreed that they did not demonstrate proficiency, whereas 39% disagreed and 24% were neutral (see Figure 4.4). While students were more likely to answer “neutral” more often than parents, many students answered as if they had room for growth in each of the executive function categories.

**Figure 4.4**

*Student Perceptions of Their Own Executive Function Proficiency*

![Chart showing student perceptions of executive function proficiency](image)

*Note.* This chart shows the results of the student-facing ESQ, where students provided their own proficiency in the use of executive function skills.

**Comparing Parent ESQ Results and Student ESQ Results.** The results of the surveys differed slightly, though one factor for this difference was that the students utilized the “neutral” choice much more frequently than the parents did. Both surveys showed that there was a lack of proficiency in executive function skills, although there were two outliers in the parent group,
wherein, they chose “strongly disagree” for nearly all the skills, which raised the question of why they chose to participate and consented for their child to participate in the study. It could be hypothesized that families saw this study as an extra opportunity and seized it as just that.

Still, the looming fact about needing to use skills the students had not practiced within an academic setting was a somewhat daunting thought to many, as were many of the students’ other perceptions about what high school was going to be like, and trepidation about the unknown became another source of anxiety, though coupled with excitement.

**Perceptions About HS (Overall)**

The participants had all agreed that they would need to get serious about putting forth effort to be successful in high school, but I wanted more details about their perceptions about why that was so. Anthony noted, “I'll have more people in my corner, but a lot more stress and extra work. But it'll actually be work I want to do, I guess” (Focus Group 1). Raven mentioned the content being more difficult, and hence her understanding may come less easily, “I expect that it's going to be harder, and they're going to expect more of us. I've heard all of the others [say] as gifted kids, we’re required to have more work done. I think that's going to continue in high school.” (Focus Group 1) That the expectation to achieve more was going to continue in high school was a source of frustration for Raven, as she elaborated further:

“The thing is with gifted kids, they honestly are like, ‘You're gifted. You can do more work. You can do harder work and more work.’ And so, in high school, I think one of the challenges might be that we’ll [continue to] be given more work, and [that] work that is [going to be] harder because it’s [about] things we haven't learned yet.

This sense of heightened expectations of being able to perform the same as students did in elementary and middle school was an on-going theme. On one hand, these students were excited
to finally be challenged in higher-level courses, but they knew that they might need to advocate for themselves and their own mental health along the way. Ivy made mention of this very point, saying, “I do think the expectations are about to get like a lot higher in ninth grade. Every one's going to expect you to [score] a 5 on every AP test or a 1600 on the SAT, but we can't do it all.” (Focus Group 1) Preparing to be misunderstood in high school, just as they had experienced at every other juncture in their academic journey thus far, was a point of disappointment and frustration, yet again. A sense that they were being failed by a system that was supposed to encourage a love of lifelong learning, but instead was structured counter to the way they felt they learned as the collective, “we”. Raven, who was the originator of the collective “we” in previous conversations with the group surmised:

[The way we qualify for higher-level] classes is by taking a test on the things that we haven't learned that we would learn in that course to see if we [can handle it]. Sometimes, that's not how we work. That's not what we're gifted in. It's not just having knowledge. It's about the ability to [take] higher-level courses and understand [the material] faster. I'm into computer science, STEM and astronomy, and I think that a lot of gifted kids [are passionate about] things that you can't particularly study for. AP courses are taught to a test, but [gifted kids] don't learn the same way as everybody else.

Regardless of the structure of AP classes and knowing that taking higher level classes do not equate to feeling seen and heard regarding how they learn as a gifted student, this did not stop the students from knowing which AP classes were offered to ninth graders. Further, students had already made up their minds regarding which classes they planned on taking, some of them mapping out all four years of their high school career already, in preparation for the assumed majors they would pursue post-secondary.
Leveled Courses. The juxtaposition of the participants being disappointed in the structure and expectations of AP classes while also continuing to buy into the hype around these higher-level courses was ironic. Unsettling was the way that the tone of the conversation changed when I asked the participants which AP classes they had planned on taking if any. Before talking specifics, the participants sounded like average kids, with anxiety and excitement about the possibilities, but when asking about the specific courses the kids planned on taking, many took on a more robotic tone, which I could only assume was due to rehearsing and divulging their academic plans to parents, family members, and teachers over-and-over again.

Yunjin was planning to take every AP class offered to her as a ninth-grade student:

My school offers AP Biology, AP World History, and AP Computer Science, and I wanna take all of them. I know that some people say that it's too much, but I know that AP Computer Science might be... I don't wanna say ‘easier’, but I might understand it faster, because I've been coding on the side, too. So, I'll probably [understand] some of the concepts that they're trying to teach [more quickly].

Yunjin was willing to take the risk despite warnings from her teachers, peers, and guidance counselors that taking three AP courses as a ninth-grade student might be too much. Ivy had a similar mindset, noting, “I am planning on taking AP Pre-Calculus which is [unheard] of in other places.” It was clear that Ivy had had conversations about what other students at other schools had available to them, and her point was made when Marie said, “We don't have AP, but we do have advanced classes. So that's interesting, I guess. We can take higher-level math classes - there [are] kids who are taking eleventh-grade math classes in eighth grade.” Even without the prospect of AP classes, students like Marie were planning on taking advantage of whatever opportunities were afforded to them. Since the students would have the opportunity to choose a
level of academic rigor that was sold as meeting their academic needs, I wondered if they would continue to also receive gifted services, as many students often exit their gifted services once they reach high school.

**Gifted Services.** The participants were candid about their experiences in their respective gifted programs throughout their academic careers, and while they did not find much merit or value in the type of work they were required to complete in those settings, the sense of community that they felt in the space was priceless for their mental health and well-being as it pertained to their identity as gifted students. Johnny worried he might have to choose between higher-level classes and a gifted class, saying,

I wouldn't want to leave the [higher-level] classes in high school because those are really important, but [if there were] a gifted study hall, just so [our] gifted community could stay together throughout high school... because we're such good friends - I don't want to give it all up. (Focus Group 2)

Johnny could not fathom transitioning to high school without some semblance of a gifted community, as he knew it, being in place. Not everyone in the group shared his sentiments, however. Yunjin mentioned that she had been encouraged to exit her gifted services, stating:

In the high school, they actually don’t recommend [continuing] in the gifted program, because, you have to do like an extra project on the side, [along] with all of your AP and honors classes. I know that they only have one [gifted] seminar in the high school, which is for research, so we don’t have as many diverse seminars anymore, because [we] have [access to] more challenging classes. (Focus Group 1)

Yunjin had been talked out of continuing her gifted services at the high school level, while Kenny was making up his own mind based on his own logic, noting, “You're already really busy
with classes and other outside-of-school activities. If there's no real benefit of helping [to get into] college, I don't think [it’s] worth it.” (Focus Group 3) Given that Kenny had expressed that he did not have many connections in the gifted seminar during his focus group, it came as no surprise that he was choosing to exit his gifted services in high school. That said, the fact that he mentioned the program not being beneficial because it was not something he could put on a college application was proof that he, too, had been talked out of taking his services to high school.

**Bridging The Gap - Explicit Instruction on EF Through Webinars**

The research presented in Chapter 2 noted that there are three strategies to assist gifted students in honing executive function. The first is mindfulness, which suggests that when students are explicitly taught about executive functions, are provided with practical examples of what these functions look like in everyday life and are given the timeline of neurological development to determine the appropriate expectations that they can hold of themselves, they have the power to name and identify these skills. Coupled with mindfulness is the strategy of metacognition, which research suggests is imperative in conjunction with mindfulness. This strategy allows students to set goals by first choosing a strategy to hone executive function, then testing that strategy in a low stakes environment, and being allowed to reflect on the efficacy of their chosen strategy. Finally, brain training, which should be used in conjunction with the first two strategies, is more about teaching transferability and neuroplasticity concerning executive functions. This was the structure of the three webinars that students attended.

**Snapshot of Student Executive Function Webinars (Vignette)**

Students began to filter into the Zoom meeting, greeting one another as they had the week before. Once the five of them were settled, I said my pleasantries, and asked how the week had
gone – this week in particular, students had goal set to utilize student-selected strategies that would hopefully assist them in honing working memory, last week’s webinar topic. Almost immediately, students’ virtual “hands” began to pop up, as they eagerly demonstrated their willingness to share. I called on Raven who was always reflective in this process each week. She enthusiastically counted her experience as a win, “I used post-it notes that were taped to my door frame, and I organized them by priority as a visual reminder [for each task I needed to accomplish this week]” (Webinar 2). It went on like this, students shared their experiences of implementing strategies where they reflected the week before needing improvement within. Students showed vulnerability, not only sharing their success but also reflecting on their defeat – a benefit seen from cultivating a sense of community in the focus groups at the beginning of the study. After all the students shared their experiences, I told them about the executive function skills I would be teaching them about that day – in this case, inhibitory control. Using a slides presentation to keep myself on track for our 45 minutes together, I taught about the skill in isolation, as well as what the skill looked like more authentically in daily life. After this, students would reiterate why this skill was important to hone, and then goal-set based on their self-identified deficits and strategies they planned to use to hone the skill, using an exit ticket so that I would have their responses recorded to use the following week. Following the webinar, I emailed the students’ families letting them know which executive function skills we focused on this week and encouraged them to engage in conversations about their child’s goal for the week, in the hope that accountability would be utilized for maximum effectiveness.

**Student Reflections.** During the final student webinar, I asked participants for their honest feedback about the webinars. Of the 11 students, only eight of them filled out the final reflections, and their feedback was only complimentary. They all planned to use the strategies
learned in the webinars pertaining to executive function, and of the participants that responses, 100% of them found that they felt more “at ease and better prepared for transitioning to the high school” (Samantha, Final Reflection). When asked what they would change about the webinars, students suggested hosting more of them (Ivy & Raven, Final Reflection) and that they be longer (Etana & Marie, Final Reflection), showing that there is an authentic need for students to be given a space to learn, strategize, test, and revise when it comes to honing executive function.

Apart from students being complimentary about the webinars, there was another theme that emerged from the student reflections - an appreciation for time with other gifted kids. When asked about any self-realization moments regarding giftedness or mental health, 6 out of 8 participants noted that they “Didn’t realize how many people [were] like [them].” Johnny specifically reflected that “[He] loved meeting new gifted kids.” (Final Reflection). A sense of community was a large theme within the findings of this study, and it suggests that gifted students yearn for more opportunities to engage and connect with gifted students like themselves, but even more important, ones that they are not familiar with, helping them to make sense of not only their immediate and local communities of gifted students but also their world and gifted culture. This is unsurprising as many of the participants expressed feelings of being misunderstood throughout their entire academic tenure up until the present. The feeling of belonging, of finally feeling understood, was a by-product of the webinars - a priceless one at that.

Conclusion

This chapter provided an overview of the findings of this qualitative study which explored whether explicit instruction on executive functioning supported students in their transition to the secondary level. Specifically, the study sought to understand the experiences of
gifted middle school students, and their excitement and/or anxiety as it pertains to transitioning to high school. The chapter gave a demographic overview of the twelve student-participants in the study. The second section of the chapter was organized under the three research questions that guided this study: (1) What is the role of giftedness and gifted culture in the development of students’ sense of self? (2) In what ways does direct instruction about executive functions contribute to gifted students and their parents’ perceptions of emotional well-being regarding their transition to the secondary level (high school)? (3) In what ways does explicit instruction about executive functions contribute to gifted students and their parents’ perceptions of academic readiness regarding their transition to the secondary level (high school)?

Findings suggest that because gifted students are not adequately and appropriately challenged academically, and are misunderstood socially and emotionally, they do not have ample opportunities to hone executive functions within the academic setting. This, in turn, leads to feelings of anxiety, and a general sense of unpreparedness regarding the transition to high school, which impacts gifted students’ mental health and well-being in a negative way. Parents and their children have similar perceptions of the ways in which their children, or the children themselves demonstrate executive function with or without proficiency. Finally, when given the opportunity to attend an intervention wherein students are explicitly taught about executive function and are given space to practice mindfulness, metacognition, and brain training, their overall well-being, and feelings about the transition to high school improve. The next section describes the implications that were derived from this study in the field of gifted education.
Chapter 5: Implications

The purpose of this study was to amplify student voices through an investigation of their educational experiences as gifted students, as well as to consider the implications that explicit teaching and learning about executive function would have on their perceptions of emotional well-being and academic readiness regarding their transition to high school. Through a case study design, I used focus groups and surveys as a means of building rapport with the student participants and webinars as an intervention to teach students about executive function and to assist them in goal setting. I conducted all interactions via Zoom, which added accessibility for student participants to be involved but also lent itself to creating a sense of community, which brought about vulnerability among the cohorts. In this chapter, I will: (a) summarize the study; (b) review the connections between the study’s data and theoretical framework; (c) discuss the results; (d) provide potential limitations to the study’s findings; and (e) offer implications for both future educational practice and research.

Summary of Study

This study gave participants the chance to comprehend the complexities of gifted culture as they experienced it up until the end of their middle school years and sought to pinpoint the emotions or feelings that students and their parents experienced as they made the transition to high school. Upon the completion of the study, it is imperative to address the implications to the field of gifted education derived from the findings. The research questions for the study were:

(1) What is the role of giftedness and gifted culture in the development of students’ sense of self?
(2) In what ways does direct instruction about executive functions contribute to gifted students and their parents’ perceptions of emotional well-being regarding their transition to the secondary level (high school)?

(3) In what ways does explicit instruction about executive functions contribute to gifted students and their parents’ perceptions of academic readiness regarding their transition to the secondary level (high school)?

Gen Z students deemed "gifted" are at a higher risk for depression and suicide because of the rising levels of stress and anxiety they experience (Andrews, 2014). Klimkeit et al. (2011) discovered that teenagers with depression and/or anxiety disorders exhibited impairments in working memory and processing speed, which are crucial executive skills. Experts are now advocating mindfulness activities to develop and refine executive functioning skills in gifted students to enhance their mental and emotional well-being (Sisk, 2021). Because gifted students are educated in elementary and intermediate schools in a systematic and assisted manner, the need to hone executive functioning skills in these settings is reduced. The issue arises when students enroll in advanced courses in high school, requiring them to study the prerequisite content before attending class. Many previous studies neglected to include the perspectives and experiences of adolescents immersed in gifted culture regularly, and hence, this case study explored the emotions experienced by gifted adolescents before they transitioned to high school. The specific case parameters of State University’s graduate program are highlighted in Chapter 3 (see Description of the Setting section).

Following the informational parent webinar that aimed to educate families of gifted students about the intersections of giftedness and executive function, parent participants completed a parent-facing Executive Skills Questionnaire to gain insight regarding their
perceptions of their child’s proficiency. Student participants shared their experiences through a focus group and were then tasked with completing a student-facing Executive Skills Questionnaire to gain insight into their own perceived proficiency using executive functions daily. Over the course of a three-week schedule, students attended and participated in three webinars, each focusing on one of the overarching executive functions. At the end of the three weeks, students reflected on their experience as a whole and, more specifically, how the intervention (i.e., webinars) contributed to their perceptions of emotional well-being and academic readiness as it pertained to the transition to high school. Results indicate that gifted children generally perceived that their teachers were unable to fulfill their intellectual, social, and emotional needs. Participants also expressed that their regular classes lacked the necessary rigor to develop executive function skills prior to high school, leading to feelings of fear and inadequacy when faced with more advanced subjects. However, participants stated that the researcher’s interactive webinars on executive function, along with encouragement to create goals and reflect on strategy use, enhanced their mental health and well-being by boosting their confidence and readiness.

The coding procedure involved both preliminary and secondary rounds of coding. I used the primary coding process to condense sections of data (Miles et al., 2014), and in vivo coding as the primary cycle coding approach. In vivo coding incorporates remarks gathered immediately from the participants' verbal expressions. Therefore, in vivo coding focuses on emphasizing and honoring the opinions of the participants (Miles et al., 2014). This study used in vivo coding to prioritize participants' perspectives by adding their own language and expressions as codes instead of using words and phrases provided by the researcher (Saldaña, 2013). I used an exploratory coding approach to identify themes that arose from the data. During the second
round of coding, I analyzed the data to identify words or sentences that addressed the study objectives and categorized them into subgroups until I hit the point of saturation and no new information emerged.

The findings of this study indicate that when students are given a space to share their experiences with other similarly aged, gifted students, they can build a sense of community and find solace in the fact that they are not alone in their emotions or feelings as they pertain to the transition to high school. Many students in this study had similar shared experiences throughout their primary and middle school careers, wherein they perceived their teachers as misunderstanding the plight of the gifted child in regular education classes. The sense that teachers gave them "busy work" to keep them superficially engaged in the classroom created a collective sense of disappointment among the group. Participants noted that because of the lack of rigor in their classes thus far, they had never needed to utilize executive function skills, and, hence, were unsure of being able to employ or transfer these skills when they needed them most as they enrolled in higher-level courses at the high school level. Finally, participants found merit and value in the researcher-delivered webinars (interventions) and noted that attending the webinars eased their feelings of anxiety, overwhelm, and unpreparedness as they related to the transition to high school because of the new understanding that they had of executive function.

There are several outcomes from this study, the first of which is that gifted students benefit from building community with other gifted students in a space where they can discuss what it means to be gifted and share common experiences. It was difficult for participants to verbalize what it meant to be gifted and how this identification shaped who they were as a person until they heard similar stories from their gifted peers. Aside from gifted students being unclear of what it means to be identified as gifted, another implication of the study showed that pre-
service teachers need to be educated on the best practices and pedagogy around meeting the needs of gifted students so that they are effective in delivering meaningful, authentic educational experiences and opportunities that foster a love of learning and creativity that so many of our gifted students yearn to hone. This outcome intersects with the need for explicit teaching of executive function, practical examples of these skills, safe spaces for trial and error, as well as reflection on strategies students used to hone these skills. Throughout the course of the webinars, I intentionally used mindfulness, metacognition, and reflection, along with brain training, in her intervention lessons, which students found valuable.

**Application of Conceptual Framework to Findings**

Supporting the development of gifted students requires that educators and families attend to their intellectual, social, and emotional needs in tandem. Roeper (1982) echoed this sentiment, noting that “emotions cannot be treated separately from intellectual awareness” (p. 21). Sustained effort by current and forthcoming scholars to further this academic pursuit is of the utmost importance to attain a deeper comprehension and provide vital assistance to the underrepresented group of gifted students (Ford et al., 2023). I used several theories to guide this study, and though each of them isolates a facet of the gifted identity, the conceptual framework, however, notes the necessity to combine each of the theories into one concept, which in turn, encompasses the whole of the gifted adolescent. I illustrated this conceptual framework and the intersections of each theory in Chapter 2 (see Figure 2.1) in a graphic titled “Anatomy of a Gifted Learner,” wherein the conceptual framework is further broken down into three parts: (a) The Head: How Gifted Learners Think; (b) The Heart: How Gifted Learners Feel; and (c) The Hands: How Gifted Learners Learn. In this section, I will discuss the results and detail the significance of the data gained from participants throughout the study regarding the importance
of supporting gifted students in their educational experiences before they transition to high school.

**The Head: How Gifted Learners Think**

Throughout the study, students consistently mentioned the ways that they accessed gifted services and what those services entailed. From their innate desire to be around like-minded gifted peers within a gifted cohort model, to yearning for a curriculum that would enrich rather than provide busy work, the student participants embodied “The Head” and how gifted learners think. The desire to learn and socialize with gifted peers aligns with The Columbus Group and Roeper’s theory that gifted students’ thoughts differ greatly from those of their non-gifted peers. It is for this reason that students perceived they had a connection with their gifted peers and that their shared gifted identity fostered a community of learners who understood one another. This notion of feeling understood was evidenced by the participants' use of the collective “we” (see Chapter 4) indicates the sense of community and belonging participants expressed they felt while interacting with their gifted peers. Feeling understood allows gifted students to develop a sense of belonging and acceptance, two crucial facets necessary for their overall well-being in a world of isolation, perfectionism, imposter syndrome, and high expectations from others.

The way that students perceived the tasks given to them by teachers when they were in their gifted cohorts was another recurring theme throughout the study. The students were acutely aware that they required different work than their classmates, voicing that they sought work to replace the assignments that they encountered in the regular education classroom. Instead, students reported feeling disappointed because they were typically assigned work like what they were learning in the regular education classroom which they labeled as “busy work”. Though students did not verbalize this directly, what they were describing was a yearning for work that
honored their “natural abilities into talents” (Gagne, 1985) and work that allowed them to flex their creativity (Renzulli, 1986).

**The Heart: How Gifted Learners Feel**

Not only did participants constantly allude to their needs remaining unmet academically, but they also broached the topic of feeling misunderstood socially and emotionally. Many students noted that it was difficult to make good friends, and, by default, they had only a few close friends—those ones that were gifted and could truly understand the sense of “differentness” they felt as gifted adolescents. Throughout our conversations, nearly all participants alluded to having one of the five overexcitabilities that Dabrowski (1964) identified: psychomotor, sensual, intellectual, emotional, and imaginational. Two students mentioned being misdiagnosed as having ADHD, when they, as well as their parents, assumed it was merely a facet of their giftedness. Others projected an emotional overexcitability, as they were especially mindful of injustices that were carried out against them, desiring to right these wrongs.

This feeling of being misunderstood without fully understanding why or how it impacts their social lives echoes Hollingsworth’s theory of asynchrony. Students who have this feeling of differentness and are having internal sense-of-self dilemmas prior to the transition to high school are exhibiting asynchrony; that is, despite developing quickly intellectually, they are seemingly stunted when it comes to their social and emotional development. Several parent participants also resonated with the theory of asynchrony, noting that their gifted teens seemed disinterested in school both in the present and for their transition to high school, even though just a mere two years earlier they were straight-A students who showed promise and potential. This shift in persona is precisely what Betts and Neihart mentioned in their “Profiles of a Gifted Learner”
research (1988) as a predictable outcome of gifted students’ emotional, behavioral, and developmental needs remaining unmet in adolescence.

**The Hands: How Gifted Learners Learn**

Along with a feeling of being misunderstood by teachers - and sometimes parents - students expressed their disappointment with how those teachers who were responsible for their education knew little about the rationale behind their gifted identification. During our discussions about whether it would be beneficial to have a teacher who is specifically trained to interact with and teach gifted students or who was also gifted themselves, students were eager to express their desire for a scenario in which the adult in the room “got them.” This yearning to be seen and understood on a deeper level than just being “the smart kid” is exactly what Betts (1988) intended when he cautioned that teachers need to know a gifted student’s type or profile before beginning to instruct. Likewise, Dabrowski’s (1964) overexcitabilities fall into this category of necessity in understanding the uniqueness of each gifted student prior to instruction. It seems that getting to know students would be considered “best practice” in education, through building rapport and fostering positive relationships with them. However, the myths and preconceived notions that gifted students are all the same perpetuate the notion that once a teacher has met and taught one gifted student, they have essentially taught them all. Not only is it crucial that teachers strive to truly know and understand their gifted students, but it is also imperative that students are taught to know and celebrate their uniqueness as gifted learners.

**The Soul: Who The Gifted Learner Believes Themselves to Be (Demystification)**

Throughout this process of talking with students and gleaning all that I could from our time spent with one another, listening to their lived experiences throughout their educational tenure up until their transition to high school, it became clear that it is not only imperative to
consider the head, heart, and hands when supporting gifted students, but also The Soul: Who Gifted Learners Believe Themselves to Be. In Figure 5.1, the original conceptual framework illustrated in Chapter 2, has been revised so that “The Soul” of the student is underneath The Head, The Heart, and The Hands, to depict the foundational nature of students having a firm understanding of themselves as it pertains to their giftedness, which can only impact their mental health and well-being for the better.
Figure 5.1

Anatomy of a Gifted Learner Conceptual Framework (Revised)


The soul is defined as the embodiment or immaterial essence of a person. In the realm of giftedness, it is the internal makeup of that which makes gifted students, gifted. Throughout the study, participants consistently brought to light the fact that they did not know what it was that made them gifted. In fact, in the students’ final reflections, when asked about what they gained
from the experience, nearly all of the participants noted feeling a sense of understanding and validation of their giftedness. When students are identified as gifted, oftentimes at a very young age, there is no explicit instruction that explains this identification to them, and many of the participants expressed a sense of confusion as to why they were suddenly attending a different class than their regular education class during the school day.

These reasons suggest that newly-identified gifted students would benefit from undergoing a process of demystification, a term first introduced in “Schools Attuned: A Model for Collaborative Intervention” (Weiner & Murawski, 2005). In the article, demystification is defined as “a process by which faculty work to help students understand their own learning process” (p. 286). This process of demystification is primarily used to teach students who receive special education services about their disability so that they feel “empowered to be self-advocates” (p. 286). Given the conversations about the misunderstanding of giftedness by parents, teachers, and students themselves, it is imperative to explain giftedness as it pertains to each student. This explanation enables gifted students to experience empowerment and develop self-advocacy, just as Weiner and Murawski intended.

**Discussion of Results**

This case study examined the experience of gifted student participants and the role of giftedness and gifted culture in the development of students’ sense of self. This study also aimed to discover what ways direct instruction about executive function contributed to gifted students’ perceptions of emotional well-being and academic readiness regarding their transition to high school. Following the analysis of the data, four core themes emerged: (1) misunderstanding of gifted culture; (2) community is an integral part of the gifted experience; (3) the education
system is not built for those who are gifted; and (4) there is a need for executive function education before the high school transition.

*Misunderstanding of Gifted Culture*

One of the tensions in gifted education is that there is no universal definition or understanding of giftedness. In the conceptual framework, I note that each theory about giftedness, or those who are gifted, is broken down into different facets. I argue that when we are looking at and researching giftedness and gifted students, researchers should look at the whole person, all facets included, to provide a more complete picture and a more accurate account within the research. The study sought to amplify the lived experiences of gifted students, something that was overlooked by previous researchers. By including students’ voices in this case study, I hope that the body of literature will begin to include more first-hand accounts of students who are immersed in gifted culture themselves.

The study's findings indicate a requirement for both adults in the lives of gifted students and researchers to gain a deeper understanding of gifted student culture. Additionally, there is a need for gifted students to have non-judgmental opportunities to explore and learn about the different aspects of giftedness to enhance their self-awareness. I argue that the concept of demystification (Weiner & Murawski, 2005) should not solely be reserved for students with learning disabilities, rather, it should apply and become a common practice for all students with learning differences, which includes gifted students. When students have adults who acknowledge and celebrate their uniqueness both intellectually and socially-emotionally, and they are being taught about how giftedness impacts their sense of self intending to create an understanding of their own identity, it can only positively impact their well-being for the better.
Community is Essential

Not only is it important for the people in the lives of gifted students to understand them, but it is equally important that gifted students have opportunities to learn alongside their gifted peers. The community that is fostered in homogenous groups of gifted students can be some of the only times that gifted students feel comfortable being their ‘true’ selves. As noted in Chapter 2, gifted students, especially gifted adolescents, can be hyper-aware of the sense of differentness, causing them to mask, and in some circumstances, underperform, to fit in with the social norms of their unidentified peers. Both during the study and in the student reflections at the end of the study, nearly all students expressed a sense of feeling understood and validated in the focus groups and during the webinars. When students perceive that they are not alone in their giftedness and can “take off the mask,” this can only benefit their well-being.

The System Is Not Built for The Gifted

Though many have sought to dismantle the traditional systems of education, the fact remains that the system of education was built on the premise that teachers are the bestowers of knowledge. Predominantly, educators in the United States still use Bloom’s Taxonomy, which focuses on six categories: knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom, 1956). However, rarely do teachers have time to infuse the latter half of these skills into every day (Du, 2011). If educators are to meet gifted students where they are and guide them on their own unique journey through acquiring, applying, analyzing, and synthesizing knowledge, the system, along with its tenets, requires a major shift to being more student-centered, focusing on students' agency and ownership. When students are given agency and ownership over their own learning and a teacher to guide them through their journey, it can only benefit their well-being.
Need for Executive Function Education

If stakeholders in the field of education are dedicated to dismantling the traditional system of education in favor of one that is student-centered, this final point would likely be moot. However, a complete shift in this direction is a lofty goal that requires all stakeholders in education to be supportive of the transformation. That said, the next best thing would be to provide explicit instruction about executive function to gifted students before they transition to high school. The data gained from the student-facing Executive Skills Questionnaire at the beginning of the study supported the notion that gifted students were not confident in their transference of executive function skills daily. After the study and the three webinars that students attended to learn about executive function, how useful these skills are in real life, and how they could test the effectiveness of the strategies they chose to improve these skills in authentic scenarios, students said that their overall perceptions of emotional well-being and academic readiness in preparation for the transition to high school had changed for the better. I hypothesize that if students were taught about these skills as they pertained to their level of development throughout their academic tenure, their well-being would benefit, especially considering that recent neuropsychological data indicates a correlation between adverse mental health and well-being and executive dysfunction (Lin et al., 2022).

Limitations of the Study

As is the case with all research studies, this study contained a few limitations. Those limitations included common issues found throughout all intrinsic qualitative case study models based on Yin’s methodology (2014). Specifically, these included limitations because of a lack of response in the initial recruitment procedures and inconsistency in student participant attendance of the intervention via webinar.
Limitations in Methodology

Two significant constraints were present in this case study: the intrinsic limitation in terms of reach and the inability to properly capture the intricacies of power dynamics in action.

**Lack of Reach.** During the recruitment phase of the study, I anticipated a high volume of responses due to the nature of recruiting via social media platforms. Due to posting restrictions, many of the organizations and groups I contacted to promote my study, the recruitment flyer did not have the maximum reach I initially thought was possible. Because of this, I received only 122 responses on my initial interest survey. Of those interested, 63% did not have children who were a part of the specific demographic of students I was looking to recruit for this study. Similarly, though many of the respondents did have children of the age needed for this study, many did not attend a public or public charter school in Pennsylvania. From this data, I inferred that many families of gifted students choose to homeschool their children or send them to private schools.

**Positions of Power.** Researchers have stressed the importance of recognizing and examining power relations in qualitative research (Kessi et al., 2019). It is possible that the use of focus groups, surveys, interventions, and student reflections may have produced misleading data as participants might have adjusted their responses during interviews and behavior during focus groups and webinars to provide what participants perceived I wanted to see and hear. This notion is a reasonable concern, as the power dynamics between teacher and student could have influenced their responses, behaviors, and products observed throughout the study. To counteract this concern, I consistently assured the participants that their participation in this study did not influence anything regarding their grades, recommendations, relationships with teachers, or any other services they may receive.
Limitations in Analysis

Initially, I had planned for this study to employ the strategies of mixed methodology, with a focus on the surveys yielding quantitative data, and the case study yielding qualitative data. As a result of the lack of reach in my recruitment phase, I was unable to gather enough survey participants who met the demographic requirements, and hence, I pivoted to using the survey data qualitatively as narrative data to add to the story of the participants' lived experiences. My study transformed into a solely qualitative one, using a case study design.

Limitations in Generalizability

Like most case studies, this study would be difficult to replicate, particularly because the study sought to uncover the specific lived experiences of these specific participants, in the specific state of Pennsylvania. Conducting similar case studies in other locations would be possible, but it may yield different data, as no one person's lived experience is the same as another's. Lastly, the subjectivity of case study research provides general limitations on its applicability beyond the specific case studied in this research. However, when the results are considered alongside other studies of gifted students’ transitions to high school, they may provide context for better understanding the experiences of gifted children at this pivotal point in their education.

Implications for Future Education Research

The findings of this study suggest the need for further research that examines: (a) the intersections of demystifying giftedness and the impact on gifted students’ mental health; and (b) the implementation of executive function education in K-8 education and its impact on gifted students’ executive function capabilities prior to their transition to high school. Similarly, I
recommend advocating for change in gifted education regarding middle school gifted students and the preparation for their transition to high school.

**Implications for Educational Practice**

Historically, gifted education has been given minimal importance in the United States when considering the issues surrounding it. This study aimed to illuminate the inequities within this niche field of education, and while gifted education impacts a small percentage of our nation’s students, the fact that it impacts even one student is enough of a reason to advocate for change. There are three pillars of advocacy within gifted education that the findings of this study support: (1) Funding and Accountability; (2) Teacher Preparation; (3) Executive Function

**Curriculum and Standards**

**Funding & Accountability**

VanTassel-Baska (2018) noted that historically, there has been inconsistency when it comes to federal support for gifted education funding. The Javits experiment found that gifted children, especially those from socioeconomically disadvantaged families, benefited most from specialized instruction (Adams & Chandler, 2014). Many of the student participants in this study shared that they had been encouraged to drop their GIEP tied to receiving gifted services upon transitioning to high school under the guise that their needs would be met because of the access to higher-level classes afforded to all students enrolled. There are several reasons why this recommendation from the administrators could be interpreted as being one of bad faith and could prove harmful to gifted students. Most gifted students have distinct academic, social, and emotional requirements that cannot be adequately met by merely placing them in advanced courses or AP classes. A Gifted Individualized Education Plan (GIEP) for gifted adolescents plays an important role in ensuring that they receive the necessary assistance and resources to
fully realize their abilities. GIEPs offer a structured approach to recognizing and tackling the distinct abilities and limitations of intellectually advanced individuals. Although advanced courses may present intellectual challenges to exceptionally talented students, they may not specifically cater to their unique requirements or areas of fascination. A GIEP facilitates the establishment of specific objectives and customized teaching methods to guarantee that talented kids are consistently presented with challenging and stimulating learning opportunities.

GIEPs also cater to the social and emotional requirements of talented kids, an aspect that is sometimes disregarded in a conventional high school environment. Gifted students may encounter challenges such as perfectionism, anxiety, or a sense of being alone, and a GIEP can offer techniques for managing these difficulties, cultivating a nurturing educational setting.

Finally, GIEPs can also assist in advocating for appropriate adjustments or changes to support the success of gifted students in the high school environment. These possibilities may encompass options for expediting progress, self-directed learning, guidance from a mentor, or participation in supplementary programs beyond the regular school syllabus.

Based on the conceptual framework of this study, it is important to note that intellectual capacity is just one aspect of giftedness that should be considered when deciding if gifted services are necessary. This exchange between school administrators and families of gifted students transitioning to high school highlights either the insufficient funding for specialized high school teachers who are trained to support the well-being of gifted students or a lack of understanding about giftedness among the administrators who are making these recommendations to exit gifted services altogether.
**Teacher Preparation**

Throughout this study, gifted students consistently expressed that they felt their teachers misunderstood them. Researchers have cited teacher deficit views as one cause for the underrepresentation of gifted pupils nationwide (Mun et al., 2020). According to Colangelo et al. (2004), intellectually gifted students require teachers who understand their learning styles and social-emotional needs. The Higher Education Opportunity Act of 2008 required all teacher candidates to receive gifted education training (Peters & Jolly, 2018), but 58% of in-service general education teachers report having little to no gifted education training. Lack of training perpetuates classroom instructor biases by propagating common myths and stereotypes about gifted students—ideas that all gifted students are overachievers and will be just fine without support (Allen, 2017). Even basic training on gifted learning practices can benefit the entire student population in a general education classroom (Hertzog, 2005). Before and during gifted students’ transition to high school is a setting where education about the gifted student and gifted culture could begin, however, it would yield even more promising results if this knowledge was embedded as early as elementary school.

The findings of this study indicate that gifted students reported they have little incentive to hone executive functions in the early years of their academic tenure. Seemingly, this is a result of administrators’ and teachers’ misunderstanding of the type of learning that gifted students require, and as such, nearly all the participants in this study reported feelings of being underwhelmed, bored, and unmotivated in their academics during their elementary and middle school years. The findings of this study also indicated that students may be open to receiving interventions about executive function. In this study, many participants reported even enjoying learning about how their brains worked and executives functioned, as well as strategies to hone
and transfer these skills. Of course, three 30-minute webinars were not enough to truly determine the impact that gaining an understanding of executive functioning would have on gifted students’ mental health and well-being, nor the correlation to academic achievement; nonetheless, the data gathered from students and their parents did indicate that there is a need for this instruction and that students should be involved in the creation and delivery of the content.

Summary

This study sought to amplify student voices through an investigation of their educational experiences as gifted students, as well as consider the implications that explicit teaching and learning about executive function would have on their perceptions of emotional well-being and academic readiness regarding their transition to high school. Throughout the study, student participants illuminated the realities of feeling misunderstood while finding solace in the gifted community, navigating copious amounts of busy work while yearning for work that matters, and searching for what is unknown while being perceived as all-knowing. Despite their often-invisible struggle, gifted students deserve to be understood; they deserve adults in their lives who will help ignite passions for work that matters; they deserve champions unafraid to advocate for meaningful, lasting change.
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EXECUTIVE [DYS]FUNCTION OF GIFTED STUDENTS IN PA

Erika Lucas has spent the majority of her 12-year career focusing on the unique, and often misunderstood, culture of gifted learners.

Now, she wants to hear from the unique perspectives of gifted students and their families in her study:

APPLYING EXECUTIVE FUNCTION AS SELF-CARE: A MIXED-METHODS STUDY OF GIFTED MIDDLE SCHOOL STUDENTS

Click the link in the caption to RSVP to this Webinar!

ENROLL NOW! @ BIT.LY/GIFTEDINPA

Erika N. Lucas, M. Ed
Teacher of the Gifted
(Dr.ctoral Student at West Chester University)

*This study has been approved by the West Chester University Institutional Review Board, protocol IRB-FY2023-304.
Appendix B

Hello!
My name is Erika Lucas, and I am a doctoral student at West Chester University and have been a middle school gifted teacher for half of my 12-year career as an educator.

This interest form is in regard to a caregiver webinar titled: "Executive Function as Self-Care: Gifted Middle School Students" which will occur at 8:00 AM and 2:30 PM on:
Sunday, November 12
Sunday, November 19
Sunday November 26
Sunday December 3
If you are interested, please fill out the fields below. You will receive a confirmation email, as well as a reminder email with a link to the webinar of your choosing one day before the webinar.

Thank you for your interest!
Questions? Reach out to EL678660@wcupa.edu

Your Name (Last, First)
[

Email Address:
[

Are you the caregiver (parent, primary family member) of a middle school gifted student?
[ ] Yes
[ ] No

Does this student attend a public or public charter school in Pennsylvania?
[ ] Yes
[ ] No

Which webinar are you interested in attending?
[ ] Sunday, November 12, 2023 @ 8:00 AM
[ ] Sunday, November 12, 2023 @ 2:30 PM
[ ] Sunday, November 19, 2023 @ 8:00 AM
[ ] Sunday, November 19, 2023 @ 2:30 PM
[ ] Sunday, November 26, 2023 @ 8:00 AM
[ ] Sunday, November 26, 2023 @ 2:30 PM
[ ] Sunday, December 3, 2023 @ 8:00 AM
[ ] Sunday, December 3, 2023 @ 2:30 PM
[ ] I am interested, but cannot attend any of the options above.

Would you be interested in participating in an educational study aiming to make a positive impact on gifted education in PA?
[ ] Yes [ ] No
Appendix C

Jul 17, 2023 8:37:38 AM EDT

To: Erika Lucas
Col of Education & Social Work, Literacy

Re: Expedited Review - Initial - IRB-FY2023-304 Applying Executive Function as Self-Care: A Mixed-Methods Study of Gifted Middle School Students

Dear Erika Lucas:

Thank you for your submitted application to the West Chester University Institutional Review Board. Since it was deemed expedited, it was required that two reviewers evaluated the submission. We have had the opportunity to review your application and have rendered the decision below for Applying Executive Function as Self-Care: A Mixed-Methods Study of Gifted Middle School Students.

Decision: Approved

Selected Category: 6. Collection of data from voice, video, digital, or image recordings made for research purposes.

Sincerely,
West Chester University Institutional Review Board

IOIRG#: IOIRG0004242
IRB#: IRB00050330
FWA#: FWA00014155
Appendix D

**Investigator(s):** Erika Lucas; Heather Schugar

**Project Overview:** Participation in this research project is voluntary and is being done by Erika Lucas as part of her Doctoral Dissertation to determine whether explicit instruction about executive functions for gifted students and their families helps them feel more secure, confident, independent, and prepared in their transition to the secondary level (high school).

If **you** would like to participate, West Chester University requires you to agree and sign this consent form. *This consent form is solely requesting your participation as the caregiver of a gifted student. There is a second consent form for you to consent to your child to be a part of this research study that will be linked upon submission of this form.*

You may ask Erika Lucas [EL678660@wcupa.edu](mailto:EL678660@wcupa.edu) any questions to help you understand this study. If you don’t want to be a part of this study, it won’t affect any care you or your child may receive or any of your studies from West Chester University. If you choose to be a part of this study, you have the right to change your mind and stop being a part of the study at any time.

*Please Note: Caregivers and their children (student[s]) may opt to participate in and take advantage of the webinars offered without consenting to participate in the study. Webinars and focus groups will be recorded.*

**Caregiver** participation will take about 1.5 hours to:
- take the survey,
- attend an informational parent webinar, and, if the participant chooses,
- sign a consent form for their child to attend the virtual webinars.

There is a minimal risk to caregivers who attend the virtual webinars for 30-45+ minutes, as it may encroach on their personal time. To you, as the caregiver participant, this research aims to provide a sense of comfort, confidence, independence, and preparation to you and your gifted child(ren) entering higher-level classes at the high school level.

**What is the purpose of this study?**
To determine whether explicit instruction about executive functions for gifted students and their families helps them feel more secure, confident, independent, and prepared to transition to the secondary level.

As stated above, if you (the caregiver) consent to participation, it will take about 1.5 hours to:
- take the survey,
- attend an informational parent seminar, and, if you choose,
- sign a consent form for your child to attend the focus groups and webinars.

**Are there any experimental medical treatments?**
No.
Is there any risk to me?
Possible risks or sources of discomfort include: Caregivers will be asked to reflect on their child’s ability to utilize executive functioning skills throughout everyday life, with a focus on school life. If you experience any negative feelings or emotions during the study and wish to speak with someone, you may speak with Dr. Heather Schugar/West Chester University. If you experience discomfort, you may withdraw at any time.

Is there any benefit to me?
There are no direct benefits to caregivers participating in the study. However, the strategies provided regarding improving executive functioning may help inform caregivers’ level of comfort, confidence, independence, and preparedness as their child transitions to the secondary level (high school).

How will you protect my privacy?
The caregiver webinar will be recorded via Zoom. Your records will be private. Only Erika Lucas, Heather Schugar, and the IRB will have access to your name and responses. Your name will not be used in any reports. Records will be stored in a password-protected file/computer. The researcher will protect the county/location and participants by deidentifying all data and providing pseudonyms for participants.

*If participants are 18 or older and consent to participate, they will be included in the study. For participants under 18, parent/guardian consent and student assent will be required for participation. This consent form is solely requesting your participation as the caregiver of a gifted student. There is a second consent form for you to consent to your child to be a part of this research study that will be linked upon submission of this form.

Records will be destroyed:
Three Years After Study Completion

Do I get paid to take part in this study?
No.

Who do I contact in case of research-related injury?
For any questions about this study, contact:
Primary Investigator: [redacted]
Faculty Sponsor: [redacted]

What will you do with my Identifiable Information?
Your information will not be used or distributed for future research studies. For any questions about your rights in this research study, contact the ORSP at 610-436-3557.

Agreement/Consent
*Please read both parts below, as they correlate to portions of the study you are choosing to participate in as a caregiver (should you grant consent):
Audio/Visual Recording Consent (Caregiver):
This study involves the audio or video recording of your webinar with the researcher via Zoom. Neither your name nor any other identifying information will be associated with the video or audio recording or the transcript. Only the research team will be able to listen to (view) the recordings.

The video file (.mp4) will be transcribed by the researcher and erased once the transcriptions are checked for accuracy. ONLY transcripts of your interview may be reproduced in whole or in part for use in presentations or written products that result from this study. Neither your name nor any other identifying information (such as your voice or picture) will be used in presentations or in written products resulting from the study.

By signing this form, I am allowing the researcher to record (audio/visual) me as part of this research. I also understand that this consent for recording is effective until the following date: May 18, 2027. On or before that date, the recording (audio/visual file) will be destroyed.

Participant's Signature: _________________________________ Date:_______________

Audio/Visual Recording Consent (Caregiver/Others):
This study involves the audio or video recording of your webinar with the researcher via Zoom. By signing this form, I also understand that I am not permitted to record the webinar (be it audibly or visually) for use of any kind. The identities and responses from others also in attendance at the webinars are confidential and should NOT be discussed outside of these settings.

Participant's Signature: _________________________________ Date:_______________

Final Consent (Caregiver Participation):
I, _________________________________ (your caregiver's name), have read this form, and I understand the statements in this form. I know that if I am uncomfortable with this study, I can stop at any time. I acknowledge that it is impossible to know all possible risks in a study and believe reasonable safety measures have been taken to decrease any risk.

[ ] Yes, I agree to participate.
[ ] No, I do not agree to participate.
Appendix E

Investigator(s): Erika Lucas; Heather Schugar

Project Overview: Participation in this research project is voluntary and is being done by Erika Lucas as part of her Doctoral Dissertation to determine whether explicit instruction about executive functions for gifted students and their families helps them feel more secure, confident, independent, and prepared in their transition to the secondary level (high school).

If you would like your child to participate, West Chester University requires you to agree and sign this consent form. This consent form is solely requesting your consent for your child’s participation in the study. The prior form was a consent form for you to consent to yourself (the caregiver) to be a part of this research study.

You may ask Erika Lucas (EL678660@wcupa.edu) any questions to help you understand this study. If you don’t want to be a part of this study, it won’t affect any care you or your child may receive or your studies from West Chester University. If you choose to be a part of this study, you have the right to change your mind and stop being a part of the study at any time.

*Please Note: Caregivers and their children (student[s]) may opt to participate in and take advantage of the webinars offered without consenting to participate in the study. Webinars and focus groups will be recorded.*

Student participation will take about 4 hours to:
- sign the assent form,
- participate in a focus group,
- attend three (30-minute) virtual webinars, and
- reflect on the process through a reflection form.

There is a minimal risk to students who attend the virtual webinars for 90+ minutes, as it may encroach on their personal time. This may prevent students from attending after-school activities, and/or completing their homework when they would generally do so. The benefit is that students will transition to the secondary level (high school) with a toolkit of strategies and tools to assist in their success in higher-level classes, and beyond. This research aims to provide a sense of comfort, confidence, independence, and preparation to caregivers and their gifted child(ren) entering higher-level classes at the high school level.

What is the purpose of this study?
To determine whether explicit instruction about executive functions for gifted students and their families helps them feel more secure, confident, independent, and prepared to transition to the secondary level.

As stated above, if you (the caregiver) consent to your child being a part of this study, they will be asked to do the following, which will take approximately 4 hours:
- sign the assent form,
- participate in a (45-minute) focus group,
- attend three (30-45-minute) student webinars, and,
- reflect on the process through a reflection form.

**Are there any experimental medical treatments?**
No.

**Is there any risk to my child?**
Possible risks or sources of discomfort include: Student participants will be asked to reflect on their experiences as a gifted student, as well as any feelings or emotions they have that directly relate to the transition to the secondary level (high school). If your child experiences any negative feelings or emotions during the study and wishes to speak with someone, you may speak with Dr. Heather Schugar/West Chester University. If your child experiences discomfort, they can withdraw at any time.

**Is there any benefit to my child?**
There are no direct benefits to students participating in the study. However, the strategies provided regarding improving executive functioning may help inform students’ level of comfort, confidence, independence, and preparedness as they transition to the secondary level (high school).

**How will you protect my child’s privacy?**
The focus groups and webinars will be recorded via Zoom. Your child’s records will be private. Only Erika Lucas, Heather Schugar, and the IRB will have access to your name and responses. Your child’s name will not be used in any reports. Records will be stored in a password-protected file/computer.
The researcher will protect the county/location and participants by deidentifying all data and providing pseudonyms for participants.

*If participants are 18 or older and consent to participate, they will be included in the study. For participants under 18, parent/guardian consent and student assent will be required for participation.

*Please Note: Caregivers and their children (student[s]) may opt to participate in and take advantage of the webinars offered, without consenting to participate in the study. This consent form is solely requesting your consent for your child’s participation in the study. The prior form was a consent form for you to consent to yourself (the caregiver) to be a part of this research study.

**Records will be destroyed:**
Three Years After Study Completion

**Does my child get paid to participate in this study?**
No.
Who do I contact in case of research-related injury?
For any questions about this study, contact: Primary Investigator: Erika Lucas at [redacted] or [email redacted] Faculty Sponsor: Heather Schugar at [redacted] or [email redacted]

What will you do with my child’s identifiable information?
Your child’s information will not be used or distributed for future research studies. For any questions about your child’s rights in this research study, contact the ORSP at 610-436-3557.

Agreement/Consent
*Please read both parts below, as they correlate to portions of the study your child will participate in (should you grant consent and your child grant assent).

Audio/Visual Recording Consent (Student):
This study involves the audio or video recording of your child’s focus group and webinar(s) with the researcher via Zoom. Neither your child’s name nor any other identifying information will be associated with the video or audio recording or the transcript. Only the research team will be able to listen to (view) the recordings.

The video file (.mp4) will be transcribed by the researcher and erased once the transcriptions are checked for accuracy. ONLY transcripts of your child’s focus group/webinar(s) may be reproduced in whole or in part for use in presentations or written products that result from this study. Neither your child’s name nor any other identifying information (such as their voice or picture) will be used in presentations or in written products resulting from the study.

By signing this form, I am allowing the researcher to record (audio/visual) my child as part of this research. I also understand that this consent for recording is effective until the following date: May 18, 2027. On or before that date, the recording (audio/visual file) will be destroyed.

Caregiver’s Signature: ________________________________________ Date:___________

Audio/Visual Recording Consent (Student/Others):
This study involves the audio or video recording of your child’s focus group and webinar with the researcher via Zoom. By signing this form, I also understand that my child is not permitted to record the webinar (be it audibly or visually) for use of any kind. The identities and responses of others also in attendance at the focus group and/or webinars are confidential and should NOT be discussed outside of these settings.

Caregiver's Signature: ________________________________ Date:_____________
Final Consent (Student Participation):

I, _________________________________ (your [caregiver's] name), have read this form, and I understand the statements in this form. I know that if I am uncomfortable with my child participating in this study, they can stop at any time. I know that it is impossible to know all possible risks in a study and reasonable safety measures have been taken to decrease any risk.

[ ] Yes, I agree for my child to participate.
[ ] No, I do not agree for my child to participate.
Appendix F

Agreement/Assent (Student Participation):

I. _________________________________ (your [student’s] name), understand that my caregiver(s) have given their permission for me to participate in a study concerning Gifted Students and Executive Function under the direction of the researcher, Erika Lucas. I understand that participation will include completing a survey and reflection form, as well as attending a focus group and 2-3 webinars. I also understand that I am not permitted to record the webinar or the focus group (be it audibly or visually) for use of any kind. My participation in this project is voluntary, and I have been told that I may stop participating in this study at any time. If I choose not to participate, it will not affect my grades in any way.

[  ] Yes, I agree to participate.
[  ] No, I do not agree to participate.
Appendix G

Executive Functioning and the Gifted Middle School Student

A Bit About The Researcher
- 12-Year Public School Teacher
- Experience K-12, Elem, MS, & HS
- 1:2 Career in Gifted Ed.
- Doctoral Candidate, WCU
- Gifted Student

Why Executive Functioning & Gifted Students?
- Organic Conversations
- Authentic Experiences

What are Executive Functions?
- Inhibitory Control
- Working Memory
- Flexible Thinking

Inhibitory Control
The ability to control our automatic urges (attention, behavior, thoughts, and emotions) by pausing, & then using attention and reasoning to respond appropriately.
You notice that your gifted child is having trouble completing their classwork in class, resulting in them having to finish the work for homework (which takes forever). You email the teacher, who responds by saying that your child is often found reading a book or browsing YouTube on their school-issued laptop, instead of working on their classwork, and that they benefit from frequent prompts to get back on task.

You're sitting across from your child at the kitchen table while they work on their Math homework. You notice they are not showing their work (something their Math teacher mentioned they had room for improvement on during parent-teacher conferences). When you ask them about it, they say, “Every time I show my work, I get the wrong answer! Just let me do it my way.”

Sound Familiar?

You're at parent-teacher conferences, and toward the end of the meeting, you ask what your child could improve on. The teacher says that during class discussions, your child has a tough time understanding different perspectives, and seems rigid in their opinions. When other classmates appropriately challenge their views, your child seems to shut down or freeze, and tune out of the discussion altogether.

Sound Familiar?

The thinking skill that focuses on memory-in-action.

The ability to remember and use relevant information while in the middle of an activity.

Sound Familiar?

The ability to think about something in a new or different way, ability to see the bigger picture.

Sound Familiar?

5-6 YEARS - Develops ability to search memory locations, remember when something was handed, then talk about it when prompted. Develops some skills in the game of Conversation by keeping a story going under their eyes.

ADULT - Can remember multiple tasks, rules, and strategies that may vary by situation.

10-12 YEARS - Successfully adapts to changing roles, even along multiple dimensions (ability to attend or stay focused, not making mistakes, etc.).

ADULT - Able to reason abstractly and plan in response to changing circumstances.
Suicide
is the 2nd leading cause of death for individuals 10-24 years of age (CDC, 2018).
*Gifted students are typically successful their first attempt (Cross & Anderson, 2016).
Appendix H

Demographics - 1/3
What is your role in relation to the child you are reporting on?
- [ ] Mother
- [ ] Father
- [ ] Caregiver
- [ ] Other

Demographics - 2/3
Do you plan on having your child attend a public or public charter school in Pennsylvania next year for 9th grade?
- [ ] Yes
- [ ] No
- [ ] Unsure at this time

*Please read the information provided below outlining language in Pennsylvania’s Chapter 16 which is necessary to answer the demographic question following this information box.

Pennsylvania Chapter 16 defines a gifted student as:

“A person who has an IQ of 130 or higher or when multiple criteria as set forth in this chapter and in Department Guidelines indicate gifted ability. Determination of gifted ability will not be based on IQ score alone. Deficits in memory or processing speed, as indicated by testing, cannot be the sole basis upon which a student is determined to be ineligible for gifted special education. A person with an IQ score lower than 130 may be admitted to gifted programs when other educational criteria in the profile of the person strongly indicate gifted ability. Determination of mental giftedness must include an assessment by a certified school psychologist.

(e) Multiple criteria indicating gifted ability include:

(1) A year or more above grade achievement level for the normal age group in one or more subjects as measured by Nationally normed and validated achievement tests able to accurately reflect gifted performance. Subject results shall yield academic instruction levels in all academic subject areas.

(2) An observed or measured rate of acquisition/retention of new academic content or skills that reflect gifted ability.

(3) Demonstrated achievement, performance or expertise in one or more academic areas as evidenced by excellence of products, portfolio or research, as well as criterion-referenced team judgment.
(4) Early and measured use of high-level thinking skills, academic creativity, leadership skills, intense academic interest areas, communications skills, foreign language aptitude or technology expertise.

(5) Documented, observed, validated or assessed evidence that intervening factors such as English as a second language, disabilities defined in 34 CFR 300.8 (relating to child with a disability), gender or race bias, or socio/cultural deprivation are masking gifted abilities.”

Demographics - 3/3
Check all that apply:
[ ] My child had been identified by a public school district or public charter school as being gifted
[ ] My child receives enrichment per their GIEP
[ ] My child receives acceleration per their GIEP
[ ] My child has not demonstrated a need outside of their regular education curriculum
[ ] Other [  ]

Executive Functioning - 1/2
Rate each item below based on how well it describes your child, using this rating scale to choose the appropriate score.

<table>
<thead>
<tr>
<th>Statement:</th>
<th>1 Strongly Disagree</th>
<th>2 Disagree</th>
<th>3 Neutral</th>
<th>4 Agree</th>
<th>5 Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My child acts on impulse.</td>
<td></td>
<td></td>
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<tr>
<td>My child gets in trouble for talking too much in class.</td>
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<tr>
<td>My child says things without thinking.</td>
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<tr>
<td>My child says, “I’ll do it later” and then forgets about it.</td>
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<tr>
<td>My child forgets homework assignments or forgets to bring home needed materials.</td>
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<tr>
<td>My child loses or misplaces belongings such as coats, gloves, sports equipment, etc.</td>
<td></td>
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<tr>
<td>My child gets annoyed when homework is too hard or confusing or takes too long to finish.</td>
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<tr>
<td>My child has a short fuse – is easily frustrated.</td>
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<tr>
<td>Statement</td>
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<td></td>
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<tr>
<td>My child gets upset when things don’t go as planned.</td>
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My child often doesn't finish homework at night and may rush to get it done in school before class.

My child needs a lot of time to get ready for things (e.g., appointments, school, changing classes).

My child can't seem to save up money for a desired object – problems delaying gratification.

My child doesn't see the point of earning good grades to achieve a long-term goal.

My child prefers to live in the present.

My child doesn't have very effective study strategies.

My child tends not to check their work for mistakes even when the stakes are high.

My child doesn't evaluate their performance and change tactics to increase success.

**Executive Functioning - 2/3**

With your reporting above in mind, rate your emotions about your child choosing to take higher-level classes at the high school for the following categories.

<table>
<thead>
<tr>
<th>Feeling/Emotion:</th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious</td>
<td></td>
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<tr>
<td>Excited</td>
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</table>
**Executive Functioning - 3/3**

With your reporting above in mind, rate your perception of your child's emotions about choosing to take higher-level classes at the high school for the following categories.

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[paragraph form] If you would like to add more context, please do so in the text box below:
Appendix I

Demographics - 1/2
What is your gender?
[ ] Female
[ ] Male
[ ] Non-Binary
[ ] Transgender
[ ] Prefer Not to Say

Demographics - 2/2
Do you plan on attending a public high school in PA next year for 9th grade?
[ ] Yes
[ ] No
[ ] Unsure at this time

Executive Functioning - 1/2
Rate each item below based on how well it describes you, using this rating scale to choose the appropriate score.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1 Strongly Disagree</th>
<th>2 Disagree</th>
<th>3 Neutral</th>
<th>4 Agree</th>
<th>5 Strongly Agree</th>
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</thead>
<tbody>
<tr>
<td>I act on impulse.</td>
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<td>I get in trouble for talking too much in class.</td>
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<td>I say things without thinking.</td>
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<td>I say, “I’ll do it later” and then forget about it.</td>
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<td>I forget homework assignments or forget to bring home needed materials.</td>
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<td>I lose or misplace belongings such as coats, gloves, sports equipment, etc.</td>
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<td>I get annoyed when homework is too hard or confusing or takes too long to finish.</td>
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<td>I have a short fuse – I am easily frustrated.</td>
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**Executive Functioning - 2/2**

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Appendix J

1) What does it mean to you to be identified as a gifted student?

2) What is it like being a gifted student in middle school? What has your personal experience been?

3) How do you see this experience being different once you get to high school?

4) Throughout your experience in school, have you used any of the following strategies to be successful?
   a) Take notes?
      i) Was there any specific strategy (Cornell notes, highlighting, etc?) that you found to work well?
   b) Study?
      i) Was there any specific strategy (flashcards, creating online games, etc.) that you found to work well?
   c) Revise work?
      i) Do you find that you’re comfortable with receiving and implementing feedback or criticism?
   d) Budget your time?
      i) Take notes, study, revise work, or budget your time and resources for assignments?

5) In what ways do you think your use of these strategies may need to change at the high school level?

6) Do you plan on taking any AP classes during your freshman year? If so, which one(s)?

7) Are there some skills you know you personally need to develop in order to be successful in higher-level courses? If so, which ones?

8) Do you think it would be helpful to learn these skills before going to 9th grade or sooner?
   a) If yes:
      i) Which skills do you think would be most important to learn?
   b) If no:
      i) Which skills have you learned in your classes up until this point that you believe will help you be successful?
         (1) Can you give examples of using these in your classes thus far?

9) If someone were to teach a 30-minute seminar on each skill, and tools on how to hone these skills, do you think it would be helpful?
   a) If yes:
      i) What would the ideal seminar look like for you?
   b) If no:
      i) What is your plan for honing these skills yourself?
Appendix K

What are Executive Functions?

- Inhibitory Control
- Working Memory
- Flexible Thinking

Enhibitory Control
The ability to control our automatic urges (attention, behavior, thoughts, and emotions) by pausing, & then using attention and reasoning to respond appropriately.

Practical Examples
- Difficulty resisting the temptation to check social media, play video games
- Impulsive spending
- Struggling to stay on topic during conversations
- Difficulty managing emotions
- Procrastination

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Timeline of Development

Inhibitory Control

Prefrontal Cortex

Strategies to Improve Executive Function

1. Mindfulness
2. Metacognition
3. Brain Training

Next Steps:

1. In your own words, what is IQ?
2. What practical IQ skill are you working on this week?
3. Why does having this skill matter to you?
4. What strategy will you use?
5. How will you know you've been successful? How will this success feel?
Appendix L

**Executive Functioning**

AND THE GIFTED MIDDLE SCHOOL STUDENT

**Working Memory**

AND THE GIFTED MIDDLE SCHOOL STUDENT

- Inhibitory Control
- Working Memory
- Flexible Thinking

*What are Executive Functions?*

**Working Memory**

The thinking skill that focuses on memory-in-action:

The ability to remember and use relevant information while in the middle of an activity.

**Practical Examples**

- Difficulty remembering where you put things (homework, soccer cleats, phone, airpods, etc.)
- Doing mental math via a calculator
- Struggling to follow multi-step instructions
- Feeling “stuck” in the middle of problem-solving

**Timeline of Development**

**Working Memory**

5-6 YEARS - Develops ability to select logical locations, remember where something was found, then explore other locations (e.g., game of hide and seek, taking a party under three tents).

ADOLESCENCE - Considers multiple facts, rules, and strategies that may vary by intention.
1. In your own words, what is WM?
2. What practical WM skill are you working on this week?
3. Why does honing this skill matter to you?
4. What strategy will you use?
5. How will this look on a practical label?
6. How will you know you’ve been successful? How will this success feel?

Thank you!
For your attendance and participation!
Appendix M

1. Executive Functioning
2. Flexible Thinking
3. What are Executive Functions?
   - Inhibitory Control
   - Working Memory
   - Flexible Thinking
4. Cognitive Flexibility
   - The ability to think about something in a new or different way: ability to see the bigger picture.
5. Practical Examples
   - Struggling to adapt to a change in plans.
   - Difficulty being open-minded to other perspectives.
   - Having a tough time collaborating in a group.
   - Avoiding constructive criticism becoming defensive when feedback is given.
6. Timeline of Development
   - Cognitive Flexibility
     - 12-18 MONTHS: Successfully adapt to changing rules, e.g., changing teachers, peer-to-peer interactions.
     - 18-36 MONTHS: Successfully adapt to changing rules, e.g., changing teachers, peer-to-peer interactions.
     - ADULT: Able to make adaptive and planful responses to changing circumstances.
Strategies to Improve Executive Function

1. Mindfulness
2. Metacognition
3. Brain Training

Don’t Forget to do the Final Reflection!

Next Steps:

1. In your own words, what is FT?
2. What practical FT skill are you working on this week?
3. Why does honing this skill matter to you?
4. What strategy will you use?
5. How will this look on a practical level?
6. How will you know you’ve been successful? How will this success feel?

Thank you!

For your attendance and participation!
Appendix N

1. Did you learn anything about yourself while attending the webinars?
   1. What are the things (EFs) you do well?
   2. What were your (EF) areas for growth?

2. We talked about strategies X, Y, and Z. Which ones have you used/do you plan on using:
   1. In your current classes?
   2. At the high school level?

3. How did you feel about taking higher-level courses before attending the webinars?
   1. Why?

4. Have your feelings changed about taking higher-level courses after attending the webinars?
   1. If yes:
   2. If no:
      1. Why do you think that is? Is there something you had hoped to learn and didn’t?

5. If you could improve the webinars about XYZ for upcoming students, how would you do that?
   1. If “nothing, it was [great as it was]”:
      1. What were the best things about the webinars?

6. Is there anything else you’d like to share?