

A CONSTRUCTIVIST GROUNDED THEORY EXPLAINING HOW FAMILIES
HOMESCHOOLING LEARNERS WITH SPECIAL EDUCATIONAL NEEDS AND
DISABILITIES MEDIATE LEARNING EXPERIENCES

by

Melissa Delayne Dean

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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Abstract

The purpose of this study was to extend Feuerstein et al.'s (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience to the homeschool context by constructing a grounded theory that explains how families create mediated learning experiences for learners with special educational needs and disabilities in a homeschool context. Feuerstein's theories guided this study and provided the framework to answer the central research question: How do Feuerstein's theories of structural cognitive modifiability and mediated learning experience extend to a homeschool context for learners with special educational needs and disabilities? Purposive sampling methods were used to identify 10 study participants. Three sets of data were collected from each participant: timelines, interviews, and statements of advice. Data collection and analysis occurred simultaneously, and analysis was an iterative process. A model was generated that depicts how Feuerstein et al.'s (2006, 2010, 2015) theories extend to a homeschool setting with children with special educational needs and disabilities.

Keywords: Special educational needs and disabilities, intellectual disability, homeschooling, Down syndrome, autism, mediated learning experience, structural cognitive modifiability, individualized education, constructivist grounded theory

Copyright Page

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Dedication

I dedicate this to my children, who are my greatest gifts and the clearest picture of God's grace in my life. I have treasured every stage of your lives—from when you were my babies to when you became my friends and all the moments in between. For Lydia, you shattered barriers I didn't know I had erected and opened a whole new world to me. Your smile lights up the world and so many of my days. For Timothy José, your life taught me to let go and trust the Lord; I think of you often up there in heaven filled with joy and fully free. For Titus, you always remind me that love and family are most important. You are strong and smart and caring, and I am so grateful to be your mom. For Tess, you defy all expectation and overcome every challenge placed before you, and you inspire me to do the same. I cannot imagine life without you and cannot wait to see your life unfold. And for the Originals...Maya, Marina, Jonah, and Saylor...you endured my inexperience, my misguided (though well-intentioned) efforts, and all of my mistakes and failures, and despite them, you grew up to become the most amazing women and man I know. Your lives are unique and beautiful and full of meaning, and I love you each beyond description. I'm so grateful for every conversation and experience I get to share with you—whether fun or difficult—and hope that you know how much I value my relationships with each of you. I love you forever and always.

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Table of Contents

Abstract.....	3
Copyright Page.....	4
Dedication.....	5
Acknowledgments.....	6
List of Tables	16
List of Figures.....	17
List of Abbreviations	18
CHAPTER ONE: INTRODUCTION.....	20
Overview.....	20
Background.....	21
Historical Context.....	21
Social Context.....	23
Theoretical Context.....	25
Problem Statement.....	28
Purpose Statement.....	29
Significance of the Study	29
Empirical Significance.....	30
Theoretical Significance	30
Practical Significance.....	31
Research Questions.....	33
Central Research Question.....	33
Sub-Question One.....	33

	11
Sub-Question Two	33
Sub-Question Three	33
Definitions.....	33
Summary.....	34
CHAPTER TWO: LITERATURE REVIEW.....	36
Overview.....	36
Theoretical Framework.....	37
Theory of Structural Cognitive Modifiability.....	37
Theory of Mediated Learning Experience	40
Related Literature.....	42
Prevalence of Special Educational Needs and Disabilities.....	42
Brief Overview of Homeschooling.....	43
Homeschooling Approaches	45
Promise of Homeschooling for Students with Special Educational Needs and Disabilities	46
Promise of Structural Cognitive Modifiability and Mediated Learning Experience for Learners with SEND	49
Essential Parameters of Mediated Interactions	51
Situational Parameters of Mediated Learning Experience.....	53
Attributes of Modifying Environments.....	57
Dynamic Assessment.....	58
Characteristics of Mediators	60
Intersection of Homeschooling and Mediated Learning for Students with SEND	63

	12
Summary	64
CHAPTER THREE: METHODS	67
Overview	67
Research Design	68
Researcher Positionality	70
Interpretive Framework	70
Philosophical Assumptions	71
Researcher's Role	73
Research Questions	75
Central Research Question	75
Sub-Question One	75
Sub-Question Two	75
Sub-Question Three	75
Setting and Participants	75
Setting	76
Participants	76
Procedures	79
Permissions	79
Recruitment Plan	80
Data Collection Plan	81
Timelines	81
Individual Interviews	83
Statements of Advice	88

	13
Data Synthesis.....	90
Trustworthiness.....	92
Credibility.....	93
Transferability.....	94
Dependability.....	95
Confirmability.....	95
Ethical Considerations.....	96
Summary.....	97
CHAPTER FOUR: FINDINGS.....	98
Overview.....	98
Participants.....	98
Jordan.....	98
Grace.....	100
Katherine.....	102
Samantha.....	103
Lenora.....	104
Paula.....	105
Lisa.....	107
Laura.....	108
Julia.....	109
Jennifer.....	111
Results.....	112
Explanation of Model.....	112

	14
Theme Development.....	123
Research Question Responses.....	149
Central Research Question.....	149
Sub-Question One.....	149
Sub-Question Two	150
Sub-Question Three	150
Summary.....	151
CHAPTER FIVE: CONCLUSION.....	153
Overview.....	153
Discussion.....	153
Interpretation of Findings	153
Implications for Policy and Practice	160
Theoretical and Empirical Implications	164
Delimitations and Limitations.....	165
Recommendations for Future Research	166
Conclusion	167
References.....	169
APPENDICES	185
Appendix A: IRB Approval Letter	185
Appendix B: Recruitment Information	187
Appendix C: Grounded Theory Study Participant Screening Survey	190
Appendix D: Participant Acknowledgement Email.....	192
Appendix E: Consent Form	193

Appendix F: Timeline Prompt	196
Appendix G: Individual Interview Questions	198
Appendix H: Participant Statement of Advice Prompt.....	200
Appendix I: Excerpts from Reflexive Journal	201
Appendix J: Model Sketches	210
Appendix K: Contact Log.....	211
Appendix L: Sample Timeline.....	212
Appendix M: Sample Interview Transcript	217
Appendix N: Sample Statement of Advice.....	233
Appendix O: Final Code Book	234
Appendix P: Sample NVivo Subtheme Query.....	246
Appendix Q: Permission Letter for Feuerstein Model of MLE.....	253

List of Tables

Table 1. Participants.....	78
Table 2. Themes and Subthemes for All Data Sources	124

List of Figures

Figure 1. Feuerstein’s Model of Mediated Learning Experience	113
Figure 2. Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities.....	114
Figure 2a. Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities.....	114
Figure 2b. Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities.....	120
Figure 2c. Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities.....	121

List of Abbreviations

Attention-Deficit/Hyperactivity Disorder (ADHD)

Autism Spectrum Disorders (ASD)

Computer Aided Qualitative Data Analysis Software (CAQDAS)

Constructivist Grounded Theory (CGT)

Dynamic Assessment (DA)

Down Syndrome (DS)

Ehlers-Danlos Syndrome (EDS)

Feuerstein's Instrumental Enrichment (FIE)

Free and Appropriate Public Education (FAPE)

General Educational Development (GED)

Grounded Theory (GT)

Home School Legal Defense Association (HSLDA)

Hypoxic Ischemic Encephalopathy (HIE)

Individual Education Program (IEP)

Individuals with Disabilities Education Act (IDEA)

Institutional Review Board (IRB)

Individual Service Plan (ISP)

Individual Family Service Plan (IFSP)

Individual Transition Plan (ITP)

Intellectual Disability (ID)

Intelligence Quotient (IQ)

Least Restrictive Environment (LRE)

Learning Potential Assessment Device (LPAD)

Mediated Learning Experience (MLE)

National Institute for Learning Development (NILD)

Neonatal Intensive Care Unit (NICU)

Oppositional Defiant Disorder (ODD)

Post-Traumatic Stress Disorder (PTSD)

Postural Orthostatic Tachycardia Syndrome (POTS)

Qualitative Data Analysis Software (QDAS)

Student Education Plan (SEP)

Special Educational Needs and Disabilities (SEND)

Specific Learning Disability (SLD)

Structural Cognitive Modifiability (SCM)

Traumatic Brain Injury (TBI)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

For families seeking an ideal educational context in which the individual needs of their learners with special educational needs and disabilities (SEND) can be met, homeschooling has become a valid choice, often made deliberately but sometimes as a last resort (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018). Individualized instruction is not only the centerpiece of school-based special education for children with SEND, but may be the optimal conduit through which learning can occur for these learners with neurodevelopmental disorders (Rytivaara & Vehkakoski, 2015; van Tilborg et al., 2018). Structural cognitive modifiability (SCM) confirmed by neuroplasticity shows that the very framework of an individual's brain can change through mediated learning experiences (MLE) in which a human mediator operating with intentionality mediates meaning for a learner interacting with a stimulus and guides that learner to extend that learning experience beyond the present (Feuerstein et al., 2006, 2010, 2015). A study that extends Feuerstein's theory to the homeschool context as an ideal setting for MLE and family members as mediators for learners with SEND can contribute valuable information to families and educational policymakers seeking optimal individualized educational opportunities for learners with special educational needs and disabilities.

A mediated learning experience is an interaction between a mediator and a student characterized by "intentionality and reciprocity, transcendence, and the mediation of meaning" (Feuerstein et al., 2010, p. 41). This chapter provides the historical, social, and theoretical background of this constructivist grounded theory study examining how families homeschooling learners with special educational needs and disabilities create mediated learning experiences as

defined by Feuerstein et al. (2006, 2010, 2015). It also presents the problem and purpose statements that drive the study. The study's empirical, theoretical, and practical significance are then highlighted, including its importance to educators, parents, researchers, and especially to the students they serve. The research questions that guide the study are identified, and key terms defined to ensure clarity.

Background

The historical views of homeschooling and the choice to homeschool students with special educational needs and disabilities are presented in this section along with a brief history of the research on mediating learning experiences for homeschooled students with SEND. The social context of homeschooling is also established. The section concludes with a discussion of theoretical underpinnings with an emphasis on Reuven Feuerstein's (2006, 2010, 2015) theories of structural cognitive modifiability (SCM) and mediated learning experience (MLE), both of which frame this study.

Historical Context

Although homeschooling has been a part of the United States' history since colonial times, compulsory public school attendance laws eliminated it as an educational option for over half a century (Cook et al., 2013). In the 1960s, desegregation laws, removal of prayer in schools, and publications blaming the public schools for educational failure contributed to a resurgence of the practice, and it has steadily increased since (Cook et al., 2013). Approximately 4.5 million students in the United States are currently homeschooled, and the practice "may be the fastest growing form of education in the United States" (Ray, 2022, paras. 1–2). Parents choose homeschooling for a myriad of reasons, ranging from concerns about the school environment to a belief that they can provide a better educational experience for their child

(Guterman & Neuman, 2017). One factor that motivates some parents to homeschool is their child's disability or special educational needs (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018).

Although the Individuals with Disabilities Education Improvement Act (IDEA, 2004) entitles students with disabilities to a free and appropriate public education (FAPE), resulting in increased funding and improved services, "increased costs and rates of identification have not been followed with clear evidence that students have been better served over time" (Cheng et al., 2016, p. 384). Perception that the public or private school is not meeting the needs of their child is an important factor for parents who decide to homeschool their child with special educational needs and disabilities (Morse & Bell, 2018). Benefits of homeschooling students with disabilities are numerous, including individualized instruction and pacing, personalized setting, parents' familiarity with their child's needs, higher levels of academic engagement, and inclusion without labels that bring negative stigma or lower expectations (Cheng et al., 2016; Cook et al., 2013; Maxwell et al., 2020).

Although examining parental motivation and potential benefits of homeschooling children with disabilities is helpful, virtually no research has captured the process of mediating learning experiences by parents who choose to homeschool their children with SEND. Hurlbutt (2011) conducted a qualitative study of the experiences of 10 parents from nine families who homeschool children with autism spectrum disorders (ASD), and Jolly and Matthews (2018) examined the experiences of mothers homeschooling their gifted children; however, no such study has been conducted with families homeschooling children with SEND, especially not one that seeks specifically to extend Feuerstein et al.'s (2006, 2010, 2015) theories to the homeschool context.

Social Context

The education of students with special educational needs and disabilities in the United States has transformed from the late 1940s when only 12% of children with disabilities were receiving any special education services to the implementation of legislation intended to provide students with SEND physical access to schools, a free and appropriate public education, and individualized instruction in the least restrictive environment (LRE) possible (Bicehouse & Faieta, 2017). Although children and adults with SEND have more rights than ever before, their rights “are continually challenged both in the courts and the political arena” due to problems with noncompliance to FAPE and LRE policies, progress monitoring, and “the availability of a continuum of placement options” (Bicehouse & Faieta, 2017, p. 34). The Race to the Top (The White House, Office of the Press Secretary, 2009) initiative, with its high stakes standards and assessment climate, raised grave concerns for special educators, who feared that this climate would undermine the struggle of students with SEND to succeed within the public-school domain and would take “the ‘special’ out of special education” (Bicehouse & Faieta, 2017, p. 34).

In addition, parents of students with intellectual disability (ID) “indicate that they are not viewed as true partners in the education of their children” (Bennett et al., 2020, p. 152). Although they desire for their children to receive equitable educations, parents of children with ID face challenges with people, placement, and practicalities in their attempts to navigate the school system and advocate for their children (Bennett et al., 2020). Furthermore, students with intellectual disabilities and their families report experiencing “ongoing and chronic forms of harm” that impair their school lives, such as harassment, bullying, physical assault, threats, and humiliation (Robinson, 2018, p. 55). The families in Robinson’s (2018) study found it difficult to

resolve these situations and spoke of “many instances where schools were unresponsive to their requests for help, complaints and repeated attempts to resolve interpersonal harm” (p. 55).

Definitions of “success” in homeschooling vary as widely as the individuals who comprise the homeschool community. Parents note a variety of benchmarks of success, including strong test scores, admission to selective universities, performance in college and universities, avoidance of negative peer-pressure-driven experiences, higher reported life satisfaction after graduation, and various achievement awards (Firmin et al., 2019; Murphy, 2014). Researchers have found that home education influences areas of life far beyond those typically evaluated to determine educational achievement (Murphy, 2014; Neuman & Guterman, 2016b). On average, homeschooled students tend to have higher levels of autonomy satisfaction and competence satisfaction compared to traditionally schooled students, both of which are necessary conditions for intrinsic motivation to lead to successful outcomes (Riley, 2015). In addition, through descriptive analysis in his study of the academic outcomes of homeschooled students who enter a mid-size doctoral institution, Cogan (2010) found that “homeschool students possess higher ACT scores, GPAs and graduation rates when compared to traditionally-educated students” and “earn higher first-year and fourth-year GPAs,” even when controlling for other factors (p. 24). Cogan (2010) concluded that “homeschooled students are prepared for college and may even be considered as high achievers when compared to non-homeschooled students” (p. 24).

Most studies of the outcomes of homeschooling students with SEND have focused on parents’ perception of success. The value of parental perspectives has been widely noted (Firmin et al., 2019; Hurlbutt, 2011; Mann et al., 2018; Murphy, 2014; Rytivaara & Vehkakoski, 2015). However, Murphy (2014) found it puzzling that, in research on the effects of homeschooling, most potential domains of impact-defining intervention from parents’ perspectives are ignored,

“while researchers chase down data on whether homeschool children can answer two or three more questions correctly on standardized tests than their public school peers” (p. 248).

A common theme in homeschool parents’ explanations for “success,” though diversely defined, was the ability to tailor their child’s education to his or her specific needs (Firmin et al., 2019). Despite the lack of studies measuring the “success” of homeschooled students with SEND, this theme aligns with a consistently identified educational need of students with disabilities: individualized instruction. Individualization is regarded as “a fundamental characteristic of effective special education practices—so fundamental, in fact, that it has been considered the defining feature of special education” (Rytivaara & Vehkakosi, 2015, p. 12). Jacob and Musuroi (2013) concluded that “a child with Down syndrome has the potential of making constant and significant progress in all the developmental areas provided that he follows an intensive, daily programme adjusted to his own needs and strengths” (p. 849). In studying gifted learners (another category of exceptionality, though excluded from IDEA), Hurlbutt (2011) found that parents concluded that “home is where their child was served best and that the school could not provide the opportunities for their children that they could” (p. 247). They further noted that “their children were thriving and growing academically and socially because of their homeschooling programming” (Hurlbutt, 2011, p. 248). After examining the handful of studies exploring how homeschool instructors teach students with disabilities and whether their practices lead to desirable student outcomes, Cheng et al. (2016) concluded that homeschool instructional environments are “at least as conducive as environments provided in traditional public schools for improving achievement and maintaining engagement for students with basic learning disabilities or even more significant needs such as attention-deficit disorder” (p. 386).

Theoretical Context

Historically, a fixist view of intelligence and ability dominated educational decision making, one that said intelligence and ability are genetically transferred and unable to be changed (Dweck, 2016; Nisbett, 2009; Sternberg, 2000); however, recent breakthroughs in neuroscientific research and educational theories related to modifiability have shattered the notion of intelligence and ability as unchangeable entities that relegate individuals to live with the lot handed them. John Amos Comenius was one of the first philosopher-educators to hint at an unfixed or growth mindset. He compared the intellect to a mirror or tablet, stating that it is unlikely to find “a mirror so dulled that it will not reflect images of some kind” or a “tablet to have such a rough surface that nothing can be inscribed on it” (Comenius, 1657/1907, p. 86).

Over half a century ago, Lev Vygotsky revolutionized perspectives on the relationship between learning and development by identifying natural forms of intelligence that are structurally changed by cultural tools associated with literacy and education (Feuerstein & Kozulin, 1995). Vygotsky (1935/2011) theorized that “what is indicative of the child’s intellectual development is not only what he can do himself, but probably more so what he can do with the help of others” (Vygotsky, 1935/2011, p. 203). Vygotsky (1935/2011) referred to this space between a learner’s actual development (identified by his or her independent task performance) and the level of possible development (defined by his or her task performance under the guidance or cooperation of others) as the zone of proximal development (ZPD). Vygotsky’s (1935/2011) theory informs much of what is done in special education, as instruction is designed to move students through their ZPD via supports and scaffolding.

Feuerstein and Kozulin (1995) extended understanding beyond the need for social interaction between teacher and student to develop a theory of mediated learning experience that attributes individuals’ differing capacities to change to the unequal amount and type of MLE

they have experienced. Through his theory, Feuerstein et al. (2006, 2010, 2015) considered the context for such mediated learning, identified three essential and nine situational parameters of mediated interactions, and contended that such mediation can structurally modify a person's cognitive abilities. The three essential parameters of mediated learning experience are intentionality on the part of the mediator and reciprocity from the learner, the mediation of meaning by the mediator for the learner, and transcendence facilitated by the mediator who extends the principle being learned beyond the learner's immediate task or experience (Feuerstein et al., 2006, 2010, 2015). Feuerstein's theories of structural cognitive modifiability and mediated learning experience fit in the ecological and cultural model of intelligence shared by Vygotsky, Jerome Bruner, and Urie Bronfenbrenner, all of whom stress the social and cultural origin of cognitive development (Kozulin et al., 2010).

In recent years, the field of neuroscience has exploded with scientific evidence of the brain's plasticity (Doidge, 2007; Tan & Seng, 2008b), lending physical proof to support the contentions of these educational theorists. The resulting "revolution" in brain sciences that has occurred over the past two decades has provided an abundance of knowledge regarding the structure and function of the brain (Falik, 2020). The explosion of neuroscientific understanding and educational theories of cognitive modification and mediation changed the outlook for children once thought to be permanently bound by their genetic or environmentally-produced cognitive disabilities. Through this study, I seek to contribute to the description and understanding of an educational context in which mediated learning can occur for children with special educational needs and disabilities.

Problem Statement

Homeschooling has grown steadily over the past twenty years (Ray, 2022). As Firmin et al. (2019) noted, most research on homeschooling addresses reasons for choosing homeschooling, comparisons of homeschooled and public-schooled students, and legal implications of homeschooling. Research is only just emerging that examines how parents describe their homeschooling experiences (Firmin et al., 2019; Hurlbutt, 2011; Jolly & Matthews, 2018; Neuman & Guterman, 2016b). Although an abundance of research exists indicating that parents cite their children's special educational needs and disabilities as an important factor in their decision to homeschool (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018), more research is needed on how children with SEND are educated in the home environment (Cheng et al., 2016; Cook et al., 2013; Murphy, 2014). Likewise, researchers are only just beginning to capture the value of mediated learning experiences for learners with cognitive disabilities (Brown, 2016, 2018a, 2018b; Kozulin et al., 2010; Lomofsky, 2020; Partanen, 2020). To date, no one has examined the intersection of the three—homeschooling, mediated learning experience, and educating children with special educational needs and disabilities.

Mediated learning experience is “the primary mechanism for the achievement of Structural Cognitive Modifiability, and the process by which efficient modifying of human learning and development occurs” (Feuerstein et al., 2006, p. 55). Homeschooling has been identified as a promising educational context for learners with disabilities (Cheng et al., 2016; Cook et al., 2013; Maxwell et al., 2020). The problem is that the homeschool context has not been examined in relation to its potential to facilitate mediated learning experiences for students with special educational needs and disabilities. Parents considering educational options for

learners with SEND may not understand structural cognitive modifiability or how to optimize mediated learning experiences for their children in a homeschool setting. A constructivist grounded theory study of families homeschooling learners with special educational needs and disabilities can extend Feuerstein et al.'s (2006, 2010, 2015) theories to the homeschool context and enhance the mediation that occurs there.

Purpose Statement

The purpose of this study was to extend Feuerstein et al.'s (2006, 2010, 2015) theories to the homeschool context by constructing a grounded theory that explains how families create mediated learning experiences for learners with special educational needs and disabilities in a homeschool context. The theory constructed includes a conceptual model that visually depicts the process of the phenomena studied. Families homeschooling learners with SEND were generally defined as parents who chose to educate their child with a special educational need or disability in a homeschool environment for at least two years. The theories guiding this study were Feuerstein's (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience as they contextualize the impact of mediated learning experiences on the cognitive functions of learners with etiological barriers.

Significance of the Study

Within the body of research on homeschooling, special educational needs and disabilities, and cognitive modifiability through mediated learning experiences, there are no known studies that examine them in combination. Families of children with SEND have chosen home education for many years because they find that it better meets the needs of their learners (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018). Although there is debate about whether the aim of education is the individual or the collective

good (Brewer & Lubienski, 2017), individualized education is optimal for children with Down syndrome and other disabilities (Rytivaara & Vehkakoski, 2015; van Tilborg et al., 2018). This study examined how families of children with special educational needs and disabilities mediate learning experiences in a homeschool context; it provided a grounded theory that is currently absent from the literature and extended Feuerstein et al.'s (2006, 2010, 2015) theories to the homeschool context. The resulting grounded theory can positively affect learners with special educational needs and disabilities and better equip families to make and carry out informed educational choices.

Empirical Significance

Although mediated learning experiences benefit learners with disabilities (Kozulin et al., 2010; Lebeer, 2008; Lomofsky, 2020; Partanen, 2020) and families are choosing to homeschool their learners with SEND (Cheng et al., 2016; Cook et al., 2013; Maxwell et al., 2020; Morse & Bell, 2018), the two phenomena had not been examined in unison. This study sought to understand how families who homeschool learners with special educational needs and disabilities mediate learning experiences for their children. It yielded a grounded theory that explains the process through which family members and learners engage in mediated interactions within the homeschool context. The study also described perceived benefits of homeschooling as an educational context for learners with SEND. It both outlined what is already happening in the homeschool context for learners with SEND and contributed to efforts to enhance learning in that context.

Theoretical Significance

This study sought to extend Feuerstein's (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience to the highly individualized context of

a homeschool education mediated by family members of a child with special educational needs and disabilities. The mediation required to modify cognition structurally and affect change in learners with etiological barriers is not context-dependent or relegated to professional teachers or mediators; in fact, any environment can become a context for mediated learning and any adult who wants to teach something to a child can serve as a mediator (Feuerstein et al., 2010, 2015; Feuerstein & Lewin-Benham, 2012). Mediated learning experiences serve as a conduit through which learners can understand their world and a means of effecting both internal and external change (Falik, 2020). They facilitate understanding, acquisition of knowledge, mastery of skills, and communication that are essential for 21st century learners (Wong, 2020). For children with SEND, mediated learning has the potential to change cognitive functioning that is less than optimal due to etiological or environmental barriers (Feuerstein et al., 2006, 2010, 2015). The improvement of cognitive function in turn has the potential to positively influence the academic achievement of these children (Brown, 2016, 2018a, 2018b; Kozulin et al., 2010; Lomofsky, 2020). This type of learning experience offers the ultimate individualization of instruction, targeted to the specific needs of each child, a defining feature of effective education for children with SEND (Rytivaara & Vehkakoski, 2015). Homeschooling affords parents the opportunity and environment necessary to deliver a completely individualized educational program to their child, thus enabling them to effect structural cognitive change. Feuerstein et al.'s (2006, 2010, 2015) theories had not been explicitly extended to the context of homeschooling learners with SEND, so this study sought to fill that gap in the literature. It also aimed to contribute to the information and resources available to homeschooling parents seeking to create mediated learning experiences and foster cognitive modifiability for their children with SEND.

Practical Significance

While parents of children with SEND often make an informed and deliberate decision to homeschool (Maxwell et al., 2020), they also describe challenges and a lack of support in their homeschooling endeavors. Many even express “doubts about their effectiveness as instructors” (Cook et al., 2013, p. 99). This study sought to fill the dearth in information available to parents as they weigh educational options for learners with special educational needs and disabilities. The descriptions and processes revealed by this study may empower parents who are considering homeschooling their child with SEND as well as those already engaged in the practice. This study may also be a catalyst for further research into the specific outcomes of homeschooling students with SEND, the types of homeschool curriculum and instruction that foster mediated interactions, and the ways in which mediated learning experiences are created for homeschooled students with each type of need or disability reflected in this study, as well as other disabilities not captured here. The findings of the study may be used to develop educational and support materials for families and professionals involved in the home education of learners with SEND and to inform policy changes that could positively support the home education of these children. The study may also initiate a conversation with homeschool parents about cognitive modifiability and mediated learning and how to foster both in the homeschool context. More than acquiring specific content or skills, 21st century learners need to know *how to learn*—how to think, process, and exercise agency (Wong, 2020). Learners with SEND suffer from deficient cognitive functions that can be improved through mediation (Feuerstein et al., 2015). The pragmatic lessons that emerge from this study may equip homeschooling families to facilitate learning for their children with SEND through mediated learning experiences.

Research Questions

At the heart of research is the research question, which stems from the purpose or reason behind the research (Thomas, 2021). Qualitative researchers have the advantage of being able to follow leads that emerge as they gather data or even late in the analysis stage; however, research problems shape the methods of data collection (Charmaz, 2014). The following questions framed this study:

Central Research Question

How do Feuerstein's theories of structural cognitive modifiability and mediated learning experience extend to a homeschool context for learners with special educational needs and disabilities?

Sub-Question One

What motivates and reinforces family members' decisions to mediate the learning experiences of their children with SEND in the homeschool context?

Sub-Question Two

How do family members exhibit parameters of mediated learning experiences for their children with SEND in the homeschool context?

Sub-Question Three

How do family members foster modifiability in their children with SEND in the homeschool context?

Definitions

The following definitions reflect the meaning of terms used in this study:

1. *Constructivist grounded theory (CGT)*—Constructivist grounded theory is a contemporary version of the original statement of grounded theory that adopts similar

methodological strategies but “shifts the epistemological foundations of the original version and integrates methodological innovations in qualitative inquiry” (Charmaz, 2017a, p. 34). CGT “fosters asking probing questions about the data and scrutinizing the researcher and the research process” and “locates the research process and product in historical, social, and situational conditions” (Charmaz, 2017a, p. 34).

2. *Homeschooling (or home education)* – Homeschooling is a practice whereby parents choose to assume responsibility for educating their children rather than to enroll them in schools (Guterman & Neuman, 2017).
3. *Mediated learning experience (MLE)* – Mediated learning experiences are interactions between a mediator and a learner in which intervention by the mediator serves as a catalyst for changing thinking and causing learning (Feuerstein & Lewin-Benham, 2012).
4. *Structural cognitive modifiability (SCM)* – Structural cognitive modifiability is the concept that intelligence is adaptable and that external and internal forces can change the brain, even in individuals with neurodevelopmental disorders (Feuerstein et al., 2006, 2010, 2015).
5. *Theory*—Theory is the elucidation and explanation of all or part of a process or phenomenon (Timonen et al., 2018). A theory “accounts for what happens, how it ensues, and may aim to account for why it happened” (Charmaz, 2014, p. 228).

Summary

The intersection of homeschooling, mediated learning, and the education of children with special educational needs and disabilities has yet to be examined. Parents considering educational options for learners with SEND do not have practical information on structural cognitive modifiability or on how to mediate learning experiences for their children in a

homeschool setting. The purpose of this constructivist grounded theory study was to extend Feuerstein et al.'s (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience to a homeschool context for learners with SEND. It did so by constructing a grounded theory that explains how families create mediated learning experiences for learners with SEND in a homeschool context.

If, as Feuerstein et al. (2010) stated, the cognitive component is truly the “most important element in the development of a human being’s personality” (p. 3), and if the brain can truly change through mediated learning experiences as indicated by neuroplasticity and the theory of structural cognitive modifiability, then educators and families working with children with SEND must pursue educational environments and instructional strategies that facilitate learning and cognitive change. SCM is best achieved through mediators intentionally creating effective mediated learning experiences for learners (Feuerstein et al., 2006, 2010, 2015). This study conducted initial research of the process of mediating learning experiences for learners with SEND in a homeschool context and constructed a grounded theory that describes that process. The resulting model can inform parents homeschooling or considering homeschooling learners with SEND as well as researchers and policymakers seeking to support those families.

CHAPTER TWO: LITERATURE REVIEW

Overview

Homeschooling has become a viable option for families seeking an educational context that meets the individual needs of their children with special educational needs and disabilities (SEND), both those who seek the choice and those who view it as a last resort (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018). Mediated learning experience (MLE), in which a mediator interposes him- or herself between a student and a task or stimulus, can result in structural cognitive modifiability (SCM), changes in the learning framework of an individual (Feuerstein et al., 2006, 2010, 2015). A study constructing a grounded theory that explains how families create mediated learning experiences for learners with SEND in a homeschool context provides valuable information to families and educational policymakers who seek optimal individualized educational opportunities for these learners.

This chapter provides the theoretical framework for the study and examines the related literature. The theoretical framework integrates two theories conceptualized by Feuerstein et al. (2006, 2010, 2015), the theory of structural cognitive modifiability and the theory of mediated learning experience. The literature review begins by examining the prevalence of special educational needs and disabilities in school-age children and young adults before presenting a brief overview of homeschooling and its viability for learners with SEND. From there, it establishes the promise of Feuerstein's theories for learners with SEND and outlines the parameters of mediated learning experiences, along with the attributes of modifying environments. After that, the review explains the importance of dynamic assessment to the process of mediation and modifiability and identifies the characteristics of mediators. The

literature review concludes with a justification for research that examines the intersection of mediated learning and homeschooling for learners with SEND.

Theoretical Framework

Feuerstein (2010) and his colleagues identified the cognitive component as the “most important element in the development of a human being’s personality” (p. 3). Just a few short decades ago, the dominant belief was that cognitive abilities were fixed and unable to be modified; however, discoveries in neuroscience have since shown that the brain is plastic, not static, and that it “changes its physical and functional architecture in response to its complex interaction with its internal processes and the environment” (Tan & Seng, 2008b, p. ix). Feuerstein’s theories of structural cognitive modifiability and mediated learning experience provide a theoretical framework through which to consider the education of learners with special educational needs and disabilities.

Theory of Structural Cognitive Modifiability

A fixed mindset implies that human qualities, including intelligence, are carved in stone and unchangeable (Dweck, 2016). In a fixist view, intelligence is determined by the nature of the brain, inherited genes, and various conditions that affect the individual’s cognitive activity (Feuerstein et al., 2015). Recent psychological, genetic, and neuroscientific research, however, indicates that intelligence is not solidified by heredity but is in fact highly modifiable by the environment (Lebeer, 2008; Nisbett, 2009; Perkins, 1995). In his theory of structural cognitive modifiability, Feuerstein et al. (2006, 2010, 2015) viewed intelligence as adaptive and changeable and posited that external and internal forces could change the brain, even in individuals with neurodevelopmental disorders. These changes go beyond the acquisition of knowledge or skills, impacting individuals’ structures of thinking and providing them with the

ability to interact with the world in a different way (Falik, 2020; Feuerstein et al., 2006, 2010, 2015; Lebeer, 2008).

An individual's ability to modify him- or herself requires an investment of effort and resources to actualize; however, the option exists for everyone, regardless of obstacles such as age or etiological barriers (Feuerstein et al., 2006, 2010, 2015). Neuroplasticity of the brain breaks both etiological barriers and age barriers (Feuerstein et al., 2006, 2010, 2015; Lebeer, 2008). Even in the case of Down syndrome and other conditions, the etiology or causation is not an "inevitable obstruction" to the possibility of change because "the genetic determinant (among others) does not always 'have the last word'" (Feuerstein et al., 2015, p. 96). This theory offers great promise to learners with special educational needs and disabilities, no matter their age or the cause of the cognitive deficits.

The theory of structural cognitive modifiability extends the teaching of thinking beyond the acquisition of skills and tools to address the entire cognitive structure (Falik, 2020; Feuerstein et al., 2006, 2015; Tan & Seng, 2008a). SCM constitutes structural changes to a human being's cognitive system that "affect learning and behavior in deep, sustaining, and self-perpetuating ways" so that "[e]very change that takes place in a part changes the whole to which it belongs" (Feuerstein et al., 2010, p. 13). Four parameters describe the dimensions of structural change: permanence, resistance, flexibility/adaptability, and generalizability/transformability (Feuerstein et al., 2010). Permanence refers to the degree of preservation of a change over time. Resistance measures the stability of the change in new environments and conditions. Flexibility and adaptability look at how the change extends beyond the initial situation to other events and areas of learning responses. Generalizability and transformability consider how the individual continues to be modified and creates new structural changes through independent efforts. This

theory changes the definition of intelligence from that of an object or stable trait to a dynamic agent or state that can respond to a “person’s need to modify him- or herself in order to adapt to situations and cope with them successfully” (Feuerstein et al., 2010, p. 17).

In developing his theory of structural cognitive modifiability, Feuerstein et al. (2010) identified three forces that shape human beings: environment, human biology, and mediation. Although environment and biology are forces that influence many creatures, the ability to connect with the world through other human mediators is unique to human beings, resulting in enrichment of knowledge as well as thinking structures (Feuerstein et al., 2010, 2015). MLE is an essential aspect of human development because “modifiability is imparted to a human being by virtue of the mediation through which the world is mediated to him or her and creates tools and the preconditions necessary to become modified” (Feuerstein et al., 2010, p. 20).

The theory of structural cognitive modifiability provides purpose to this study. If learners with cognitive disabilities caused by etiological problems have the capacity to change at the level of structural cognition, educators need to understand and prioritize contexts and methods that facilitate that change. Traditional educational environments for students with special educational needs and disabilities conform to students’ current abilities rather than their potential abilities (Feuerstein et al., 2010). The focus of special education programs is adaptation: (a) adapting instruction and contexts to reduce the impact of disability and make learning accessible, (b) cultivating life skills that help the student develop adaptive behaviors related to general living activities, and (c) facilitating developmental opportunities in a way that promotes adaptive functioning (Farmer et al., 2016). Static forms of assessment only measure manifest performance rather than serving as learning opportunities for students and diagnostic tools for those who work with them (Tan & Seng, 2008a). These practices, though well intentioned, do not significantly

enhance the cognitive and learning skills of the children they serve and often result in missed opportunities (Alony & Kozulin, 2015). Instead, educators ought to create environments “that will encourage, reinforce, and create in the student the will, the need, and the ability to be modified” (Feuerstein et al., 2010, p. 130).

Theory of Mediated Learning Experience

Embedded in Feuerstein’s (2006, 2010, 2015) theory of structural cognitive modifiability is his theory of mediated learning experience (Tan & Seng, 2008a). Although he studied cognitive psychology under Jean Piaget at Geneva, where he gained a better understanding of cognitive processes and scientific and clinical methods of investigating those processes, Feuerstein departed from Piaget’s commitment to a fixed succession of developmental stages (Burgess, 2000). Feuerstein et al. (2015) described the factors emphasized by those with fixist views of intelligence—“heredity, genetic disorders, chromosomal disorders, organic dysfunctions, or other factors within the individual”—as distal factors, or “determinants of certain behaviors and functions of the individual” (p. 3). In the theory of structural cognitive modifiability, such factors do not ultimately determine an individual’s capabilities; instead, the potential of the learner is determined by proximal factors which are addressed by the provision of mediated learning experiences (Feuerstein et al., 2015). Distal factors predominate only when mediation is not given or when the individual is not able to benefit from the mediation offered (Feuerstein et al., 2015).

Mediated learning experience is defined as “the interposition of initiated, intelligent, goal-oriented individuals who interpose themselves between the world of stimuli impinging on the child and interpret what one is supposed to see” (Feuerstein et al., 2015, p. 5). Unlike Piaget’s (1964) theory of cognitive development, which focuses on a child’s direct interaction

with the environment, MLE theory interposes an intentional adult (or more intelligent peer) between the environment and the child to mediate the child's interaction with the environment (Feuerstein et al., 2006, 2010; Kozulin & Presseisen, 1995). The theory of mediated learning experience expands Vygotsky's (1935/2011) ZPD, which emphasizes the distance between the level of a child's actual development—the tasks he or she can independently solve—and the level of his or her possible development—the tasks he or she can solve under the guidance of adults or more intelligent peers (Vygotsky, 1935/2011). According to MLE theory, mediation occurs through an interaction between a mediator and a learner in which the mediator intentionally conveys meaning or a skill that the learner is encouraged to transcend or relate to another thought or experience (Feuerstein et al., 2006, 2010, 2015). Unlike behaviorist theory, which states that exposure to a stimulus causes change in a person by the response it prompts, mediated learning experiences include a human mediator between both the stimulus and the person and between the person and the response, facilitating understanding for the learner and precipitating change.

Feuerstein et al. (2006, 2010, 2015) identified three parameters that must be present to transform an interaction into a true MLE: intentionality and reciprocity, transcendence, and the mediation of meaning. Intentionality requires deliberate mediation in the interaction, and reciprocity indicates that both parties share in the experience. Transcendence moves an experience beyond the immediate need that is being met to deeper needs such as cultural significance. Mediation of meaning takes the interaction beyond the transfer of skill or knowledge and connects it to questions of meaning beyond the learner or the circumstance. Feuerstein considered human mediators to be essential to a learner's development and MLE to be the conduit through which cognitive ability is modified (Feuerstein et al., 2006, 2010, 2015).

Because Feuerstein believed that cognitive modifiability was possible for all learners, including those with neurodevelopmental disorders, MLE offers great promise for children with SEND, and homeschooling, which allows for one-on-one instruction tailored to the needs of the individual child and guided by a parent or other mediator, can be an ideal setting in which to create these experiences.

This constructivist grounded theory study extends Feuerstein et al.'s (20016, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience to a homeschool context for learners with special educational needs and disabilities. It constructs a grounded theory that explains how families foster modifiability and create mediated learning experiences for learners with SEND in a homeschool context and examines the motivation and reinforcement of family members' decisions to mediate these learning experiences.

Related Literature

This section provides an overview of the prevalence of special educational needs and disabilities in school-age children and young adults. Next, it presents a brief overview of homeschooling and homeschooling methods and examines the promise of homeschooling as an educational setting for students with SEND. This is followed by a discussion of the potential of cognitive modifiability and mediated learning for students with SEND. After that, it explains the parameters of MLE, identifies the attributes of modifying environments, and establishes the value of dynamic assessment in the process of mediation and modifiability. The section concludes by describing the characteristics of mediators and considering the intersection of mediated learning experience and homeschooling for students with SEND.

Prevalence of Special Educational Needs and Disabilities

The number of students from age 3–21 who received special education services under IDEA has increased by over half a million students over the past decade (National Center for Education Statistics, 2022). During the 2019–2020 school year, 7.3 million children received special education services under IDEA, representing 14% of the total public school enrollment (National Center for Education Statistics, 2022). The largest percentage of students served were in the category of specific learning disability (SLD), “a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations” (National Center for Education Statistics, 2022). Other children received services in categories such as speech or language impairment, health impairments, autism, developmental delays, intellectual disability, and vision or hearing impairments (National Center for Education Statistics, 2022). While specific data does not capture the total number of children with SEND who are homeschooled, numerous studies indicate that children’s special educational needs or disabilities are an important factor in parents’ choice to homeschool (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018).

Brief Overview of Homeschooling

Homeschooling began in the earliest days of America’s history (Firmin et al., 2019). About 3.7 million students in grades K–12 in the United States were homeschooled in 2020–2021, which constitutes 7% of school-age children, a significant increase from Spring 2019 when 2.5 million students (between 3 and 4% of school-age children) were homeschooled (Ray, 2022). Homeschooling, considered alternative a decade ago despite its traditional roots, “may be the fastest growing form of education in the United States” (Ray, 2022, para. 2). Homeschoolers are demographically diverse, representing people of varying races, ethnicities, socioeconomic

groups, and political backgrounds (Ray, 2022). The median income for homeschool families is very close to the nationwide median income of married-couple families with minor children; homeschooling parents identify as liberal, progressive, conservative, and libertarian, as well as agnostic, Christian, atheist, Jewish, Mormon, New Age, and Catholic; and 32% of homeschool students were minorities in a 2021 nationwide survey (National Center for Education Statistics, 2019; Ray, 2022).

Parents choose to homeschool their children for a variety of empirical, ideological, religious, and pedagogical reasons, including customizing the curriculum and learning environment for each child, enhancing family relationships, providing a safer environment, exerting greater control over their children's educational experience, exercising a civic duty to educate their child, and protecting children from racism and lower expectations (Brewer & Lubienski, 2017; Cook et al., 2013; Firmin et al., 2019; Guterman & Neuman, 2017; Ray, 2017, 2022). Parents of Black homeschool students reported reasons for homeschooling similar to those of other demographics, with the added motivation of helping their children better understand Black culture and history and avoiding racism that is prevalent in public schools (Ray, 2017). Ultimately, most homeschool parents "believe they can provide a better educational experience for their children than a school can, and they are ready to sacrifice their time, money, and professional development to make this happen" (Guterman & Neuman, 2017, p. 306). A myriad of structures, curriculum, instructional methods, and resources are available to homeschool families, who are diverse in their method as well as their motivation (Firmin et al., 2019).

Evidence suggests that homeschooled students outperform their public-school peers academically; however, research does not demonstrate a direct causal link between the practice

of homeschooling and the outcomes, as there is little experimental research of homeschooling and such studies are difficult to design and conduct (Brewer & Lubienski, 2017; Carlson, 2020; Cheng & Donnelly, 2019; Ray, 2017, 2022). Black homeschool students performed “academically above the national average in general and well above Black public school students in particular” (Ray, 2015, p. 90). Parents are generally satisfied with their children’s progress in their homeschool and appreciate the freedom to pace instruction, select curriculum, and establish daily routines that best meet their child’s individual needs (Cook et al., 2013; Firmin et al., 2019). In fact, parents attribute “success” in their homeschool to the ability to assess their child’s academic strengths and weaknesses and tailor their child’s education to his or her specific needs (Firmin et al., 2019). In addition, though research on homeschooled students’ performance in higher education settings is sparse, evidence indicates that homeschooled students earn significantly higher grades in tertiary college calculus classes (Wilkens et al., 2015) and “are prepared for college and may even be considered as high achievers when compared to non-homeschooled students” (Cogan, 2010, p. 24).

Homeschooling Approaches

Approaches to homeschooling are as diverse as the individuals who choose to homeschool and their reasons for doing so, with methods ranging from delight-directed learning to classical education to Montessori or Charlotte Mason to unschooling. In-depth qualitative studies have revealed a pattern of pedagogical development among homeschool families in which they often initially rely on prefabricated curricula in an attempt to “replicate the conventional school experience at home” but then become more flexible, eventually acting “more like facilitators” as their children take control of their own learning (Gaither, 2017, p. 222). Parents have identified homeschooling as a way to “slow down the pace of life,” which

enables them to “devote more and higher quality time to the children” and enables the children to “learn at their own pace, not the one dictated by others” (Neuman & Guterman, 2017, p. 158).

Their view of homeschooling reflects an underlying assumption that this type of learning is effective because it allows learning to take place when a student is receptive—“at the right time, place, and manner for the individual” (Neuman & Guterman, 2017, p. 158).

Many homeschool families do not operate in isolation but blend multiple resources outside the home, including participating in co-ops that meet anywhere from once to multiple times each week, meeting with personal tutors or therapists, taking dual-enrollment courses or a variety of extracurricular lessons, volunteering in the community, and spending time with other families and homeschool groups (Thomas, 2016). The internet allows increased access to curricula and online educational resources and services; virtual schools and online courses delivered independently or in asynchronous or synchronous formats; and online forums and social media groups that support homeschool families (Jolly & Matthews, 2020). Approximately one third of secondary-level homeschoolers enroll in online courses, and homeschoolers are permitted to participate in public school courses and activities in about half of the United States, with another quarter of states permitting individual districts to decide whether to allow homeschooler participation (Carlson, 2020). A case study of three families homeschooling high school students revealed “an eclectic mix of flexible instructional activities in the daily and weekly schedule of students” and parental use of a variety of resources to educate students (Carpenter & Gann, 2016, p. 335).

Promise of Homeschooling for Students with Special Educational Needs and Disabilities

Among the top motivators for parents who choose to homeschool is their child’s special educational needs or disability and the public or private school’s inability or lack of resources to

meet those needs (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018). In addition, schools face increasing pressure to focus on test scores and outcomes, which is often viewed as coming at the expense of teaching students how to learn (Deutsch & Mohammed, 2008). Parents who seek optimal learning environments for their children with SEND often find that “regular schools are not always a real option,” and the sense that “regular and special schools collude in a ‘concealment of failure’” leaves them without “genuine options” (Mann et al., 2018, p. 191). Current educational policy elevates inclusion as the best representation of a “just state of affairs” for students with SEND; however, for children characterized by difference, “a single conception of what constitutes a just state of affairs ... is insufficient to capture the complexity of the issue” (McMenamin, 2018, p. 634). A more nuanced understanding of educational arrangements is needed—one that acknowledges the value of varying provisions and recognizes the preferences and needs of individual children and families (McMenamin, 2018).

The percentage of students with SEND being home educated has substantially increased since the overall rise in the homeschooling population both in the United States and abroad (Cook et al., 2013; Maxwell et al., 2020). Students with a variety of diagnoses and needs are now educated in homeschool environments, including those with ADHD, autism spectrum disorders, intellectual disability, learning disabilities, speech and language impairment, visual or hearing impairments, and physical disabilities (Cook et al., 2013).

Although some parents choose to homeschool their child with special educational needs and disabilities, others feel they have no other choice and view the option as a last resort (Maxwell et al., 2020). This phenomenon is not limited to the United States, as indicated by the Badman Report, which was commissioned to assess home education in England and revealed

that parents withdrew their children from school in despair over needs that were inadequately met (Kendall & Taylor, 2016). Those who opt to homeschool their child with SEND cite many motivations for the decision, including dissatisfaction with the services their child receives in school, negative experiences with or attitudes from the school or staff, concerns about bullying or the stigma of labeled disabilities, the unsuitability of standards-driven and test-based education for their child, the school's inability to meet their child's additional learning needs, and a desire to tailor education to their child's specific needs (Cheng et al., 2016; Cook et al., 2013; Maxwell et al., 2020; Simmons & Campbell, 2019). Whatever the motivation, homeschooling appears to have advantages over public schooling, such as increased academic engagement and increased academic gains for children with ADHD (Duvall et al., 2004).

Homeschooling is the epitome of individualized education (Brewer & Lubienski, 2017) since every aspect from curriculum choice and instructional methods to assessment and evaluation tools can be personalized to the student, making it an excellent option for children with unique educational needs. The type of educational settings and support received by children with special educational needs and disabilities, as well as the level of satisfaction with those educational settings, have been found to be syndrome specific (Van Herwegen et al., 2018). Research affirms the benefits of personalized education or interventions based on individual differences in traditional school settings, including in reading instruction for individuals with Down syndrome (Lemons et al., 2018). The homeschool setting is naturally conducive to personalizing education based on individual differences. Because of their familiarity with their children, parents have the potential to implement curricula and instruction suited to their children's unique learning needs, providing individualized instruction in a personalized setting with a higher rate of interaction with the parent-instructor and resulting in potentially greater

academic benefits to their students with disabilities (Cheng et al., 2016; Cook et al., 2013). The flexibility of the homeschool environment can even help prevent loss of educational time due to medical appointments or therapies, facilitate more control over dietary needs, and mitigate the effects of conditions like sleep problems, which are common in children with Down syndrome and other disabilities, allowing parents to “support sleep at home to improve executive functioning across settings” (Esbensen & Hoffman, 2018, p. 576).

Promise of Structural Cognitive Modifiability and Mediated Learning Experience for Learners with SEND

Freud’s psychodynamic approach attempted to “explore the unconscious affective determinants of behavior,” maintaining that “behavior is largely a function of non-intellectual factors that may bypass or even neutralize cognitive processes” (Feuerstein et al., 2006, p. 6). The behaviorist approach to education valued behaviors that were directly observable and “attempted to remove from psychological consideration the entire apparatus of the human capacity to think and reason” (Feuerstein et al., 2006, p. 8). Bandura (1971) sought to revise the classic behaviorist paradigm to make it more educationally relevant and subsequently developed the social learning theory, which asserted that “human beings cannot produce effective behavior if they rely on their own experience” (Feuerstein et al., 2006, p. 9). Meanwhile, psychometric testing has dominated psychology and education, resulting in the permeation and entrenchment of the IQ test in the educational and vocational system despite the fact that “to this very day we still do not have any real understanding of what the IQ test measures, thereby leading to grave dangers for its abuse within education” (Feuerstein et al., 2006, p. 10). The forces of behaviorism, social learning theory, and psychometric testing do not view cognition as a structurally modifiable entity (Feuerstein et al., 2006).

Under a fixist mindset, little hope exists for children with conditions that cause cognitive deficiencies; however, according to Feuerstein's structural cognitive modifiability theory, human mediation has the power to shape human beings. Indeed, in recent years, researchers have begun to demonstrate that mediated learning fosters cognitive modifiability. Brown (2018a) found that the Equipping Minds Cognitive Development Curriculum (EMCDC), a program delivered through mediated learning experiences, increased verbal abilities, nonverbal abilities, and IQ composite abilities in study participants. In five separate case studies of children receiving intervention with EMCDC, Brown (2018a) identified cognitive gains in all five participants. SCM-based interventions, including some using adaptations of Feuerstein's Instrumental Enrichment (FIE), were found to improve multiple aspects of cognitive function in individuals ranging from secondary school to adulthood (Falik, 2020; Lomofsky, 2020; Tan & Seng, 2008a). In a multicenter study spanning five countries, Kozulin et al. (2010) found that the Feuerstein Instrumental Enrichment-Basic enhanced general cognitive functioning of children with learning disability and mild to moderate intellectual impairment. Studies utilizing other types of mediated interventions also revealed that mediation effected change in children's cognitive function (Tzuriel & Caspi, 2017; Tzuriel & Shomron, 2018).

Neurodevelopmental disorders are lifelong conditions that affect the nervous system and result in abnormal brain function. Their causes are varied, as are the diagnoses and experiences of students challenged by the disorders. Because of neuroplasticity and cognitive modifiability, mediated learning experiences benefit students with neurodevelopmental disorders. Interventions based on MLE have been shown to produce cognitive gains for students with neurodevelopmental disorders (Brown, 2016, 2018a, 2018b; Kozulin et al., 2010; Lomofsky, 2020; Tzuriel & Caspi, 2017; Tzuriel & Shomron, 2018). All five of the students in the case

studies described by Brown (2018a) had neurodevelopmental disorders, and all showed cognitive and academic gains after receiving the mediation-based Equipping Minds Cognitive Development Curriculum. An experimental study of children with Down syndrome also reported gains in cognitive areas from interventions adapted to the children's specific learning profiles (Iacob & Musuroi, 2013), a process strikingly similar to Feuerstein's description of SCM. In addition, Lomofsky (2020) conducted a case study of a young woman with Down syndrome who was assessed using Feuerstein's Learning Potential Assessment Device (LPAD) and instructed using the Feuerstein Instrumental Enrichment program. These clinical applications of MLE were found to unlock potential strengths and demonstrate progress in language and verbal communication; increase intrinsic motivation, self-regulation, and awareness of self-change; and produce a shift from passive acceptance to an optimistic view of the future (Lomofsky, 2020).

Feuerstein et al.'s (2006, 2010, 2015) theory of structural cognitive modifiability holds great promise for learners with SEND, including students with Down syndrome and other genetic disorders whose cognitive disabilities originated at the cellular level (Falik, 2020; Feuerstein et al., 2010; Lomofsky, 2020; Partanen, 2020). With intense, systematic mediation between them and the world, children with Down syndrome and other neurodevelopmental disorders can experience changes in cognitive function and "the emergence of thinking structures that subsequently enable the attainment of much higher achievements than those that we, or others, deemed possible" (Feuerstein et al., 2010, p. 23). The theory of mediated learning experience offers a path for learners with SEND to achieve modifiability and academic growth, provided mediators can create these learning experiences for their students (Feuerstein & Lewin-Benham, 2012; Greenberg et al., 2020; Klimovic et al., 2020; Kozulin et al., 2010).

Essential Parameters of Mediated Interactions

In the theory of mediated learning experience, Feuerstein et al. (2006, 2010, 2015) identified three essential parameters of mediated interactions: intentionality/reciprocity, transcendence, and mediation of meaning. The proper application of these parameters, all three of which must be present for an interaction to be considered mediational, results in significant transformations in the three partners in the mediated interaction: the stimuli, the individual, and the mediator (Feuerstein et al., 2006). The stimuli are the “objects and events which impinge on the learner” (Feuerstein et al., 2006, p. 55). The individual is the child or adult who receives mediation, and the mediator is an individual who “interacts with a child with the intent of helping the child learn something specific” (Feuerstein & Lewin-Benham, 2012, p. 59). Mediators are typically “a parent, teacher, sibling or other intentioned person in the life of the learner” (Feuerstein et al., 2006, p. 68).

The first essential parameter of MLE is intentionality/reciprocity. In contrast to direct exposure learning, an MLE interaction requires the mediator to have an explicit intention for the experience (Feuerstein et al., 2015). The mediator intentionally selects, enhances, focuses, and organizes “stimuli that are most appropriate to his or her intentions and then frames, filters, and schedules the learner’s exposure according to clearly identified and explicit goals” (Feuerstein et al., 2006, p. 68). Intentionality goes beyond stimulus selection to include conveyance of the intention—“I want you to see this, I want you to hear what I say, I am saying it loudly, I want you to look at me when we talk, etc.” (Feuerstein et al., 2006, p. 72). This process of mediation is designed to elicit reciprocity, which results in the transformation of the three partners as described above.

Transcendence is the second essential parameter of MLE. Transcendence occurs when learning is generalized or transferred to different situations that are connected but that arise in a

different time, place, or context (Feuerstein & Lewin-Benham, 2012). It is closely related to intentionality, as it gives purpose to the interaction and “conveys to the mediatee that what is being experienced has a larger perspective and a further meaning” (Feuerstein et al., 2006, p. 72). Transcendence allows learners to connect what they are doing now to something from the past or something they can imagine in the future (Feuerstein & Lewin-Benham, 2012).

The third essential parameter of MLE is mediation of meaning. Mediation of meaning occurs when significance is attributed to a particular experience: “What does it mean to you? What is the value of this experience? Why do I want you to experience it? What do I want you to learn from it? Why should it be important to you?” (Feuerstein et al., 2015, p. 27). Mediators determine which meanings to emphasize, as a single stimulus can contain multiple meanings, shades of meanings, or even opposing meanings (Feuerstein & Lewin-Benham, 2012). Ultimately, the purpose of mediating meaning is to equip learners to find meaning in their own experiences and to seek connections to the world around them (Feuerstein & Lewin-Benham, 2012).

Situational Parameters of Mediated Learning Experience

In addition to the three essential parameters of mediated learning experiences, Feuerstein et al. (2006) identified nine situational or reinforcing parameters of MLE that “are determined by the situations and events to which the learner is exposed, and which present opportunities to expand and reinforce mediational objectives” (p. 75). They are the “sources of the potential diversity of human experience” and are considered situational because they differ in importance for particular individuals depending on the specifics of their situation (Feuerstein et al., 2015, p. 58). The nine situational parameters of mediated learning experiences are (a) a feeling of competence; (b) regulation and control of behavior; (c) sharing behavior; (d) individualization

and psychological differentiation; (e) goal seeking, goal setting, goal achieving, and goal monitoring behavior; (f) the search for challenge, novelty, and complexity; (g) the awareness of the human being as a changing entity; (h) the search for optimistic alternatives; and (i) the feeling of belonging (Feuerstein et al., 2006, 2015).

A feeling of competence is generated largely by mediators who “interpret the positive meaning of actions” and “create the feeling that the way tasks are mastered reflect[s] competence” (Feuerstein et al., 2015, p. 55). This parameter is complicated by the fact that being competent does not necessarily lead one to *feel* competent (Feuerstein et al., 2006). To mediate a feeling of competence, mediators must create opportunities for the learner to experience competence, as well as to understand and accept it. They must also help the learner to extend the feeling of competence to areas in which competence exists but is not yet part of the learner’s self-concept (Feuerstein et al., 2006). Ultimately, feelings of competence are generated not only by performance but also by the encouragement and support present in an environment that allows for mastery of a task and confrontation with new and more complex tasks. Such encouragement is critical in today’s society in which individuals face countless complex tasks and environments that cause them to feel and act incompetent (Feuerstein et al., 2015).

The regulation and control of behavior is especially important for individuals who tend to act impulsively and is one of the first elements that should be intentionally mediated (Feuerstein et al., 2015). This parameter has two facets: inhibiting unwanted, dysfunctional, or distracting behaviors and initiating blocked or insufficiently present behaviors (Feuerstein et al., 2006). The act of regulating behavior requires an individual to gather data about the task he or she is called to perform, understand what the task demands, and then consider whether he or she has the necessary tools and skills or whether other functions need to be mobilized to perform it

(Feuerstein et al., 2015). The underlying goal is to “create insightful, self-regulatory processes so that the learner knows and takes responsibility for the adaptive behaviors that are needed, achieved, and mastered” (Feuerstein et al., 2006, p. 77). Mediation of regulation and control of behavior involves two main components: creating cognitive functions to gather and act upon the data of the situation (“what do I know, have to know, and need to act upon in order to respond effectively and competently”) and metacognitively evaluating the data to determine whether to execute or continue specific responses in the current or similar situations (Feuerstein et al., 2006, p. 77).

Sharing behavior is “the way by which the individual fuses, identifying with the other, and by this sharing enriches existence” (Feuerstein et al., 2015, p. 59). It “reflects the need and value to the individual of participating with others and accepting the participation of others” and involves “knowing that one is heard, understood and accepted” (Feuerstein et al., 2006, p. 78). Individuals with SEND often have sharing processes that are limited, blocked, or even avoided, yet sharing behavior is a need of all individuals, making it an important goal of MLE that is closely connected to intentionality and transcendence (Feuerstein et al., 2006).

Individualization and psychological differentiation are essentially the opposite of sharing behavior because they reflect an individual’s need to become an articulated, differentiated self (Feuerstein et al., 2006). Both parameters are important and can be viewed as two sides of the same coin rather than contradictory to one another (Feuerstein et al., 2015). An individual needs the opportunity to learn that his or her unique way of behaving, thinking, and expressing thoughts is acceptable and appropriate (Feuerstein et al., 2015). A mediator utilizes opportunities in the learner’s life to demonstrate the value of his or her individual differences and conveys and reinforces “the unique, valued, and functional importance of the individual’s skills, styles of

reaction, and perceptions of the world (to the extent that they are in fact functional and productive)” (Feuerstein et al., 2006, p. 79).

Goal seeking, goal setting, goal achieving, and goal monitoring behavior enriches and articulates the life of the learner while adding an organizing principle (an element of transcendence) and mobilizing the tools the individual needs to achieve goals (Feuerstein et al., 2006). A goal is distant from the present level of functioning and achievement, requiring from the individual “a capacity, propensity, and readiness to act upon representations that are abstract, not yet concrete” (Feuerstein et al., 2015, p. 62). The mediator must be aware of how strongly individual values and experiences affect goal seeking, setting, and achieving and of how important the mediational interaction is to these abstract processes (Feuerstein et al., 2006, 2015).

The mediation of the search for challenge, novelty, and complexity is a critical element of engaging individuals in a society with rapidly changing technology that must be quickly learned and used (Feuerstein et al., 2015). This parameter involves “[b]ringing the learner in contact with new, potentially difficult and unfamiliar experiences” and encouraging him or her to “respond adaptively, continuously, and creatively” (Feuerstein et al., 2006, p. 80). A mediator “assesses the potential of a situation with respect to challenge, or creates experiences where novelty, complexity, or unfamiliarity can be responded to competently, insightfully, and with a sense of both accomplishment and directionality” (Feuerstein et al., 2006, pp. 80–81).

The awareness of the human being as a changing entity with the ability to adapt is essential in the ever-changing world in which we live (Feuerstein et al., 2015). In order to adapt to changing conditions and demands, individuals must “modify themselves—in behavior, aspirations, ways of approaching things”—to take advantage of opportunities and avoid

limitations that come from the belief that one cannot change (Feuerstein et al., 2015, p. 66). The very act of MLE is intended to help individuals grow, and mediation of this parameter helps the learner to recognize changes that have occurred and to see him- or herself as capable of change, thus motivating him or her to change further (Feuerstein et al., 2006).

The search for optimistic alternatives occurs when an individual faces both negative and positive options that seem to be equally powerful and is confronted with the dilemma of which to choose (Feuerstein et al., 2006). This parameter combats both passivity and pessimism and requires a willful and conscious act to choose an optimistic alternative (Feuerstein et al., 2015). The theories of SCM and MLE that birthed this parameter intrinsically convey an optimistic alternative by saying that a child with a neurodevelopmental disorder such as Down syndrome can be helped and that “chromosomes do not have the last word” (Feuerstein et al., 2006, p. 25).

The sense of belonging begins in the nuclear family and extends concentrically into interaction groups such as clubs, teams, and even national and international communities (Feuerstein et al., 2015). Unfortunately, modern society severely hampers the search for belonging because of its extreme trend toward isolation and individuation and the resulting sense of personal alienation and disconnectedness (Feuerstein et al., 2006). MLE, however, is intensely interactive and inherently fosters a sense of belonging, as the mediator and mediatee experience an intimate and committed relationship that models both personal and task-based investment (Feuerstein et al., 2006).

Attributes of Modifying Environments

Feuerstein et al. (1988) also identified four attributes of modifying environments: (a) a high degree of openness, (b) conditions of positive stress, (c) a planned and controlled encounter with new tasks, and (d) individualized/customized/specialized instruction and mediation.

Openness gives individuals with deficient performance equal access to human needs such as privacy and respect and sets relatively “equal” responsibilities for each person, along with providing whatever is necessary to fulfill those responsibilities (Feuerstein et al., 1988, p. 239). Although it respects individual needs, a modifying environment only temporarily uses protective services so as not to stagnate the learner’s adaptive forces. Instead, mediators seek to create conditions of positive stress that allow for adaptation and modifiability (Feuerstein et al., 1988).

Modifying environments also produce positive tension between that which is known or mastered and that which has yet to be learned by offering planned and controlled encounters with new tasks; to facilitate change, “environmental conditions must be created that make modifiability essential!” (Feuerstein et al., 1988, p. 240). Finally, a modifying environment provides individualized/specialized/customized instruction. The “successful educational experience must contain both a modifying atmosphere *and* individualized skill development opportunities to enhance the modification” because each complements and is essential to the other (Feuerstein et al., 1988, pp. 240–241).

Dynamic Assessment

Dynamic assessment (DA) is “an interactive approach to conducting assessments within the domains of psychology, speech/language, or education that focuses on the ability of the learner to respond to intervention” (Haywood & Lidz, 2007, p. 1). The interactive nature of DA allows the examiner to engage in an active relationship with the subject; instead of merely giving instructions, posing questions, and recording responses, the examiner is able to conduct actual teaching within the interaction and to make a deliberate effort to produce change in the subject (Haywood & Lidz, 2007). More than just an assessment procedure, DA reflects an entirely different attitude toward assessment: “Dynamic assessors are convinced that children can learn if

sufficient time and effort is expended to discover the means by which they can profit from intervention” (Lidz, 1991, p. 9).

Dynamic assessment is especially useful for learners with special educational needs and disabilities (Feuerstein et al., 2006; Feuerstein & Lewin-Benham, 2012; Haywood & Lidz, 2007). In conjunction with his theories of SCM and MLE, Feuerstein et al. (1979) described the limitations of conventional testing for individuals with cognitive disabilities and advocated for a shift from static to dynamic assessment. Static assessment traditionally “focuses on already learned *products*,” which provide no information about the reason for failure or the learner’s ability to achieve and offer no connections between the assessment and interventions. Dynamic assessment, in contrast, “focuses on learning *processes*” (Lidz, 1991, pp. 3–4).

The theory behind DA is rooted in the work of Vygotsky and Feuerstein (Hurley & Murphy, 2020). Vygotsky’s (1935/2011) ZPD served as a catalyst for the initial development of dynamic assessment practices, which originated as a response to the challenge of determining “means of interacting in a facilitative manner with the child so as to maximize the ZPD, or at least devise means of effectively revealing these capacities” (Lidz, 1991, pp. 7–8). Feuerstein developed the Learning Propensity Assessment Device to fulfill the need for appropriate instruments to assess immigrant youth in Israel, reveal their real potential, and evaluate their modifiability (Feuerstein, 2000). The objectives of Feuerstein’s model of dynamic assessment, the LPAD, are to profile the learner’s adequacies and deficiencies, to gain an impression of the learner’s modifiability, to initiate active and self-regulated learning, to determine the intensity necessary to produce change (defined as modifiability and active, self-regulated learning), and to try interventions to determine their effectiveness in improving performance (Lidz, 1991).

One of the main challenges in incorporating DA is that the assessment objectives often do not match those of the educational settings, which frequently value speed and quantity over quality (Lidz, 1991). Static tests tend to assess product orientation and rote memorization with little to no emphasis on measuring attention, problem solving, analysis of errors, or metacognition (Lidz, 1991). Until those constructs become educational objectives, there is no rationale for including them in assessments (Lidz, 1991), which will not happen “unless more flexible environments are introduced in school systems ... [that] would permit differential practices that could be coordinated with useful diagnostic assessment so that the testing and the teaching become integral events” (Glaser, 1981, p. 925).

Excited by the promise of MLE, Lidz (2000) concluded that it would be “useful to operationalize MLE into a scale so that interactions could be described with some precision, interventions developed to address the specific components, and research designed to investigate the impact of this concept” (p. 166). She developed a model for dynamic assessment and for rating adult-child interactions called the Mediated Learning Experience Rating Scale, which serves as “a means of assessing the degree to which MLE characterizes the interactions of any mediator with a young child” (Lidz, 1991, p. 67). The scale incorporates most of Feuerstein’s parameters but reflects Lidz’s own interpretations and modifications. The MLE Rating Scale extends dynamic assessment to the home setting by providing diagnosticians with a concrete guideline to “describe the interactional components of the home and school environments” and to “link these observations to recommendations for intervention” (Lidz, 2000, p. 170).

Characteristics of Mediators

A mediator can be any adult (or older sibling or more advanced peer) who wants to teach something to a child. Because the act of mediation is fundamentally about change, the most

important characteristic of a mediator is the belief that children can change (Feuerstein & Lewin-Benham, 2012). Feuerstein once said, “If you believe a child can change ... you will do something to make sure he [or she] does. If you don’t believe, you don’t do” (Feuerstein & Lewin-Benham, 2012, p. 59). A mediator, therefore, exhibits a growth mindset, which is the belief that abilities can be cultivated. This mindset can be intentionally nurtured and developed (Dweck, 2016).

Mediated learning experiences are defined as “the interposition of initiated, intelligent, goal-oriented individuals who interpose themselves between the world of stimuli impinging on the child and interpret what one is supposed to see” (Feuerstein et al., 2015, p. 5). The mediator must be “interested in and concerned with certain elements that the child has to learn” and must “make things available to the learner in a way that he or she will be able to learn from them, understand them, ... experience them,” and eventually transfer these acquired structures of knowledge to a variety of less familiar, more complex areas of functioning (Feuerstein et al., 2015, p. 5). A mediator will seek to “encompass interactions that display the mediator’s confidence in the learner’s ability to learn and apply thinking modes and strategies” by utilizing a process-oriented teaching style with a metacognitive emphasis (Wong, 2020, p. 172).

A mediator must be a human being who can operate with intentionality. The behaviorist view of development through direct exposure and Piaget’s (1964) view of learning as a product of maturation do not fully capture the way human intelligence develops (Feuerstein et al., 2015). Some would argue that Vygotsky’s (1935/2011) conceptualization of ZPD allows for mediation via a tool such as a book or a computer; however, computers, books, and tools lack the intention of a human mediator, who can direct the attention of the child to the stimuli in a way that affects “the capacity and propensity of the individual to be affected by direct exposure” (Feuerstein et

al., 2015, p. 19). In a mediated interaction, the mediator is conscious of the fact that a child needs particular things to benefit from encounters with specific stimuli, and the mediator thus acts differently from how he or she would act outside of the mediated interaction. For example, when mediating imitation, he or she will work more slowly; repeat as necessary; make his or her actions more conspicuous, observable, and clear; and make necessary efforts to draw attention and build memory (Feuerstein et al., 2015). Guided by the belief that children can change, an effective mediator will “stimulate competent work by interacting with intention, conveying meaning, and making stimuli so powerful that both the immediate and transcendent meanings are apparent to children” (Feuerstein & Lewin-Benham, 2012, p. 65).

The role of an assessor in a dynamic assessment is to note strengths and weaknesses in the child’s cognitive processing and to provide intervention related to the content presented (Lidz, 1991). He or she “strives to function as an optimal teacher, engaging in behaviors that have been found to be definitive of excellence in teaching or parenting” (Lidz, 1991, p. 13). The goals of a DA assessor thus overlap with those of a mediator. For example, the behavior of an LPAD assessor can be described in terms of the components of the MLE (Lidz, 1991).

Feuerstein acknowledged the timeless nature of mediation, attributing human progress to the transmission of experiences from one generation to the next. He saw mediation as intuitive to mothers: “Mothers are natural mediators: they convey feelings of self-competence, make children aware of important ideas, and teach essential behaviors ... a mother’s mediation ... is the strongest shaping force in a child’s development” (Feuerstein & Lewin-Benham, 2012, p. 32). In addition, the very act of mediating changes the mediator, who modifies his or her behavior, approach, and intention to mediate to the child (Feuerstein et al., 2015). Through his or her actions, a mediator make children so alert that even uninteresting things become the center of

their interest, a drastic difference from teaching that seeks to simply transmit a piece of knowledge to a child (Feuerstein et al., 2015). As Feuerstein et al. (2015) observed, “[a]ll teaching is not mediating; but all mediating is teaching!” (p. 32).

Intersection of Homeschooling and Mediated Learning for Students with SEND

The research reviewed in the sections above shows the educational challenges and current practices of students with SEND, as well as both the limitations of traditional school environments and the promise of SCM and MLE for these students. However, creating a context for mediated learning experiences for students with special educational needs and disabilities that are already not being met in the school system poses a great challenge. Homeschooling enables parents, who are often most familiar with their child’s needs, to design instructional programs specific to those needs, to employ pedagogical methods appropriate for the child, to work one-on-one with the child, to allow the child to work at his or her own pace, and to structure the school day in the way that is most suitable for the child (Cheng et al., 2016; Firmin et al., 2019). Some of the specific benefits of homeschooling learners with SEND complement the parameters of mediated interactions outlined by Feuerstein et al. (2006, 2010, 2015). These benefits include opportunities for more natural learning experiences, increased individualization and planning (which may include goal setting), student-paced learning, and improved student self-esteem (Cook et al., 2013). Homeschool parents approach education with individual accommodation in mind and describe themselves as thoughtful and intentional about the process (Firmin et al., 2019), thus fulfilling another of Feuerstein’s conditions for mediated learning experiences.

In his theory of mediated learning experience, Feuerstein claimed that human beings possess a need to mediate that stems from a sense of finite existence (Feuerstein et al., 2010; Feuerstein & Lewis-Benham, 2012). Many parents of children with SEND discover the

flexibility of homeschooling and its potential to tailor education to their child's needs through self-education, after which they make a genuine choice to home educate (Maxwell et al., 2020). This reflects Cook et al.'s (2013) mantra that “[m]aking the decision to homeschool a child with a disability requires thoughtful deliberation” (p. 101) and perhaps demonstrates the need to mediate that Feuerstein described.

Homeschooling also has the potential to facilitate the four attributes of a modifying environment as outlined by Feuerstein et al. (1988): a high degree of openness, conditions of positive stress that require an individual to adapt, planned and controlled encounters with new tasks, and individualized/specialized/customized instruction and mediation. The control that homeschool families can exercise over their environment offers great promise for modification. Likewise, parents of children with SEND show persistence in fighting for and continuously challenging their children, hold “an optimistic and strong view on their child’s potential,” and are problem solvers who are willing to invest time and energy into helping their children (Lebeer, 2008). The intersection of homeschooling and mediated learning experience for children with special educational needs and disabilities thus holds tremendous promise.

Summary

Children with SEND comprised 13% of the public school population in the 2019–2020 school year (National Center for Education Statistics, 2022). Given that parents frequently cite their children’s special educational needs and disabilities as a primary factor in their decision to homeschool (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018), children with SEND likely comprised a significant percentage of the 2.5 million children homeschooled that year as well (Ray, 2022). Children with special educational needs and disabilities face a myriad of educational challenges (Chapman & Kay-

Raining Bird, 2012; Gandy et al., 2020; Hronis et al., 2020; Iarocci et al., 2012; Jarrold & Brock, 2012; Russo et al., 2012; Vicari, 2012; Yamauchi et al., 2019). Past fixist models offered them little hope for change (Dweck, 2016; Nisbett, 2009; Perkins, 1995), and school-based interventions often struggle to meet their needs (Maxwell et al., 2020).

Homeschooling for the general population has exploded in recent years (Ray, 2022). Despite a lack of experimental studies caused in part by the nature of homeschooling, homeschooling successes are well-documented and affirmed by the families that engage in the practice (Brewer & Lubienski, 2017; Carlson, 2020; Cook et al., 2013; Firmin et al., 2019; Ray, 2022). Dissatisfaction with traditional schools and a desire to tailor education to the specific needs of their learners has led many families of students with SEND to opt to homeschool (Cheng et al., 2016; Cook et al., 2013; Maxwell et al., 2020). Homeschooling has been elevated as an educational option with great promise for children with SEND (Cheng et al., 2016; Cook et al., 2013).

On the shoulders of neuroscientific and psychological findings of neuroplasticity (Doidge, 2007; Falik, 2020; Nisbett, 2009; Tan & Seng, 2008b), Feuerstein et al. (2006, 2010, 2015) theorized that structural cognitive modifiability is possible for all individuals, regardless of age or etiological barriers. Mediation is necessary to facilitate this change, and mediated learning experiences are the conduit for such mediation (Feuerstein et al., 2006, 2010, 2015). The convergence of Feuerstein's theories with the promise of homeschooling as an ideal educational environment in which a family member (mediator) can provide individualized instruction (mediation) based on dynamically assessed needs and capabilities offers great hope for children with SEND.

The superior progress of homeschool students has been attributed to the “higher rate of interaction with the parent-instructor and the greater degree of individualized attention provided in the homeschool setting,” yet “there is a need for further study on the effects of homeschooling on the academic, social, and quality of life of students with disabilities” (Cook et al., 2013, p. 99). As Murphy (2014) stated, we “need to study homeschooling because it is the most robust form of educational reform in the United States today” (p. 245). Results show that “students with disabilities are at least as effectively served in a homeschool setting as in a traditional public school setting,” but “much more research must be done to better understand homeschooling and special education” (Cheng et al., 2016, p. 394). Additionally, “[m]ore research is necessary on homeschool children with specific disabilities” (Cook et al., 2013, p. 100).

From the literature, an intersection emerges in which the needs of students with SEND converge with both the promise of homeschooling as an ideal individualized educational setting and the promise of structural cognitive modifiability through mediated learning experiences as an avenue for dismantling etiological and other barriers facing these learners. Despite the possibilities of such an intersection, no known studies have captured the process of how mediated learning experiences are created for learners with SEND in a homeschool environment, nor has any guidance been provided to homeschool parents on how to mediate learning experiences for their children with SEND. By extending Feuerstein et al.’s (2006, 2010, 2015) theories of SCM and MLE to a homeschool context for learners with SEND, this constructivist grounded theory study aims to begin that conversation. It also identifies areas for further research on a convergence that has the potential to change the educational lives of children for whom even small changes offer significant hope.

CHAPTER THREE: METHODS

Overview

Homeschooling has become both an optimal choice and a perceived necessity for families seeking individualized learning contexts in which to meet the special education needs of their children with disabilities (Cheng et al., 2016; Cook et al., 2013; Guterman & Neuman, 2017; Maxwell et al., 2020; Morse & Bell, 2018). Feuerstein et al.'s (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience increase the cognitive and educational potential of neurodiverse learners, even those with etiological causes for their challenges. The intersection of homeschooling, special educational needs and disabilities, and the promise of SCM through MLE has not been formally researched. The purpose of this constructivist grounded theory study was to extend Feuerstein's theories to the homeschool context by creating a theoretical model that explains how homeschooling families create mediated learning experiences for learners with SEND. Data was gathered through timelines, interviews, and statements of advice. The data was analyzed iteratively to answer the central research question: How do Feuerstein's theories of structural cognitive modifiability and mediated learning experience extend to a homeschool context for learners with special educational needs and disabilities?

This chapter introduces the study design, including the research questions, setting and participants, researcher positionality, and procedures. It also provides an overview of the data collection plan that includes detailed information about the interviews that were conducted as well as the timelines and statements of advice that were analyzed. The chapter concludes with a brief overview of data analysis methods; a discussion of how trustworthiness was established to ensure the study's credibility, dependability and confirmability, and transferability; and a

summary of ethical considerations.

Research Design

This qualitative study was conducted using a constructivist grounded theory (Charmaz, 2014) research design. Because the study examined novel territory—the intersection of homeschooling, mediated learning experience, and special educational needs and disabilities—a qualitative method was ideal. According to Denzin and Lincoln (2018), “Qualitative research consists of a set of interpretive, material practices that make the world visible” (p. 10). In addition, qualitative research “allows researchers to discern explicit and implicit processes in their data” (Charmaz & Thornberg, 2021, p. 308). The process of creating mediated learning experiences with homeschooled children who have special educational needs and disabilities is a topic in need of initial research to make it visible.

Quantitative tools are often not the best way to measure achievement in the homeschool context (Neuman & Guterman, 2016a). Neuman and Guterman (2016a) advocated utilizing qualitative research tools to evaluate the achievements of homeschoolers “with instruments adapted to their parents’ goals and teaching methods” (p. 5). Parental perception of educational success offers valuable insights; however, these insights are often overlooked or devalued (Murphy, 2014). Likewise, the importance of individualization in special education makes qualitative design an ideal methodology for studying educational practices conducive to individualization, such as a family’s choice to homeschool their child with SEND.

Grounded theory (GT) methods involve a “systematic approach to qualitative inquiry for the purpose of theory construction” (Charmaz, 2017b, pp. 1–2). While grounded theory methods can result in “a fully elaborated theory that covers all aspects, stages, consequences, and likelihood of a process or phenomenon,” they most often produce “greater conceptual clarity, or

a conceptual framework” that links concepts (Timonen et al., 2018, p. 4). In addition, “grounded theory can be used to modify existing theory or to expand on or uncover differences from what is already known” (DePoy & Gitlin, 2016, p. 107). Grounded theory methodology is valuable for examining topics from multiple angles, studying emerging areas in need of investigation, constructing theory, understanding or explaining processes, uncovering beliefs and meanings that underlie action, and illuminating the situations of people traditionally denied a voice (Corbin & Strauss, 2015; Charmaz & Thornberg, 2021). Qualitative research that constructs theory differs from descriptive qualitative research in that it provides an overarching framework that explains how and why things happen; description can then fill in the details of the theoretical structure once it is formed (Corbin & Strauss, 2015). In addition, grounded theorists study actions as well as meanings and show how the two are connected in order to make processes explicit (Charmaz & Thornberg, 2021). Grounded theory was, therefore, a well-suited method for an initial exploration of how families homeschooling learners with SEND create MLE.

Constructivist grounded theory (CGT), while following the inductive, open-ended, and iterative approach of the first version of GT described by Glaser and Strauss (1967), integrates the past 60 years of developments in qualitative inquiry and “treats data and theorizing about data as constructed, not discovered” (Charmaz, 2017b, p. 2). The resulting method is more flexible than the original version of GT, is situated within the social constructionist tradition, and allows for critical inquiry (Charmaz, 2017b). Unlike classical GT, which “asserts that theory emerges from data and is drawn out by the researcher in her role as a detached, yet reflexive scientific observer, CGT fully implicates the researcher in generating knowledge and theory” (Timonen et al., 2018, p. 3). Constructivists view researchers as part of the observed phenomenon, propelling reflexivity to the forefront and making it a crucial element of CGT

(Charmaz, 2017b). Because I, as a researcher, had already been fully immersed in the studied phenomena, CGT was an ideal methodology to both value and account for my experiences.

Researcher Positionality

I had been homeschooling my four older children for three years when I gave birth to a daughter with Down syndrome. Her birth and our family's subsequent adoption of three children with varying special needs changed the course of my life and expanded my value of the practice of homeschooling to recognize it as the ideal educational context for individualizing instruction. My older children have all exited our homeschool and have successfully navigated higher education and career environments, leaving me to focus on meeting the educational needs of my three youngest children: my daughter who has Down syndrome, autism spectrum disorder, intellectual disability, and a myriad of challenges associated with her diagnoses; my son who has autism spectrum disorder, Attention Deficit Hyperactivity Disorder (ADHD), language processing disorder, and specific learning disabilities resulting from a brain hemorrhage he suffered shortly after a premature birth; and his twin, my youngest daughter, who has cerebral palsy, intellectual disability, vision impairment, and language processing disorder also resulting from a severe brain hemorrhage. A desire to learn all I can about their challenges and their needs and to discover the ideal educational methods and settings through which to increase their potential led me to pursue this doctorate. Through my studies, I discovered the work of Reuven Feuerstein and began to wonder how homeschooling provided a context for the mediated learning experiences necessary to positively change the cognitive abilities of a child with neurodevelopmental disorders.

Interpretive Framework

This study was shaped by a social constructivist worldview that recognizes “the crucial role played by parents, teachers, peers and the community in defining the type of interaction occurring between children and their environments” (Kozulin, 2002, p. 8). In addition, a biblical worldview of disability grounded this study in the belief that every individual is fearfully and wonderfully made in the image of God, that creation groans as a result of the fall, and that God works all things together for good (*English Standard Version Bible*, 2011, Psalm 139:14; Genesis 1:27; Romans 8:22, 28). This biblical worldview incorporated the Jesus model, which views disability as a challenge that can be overcome rather than a crisis and recognizes that disability “is not a defining factor for anyone, for all of humanity is beautifully made in the image and likeness of God (whether with or without disability)” (Kebaneilwe, 2016, p. 102).

Philosophical Assumptions

Philosophy refers to the “use of abstract ideas and beliefs that inform our research” (Creswell & Poth, 2018, p. 16). Philosophical assumptions are “stances taken by the researcher that provide direction for the study” (Creswell & Poth, 2018, p. 326). This study was guided by the following ontological, epistemological, axiological, methodological, and rhetorical assumptions. These assumptions were applied through the study’s interpretive framework (Creswell & Poth, 2018).

Ontological Assumptions

Ontology is the study of “what it means for anything to be” (Knight, 2006, p. 8). A researcher’s ontological assumption is his or her view of reality (Creswell & Poth, 2018). The ontological assumption I brought to this study was that each individual in the study would bring a different perspective of the process being examined.

Epistemological Assumptions

Epistemology is a branch of philosophy that studies the nature, sources, and validity of knowledge by seeking to answer questions about what is true and how we know it is true (Knight, 2006). A researcher's epistemological assumption is how he or she knows reality (Creswell & Poth, 2018), and every methodological approach to research assumes an epistemology (Charmaz & Thornberg, 2021). Epistemological stances are "significant because they shape how researchers gather their data and whether they acknowledge their influence on these data and the subsequent analysis" (Charmaz & Thornberg, 2021, p. 311). My epistemological assumptions were that each participant would contribute subjective knowledge to the study and that my standpoint as the researcher was relevant to my understanding of reality.

Axiological Assumptions

Axiology seeks to answer questions about what is of value, which varies based on what a person or society believes to be good or preferable (Knight, 2006). Naturalistic researchers presuppose that "inquiry is inevitably grounded in the value systems that characterize the inquirer" and that "[v]alues cannot be set aside [or be] methodologically controlled or eliminated" but must instead be acknowledged (Guba & Lincoln, 1982, p. 242). A researcher's axiological assumption is the value-stance that he or she takes as an inquirer (Creswell & Poth, 2018). Researchers' assumptions "shape what we do during research and affect whether, when, how, and to what extent our standpoints change throughout the research process" (Charmaz, 2017b, p. 4). My axiological assumptions were that homeschooling is a valuable method for educating children with SEND and that mediated learning experiences can change an individual's cognitive framework and improve their cognitive function.

Methodological Assumptions

The procedures of qualitative methodology are inductive and are shaped by the researcher's experience collecting and analyzing the data (Creswell & Poth, 2018). A naturalistic inquirer utilizes both propositional and tacit knowledge, which allows for emergent research designs that "can unfold as the human instrument discovers new knowledge and reshapes inquiry to fit with the context" (Guba & Lincoln, 1982, p. 250). Methodological strategies are not neutral but "derive from value positions and contain deeply held assumptions" (Charmaz, 2017b, p. 4). The methodological assumptions of this study were that theory would emerge from the data collected in the study and that my assumptions would both shape the research process and change throughout it.

Rhetorical Assumptions

Qualitative research methods express the assumption that multiple socially-defined realities exist and that the immersion of the researcher in a setting results in persuasively rich description that allows the reader to "make sense" of the situation (Firestone, 1987, p. 16). My rhetorical assumption was that I had immersed myself in the participants' realities enough to provide readers of the study with sufficient detail to understand the phenomena. As a parent who has been homeschooling three children with SEND for the past ten years, I have experienced more immersion than would be available to most researchers.

Researcher's Role

As a follower of Christ, I have devoted my life to education both personally and professionally. I am an Advanced Placement (AP) English Language and Composition and Honors English instructor at an online school that serves primarily homeschooled students. I also edit and sometimes write for the Home Educators Association of Virginia's quarterly magazine,

The Home Educator. I have homeschooled my eight children (five biological and three adoptive) for the past seventeen years. I currently homeschool my three youngest children, who have diagnoses of Down syndrome, autism spectrum disorders, ADHD, vision impairment, cerebral palsy, intellectual disability, language disorder, and specific learning disability between them.

As the researcher in this study, I conducted the interviews of participants and compiled their timelines and statements of advice. As an advocate of homeschooling children with special needs, I brought to this study an assumption that all learners can grow their potential through mediation and that homeschooling is a positive educational context in which to pursue that growth. I analyzed the data with an understanding that “[r]eflexivity is crucial for conducting CGT [because] it merges with the foundations of inquiry and is inextricable from it” (Charmaz, 2017b, p. 5). To facilitate reflexivity, I kept a reflexive journal in which I recorded my perspectives throughout the study. In addition, I engaged in the essential analytic process of memo-writing, which is crucial to ensure quality in grounded theory, by constructing memos that “provide detailed records of the researchers’ thoughts, feelings and intuitive contemplations” that occur while interacting with data (Chun Tie et al., 2019, p. 4). Excerpts of the reflexive journal entries, theoretical memos, annotations, and other components of the reflective and analytical process can be found in Appendix I and were compiled from the variety of tools utilized to create them throughout the study: Evernote, Microsoft Word, NVivo, Canvas, and traditional notebooks and planners. Because of my experience homeschooling three children with SEND, I met the criteria for case participation, which gave me unique insight into and empathy for the task facing the study participants. This experience enabled me to understand and analyze the data on a deeper level.

Research Questions

The central research question in a qualitative study states the broadest question possible about the topic, while the sub-questions specify targeted areas of inquiry within the central question (Creswell & Poth, 2018). In grounded theory, the researcher starts with a broad query in a specific area and then collects data, utilizes constant comparison to analyze categories, and inductively develops, modifies, or expands a theory that explains the observations (DePoy & Gitlin, 2016). The following questions framed this study:

Central Research Question

How do Feuerstein's theories of structural cognitive modifiability and mediated learning experience extend to a homeschool context for learners with special educational needs and disabilities?

Sub-Question One

What motivates and reinforces family members' decisions to mediate the learning experiences of their children with SEND in the homeschool context?

Sub-Question Two

How do family members exhibit parameters of mediated learning experiences for their children with SEND in the homeschool context?

Sub-Question Three

How do family members foster modifiability in their children with SEND in the homeschool context?

Setting and Participants

Qualitative researchers "gather up-close information by talking directly to people and seeing them behave within their context" (Creswell & Poth, 2018, p. 43). As a result, they tend to

collect data in the location where the participants experience the phenomenon being studied rather than bringing them into a lab or sending out instruments for participants to complete (Creswell & Poth, 2018). Because theoretical saturation is ideal for CGT, the data dictates the sample size; however, the sample size can be approximated, and management of research design factors can assist the researcher in achieving saturation without an excess of participants (Thomson, 2011). The setting and participants of this CGT study are described in the sections that follow.

Setting

The setting of this study was not a fixed location but was instead the individual homeschool environments of the families participating. Homeschooling is not contained to a single physical location like public or private schools, and the practice often extends beyond the physical boundaries of the home to encompass co-op settings; therapy offices; public venues such as museums or libraries; and outdoor settings such as parks, beaches, farms, etc. (de Carvalho & Skipper, 2019; Firmin et al., 2019; Guterman & Neuman, 2017; Jolly & Matthews, 2020; Thomas, 2016). Because of this, aside from restricting the study to homeschooling families in the United States based on convenience, the specific physical setting was not one of the study bounds.

Participants

Although the sample size of a grounded theory study is “dictated by theoretical saturation and can only be assessed during the data collection process” (Thomson, 2011, p. 50), I planned on including a minimum of 10 families with the potential of multiple participants within a family. Grounded theory researchers employ purposeful theoretical sampling to develop or test categories late in the analytic process in order “to fill out the properties of their theoretical

categories, to refine relationships between categories, and to identify variation and difference in their emerging theories” (Charmaz & Bryant, 2010, p. 406). Participants were family members who met the study criteria of having exclusively homeschooled a child (age 7–21) with a special educational need or disability for a minimum of two years, and they were identified through purposive sampling methods. For the purpose of this study, a child with special educational needs and disabilities either had a medical diagnosis of a disability (e.g., Down syndrome, cerebral palsy, autism, vision impairment, etc.) or an educational diagnosis of a special need or disability (e.g., dyslexia, intellectual disability, specific learning disability, etc.). To qualify for participation in the study, a family had to have been exclusively homeschooling their child for at least two years. Although defining homeschooling has become an increasingly complex endeavor (Jolly & Matthews, 2020), in the context of this study, homeschooling was defined as a practice whereby parents choose to assume responsibility for educating their children rather than to enroll them in schools (Guterman & Neuman, 2017).

Convenience and snowball sampling were utilized to identify participants, but an attempt was made to initially select participants who were varied and diverse in age, gender, ethnicity, and diagnoses of the children being homeschooled so as to reflect multiple perspectives, as Creswell and Poth (2018) recommended. In GT research, “initial purposive sampling directs the collection and/or generation of data,” as “[r]esearchers purposively select participants and/or data sources that can answer the research question” (Chun Tie et al., 2019, p. 3). As the study progressed, theoretical sampling was employed to “identify and follow clues from the analysis, fill gaps, clarify uncertainties, check hunches and test interpretations” (Chun Tie et al., 2019, p. 3). As a homeschool parent of children with special needs, I had extensive connections to several nationwide homeschool and special needs support groups. I sought potential families through the

social media platforms of these groups as well as through personal emails to some of the leaders of the organizations, who were able to connect me with eligible participants. I attempted to secure some local families to allow for in-person interviews; however, the only geographical boundary I placed on participants was that they had to be located in the United States for convenience and general consistency in homeschooling requirements and practices.

The descriptive information obtained via the initial screening survey was notated using attribute coding, which is especially appropriate for qualitative studies that include multiple participants (Saldaña, 2021), and compiled in tabular form. There were ten participants, and the table below depicts their demographic data as compiled from information supplied in the screening survey and the opening question of the interview. Pseudonyms were chosen for all participants and their children after all interviews were completed. These pseudonyms are used in Table 1 and throughout the entire study.

Table 1

Participants

Participant Pseudonym	Age	Homeschooling State(s)	Consecutive Years Homeschooling Children with SEND	Level of Education	Ages of Homeschooled Children with SEND
Jordan	58	Virginia	13	Associate's degree	9, 15, 18
Grace	42	Japan California Virginia	12	Graduate degree	8, 9, 14, 14, 16
Katherine	47	Virginia	2	Graduate degree	10
Samantha	39	Pennsylvania	7	Bachelor's degree	13

Lenora	34	Georgia	2	Graduate degree	9
Paula	63	Ohio New York	2.5	Doctoral degree	14
Lisa	45	Illinois	2	Graduate degree	10
Laura	45	California	2	High school diploma or GED	8
Julia	42	Virginia	2.5	Bachelor's degree	9
Jennifer	44	Virginia	12	Graduate degree	13, 16

Procedures

Constructivist grounded theory employs strategies intended to gather “rich—detailed and full—data and place them in their relevant situational and social contexts” (Charmaz, 2014, p. 18). Data collection and analysis are iterative processes in which researchers move back and forth between gathering and analyzing data (Charmaz & Thornberg, 2021). This section outlines the procedures I employed to acquire and analyze the rich data necessary to reach the level of theoretical saturation required for constructive grounded study (Charmaz, 2014).

Permissions

The first step was to obtain Institutional Review Board (IRB) approval from Liberty University to conduct the study (see Appendix A). Once I had obtained Liberty’s IRB approval, I recruited participants via purposive sampling using the connections previously described. I emailed leaders of support groups and organizations that had access to potential participants and asked those leaders to either provide email addresses of possible participants or to pass along my email address so they could contact me directly. I obtained demographic information about

participants through a screening survey and sought the informed consent of each participant (see Appendix E). I gathered three forms of data from each participant: a timeline, an interview, and a statement of advice.

Recruitment Plan

I utilized purposive convenience and snowball sampling to identify at least 10 participants. Sample size for constructivist grounded theory is based on the concept of theoretical saturation, which “can be affected by the scope of the research question, the nature and sensitivity of the phenomena, and the ability, experience or knowledge of the researcher” (Thomson, 2011, p. 48). Each participant had been exclusively homeschooling a child (age 7–21) with a special educational need or disability for a minimum of two years. Through information obtained in the screening survey, I initially attempted to vary the pool by age, gender, and diagnoses of the children being homeschooled to reflect multiple perspectives as recommended by Creswell and Poth (2018). I later employed theoretical sampling, which is based on concepts derived from the data and is intended to “collect data from places, people, and events that will maximize opportunities to develop concepts in terms of their properties and dimensions, uncover variations, and identify relationships between concepts” (Corbin & Strauss, 2015).

These sampling methods were facilitated by contacts I have in both the homeschooling and special needs communities. Through my connections as a homeschool parent of children with SEND, I posted a social media recruitment message in several groups whose members included potential study participants. I exchanged email addresses with potential respondents via the social media platforms and then contacted respondents to the screening survey by email. I also directly emailed some families with whom I already had contact and knew to be eligible to participate and used snowball sampling to identify other possible participants. I used three

separate templates for each type of recruitment—social media, emails to leaders, and direct emails to potential participants (see Appendix B).

Data Collection Plan

Data for grounded theory can be collected by a variety of means, the most frequent being interviews and observations (Corbin & Strauss, 2015). I collected the data for this study using three primary methods: timelines, interviews, and statements of advice. I obtained the data in this order so that the timelines could guide the interview questions. Saving the statements of advice for last allowed the participants to reflect on their experiences after the interview process.

The timelines were created by asking each participant to recall significant positive and negative events within his or her child's life that had influenced the child's education or learning. Interviews were conducted via Zoom, except for one which was able to be conducted in person. The statements of advice were compiled by asking each participant to respond to a prompt. I utilized computer software, including Microsoft Word, Otter transcription software, and NVivo, to assist with organizing, transcribing, and analyzing the data.

Timelines

In the initial participant interview, each participant was asked to respond to the following prompt: *Please walk me through a timeline of the significant positive and negative events of your child's life that have influenced his or her education or learning.* If participants referenced any supporting documents as they constructed their timeline, they were invited to voluntarily share those via email or by providing hard copies. The content of the timeline was referenced in the interview and used to elicit responses from the participants. A sample timeline can be found in Appendix L.

Timeline Data Analysis Plan

Analysis of documents as texts can be valuable for theorizing, as their “form, content, purpose, accessibility, visibility, utility, legitimacy, and consequences can raise intriguing questions” (Charmaz, 2014, p. 45). Though the timelines served primarily as an elicitation tool to guide interview questions, they were also analyzed as part of the study data. They, along with any supporting documents submitted, were coded using initial process and In Vivo codes for each participant. Timelines for initial study participants were coded using line-by-line coding, “a heuristic device that leads the researcher to study each line of data to discern the action it indicates” (Charmaz & Bryant, 2010, p. 410). These initial process or In Vivo codes were used in conjunction with the initial codes from the other two data sources to discern relationships between codes and to see larger processes unfold (Charmaz & Bryant, 2010). The analysis, facilitated by memo-writing, led to the selection of focused codes as tentative categories. This constant comparison of new data with data obtained previously generated “increasingly more abstract concepts and theories through inductive processes,” which allowed for the continual refinement of concepts and theoretically relevant categories (Chun Tie et al., 2019, p. 4).

Through theoretical sampling, more data was obtained from subsequent participants in order “to illuminate categories or to find variation in the studied process” (Charmaz & Bryant, 2010, p. 410). Theoretical codes were then used to specify relationships between the categories developed in focused coding to theorize the data; however, they were only used when they fit the data and substantive analysis (Charmaz, 2014). This iterative process of “co-constructing rich data, constant comparison, focused coding, theoretical coding, memo-writing and theoretical sampling” led to the development of a “set of conceptual categories anchored in the data” (Charmaz & Thornberg, 2021, p. 318). Once theoretical saturation was reached and no new

insights emerged from the data, a grounded theory with theoretical completeness was constructed (Charmaz, 2014; Charmaz & Thornberg, 2021).

Individual Interviews

Grounded theorists typically employ intensive interviewing, which is “a gently-guided one-sided conversation that explores research participants’ perspective on their personal experience with the research topic” (Charmaz, 2014, p. 56). Unstructured interviews, which are not conducted according to a pre-structured guide but allow participants to talk freely about issues pertinent to them, “provide the richest source of data for theory building” (Corbin & Strauss, 2015, p. 38). Constructing an interview guide, however, can prepare a researcher for the actual interview by forcing him or her to grapple with “creating, revising, and fine-tuning interview questions” in order to grasp “how and when to ask them in conversation” (Charmaz, 2014, p. 63). The guide should serve as an introduction to the interview, but it “should not be used to structure the interview in a grounded study” (Corbin & Strauss, 2015, pp. 43–44). As initial data is collected and analyzed, a grounded theory researcher should remain open to the data by “being prepared to alter the research question(s) as a result of observations and insights gained when collecting data and avoiding ‘closed’ questions that imply certain types of answers and tend to close down rather than open up enquiry” (Timonen et al., 2018, p. 6). In constructivist grounded theory, “the interviewer’s approach and way of asking questions, listening and following up what the interviewee is telling are crucial in the co-construction and quality of data” because the interviews are considered to be “emergent interactions through a mutual exploration of the interviewee’s experiences and perspectives” (Charmaz & Thornberg, 2021, p. 317).

Intensive interviews were conducted with each participant using the following interview

guide:

Individual Interview Questions (Appendix G)

1. Please introduce yourself to me, as if we just met one another. (CRQ)
2. Please describe your child, including his or her diagnosis of special educational needs and disabilities and any other relevant diagnoses or conditions. (CRQ)
3. Please walk me through a timeline of the significant positive and negative events of your child's life that have influenced his or her education or learning. (CRQ)
4. Please describe the events that led you to homeschool your child. (CRQ)
5. Describe a typical homeschool day for your child with special educational needs and disabilities. (CRQ)
6. Describe a typical homeschool week for your child with special educational needs and disabilities. (CRQ)
7. Describe a typical homeschool year for your child with special educational needs and disabilities. (CRQ)
8. Describe the specific needs of your child with special educational needs and disabilities. (SQ1)
9. How has homeschooling helped you meet those needs? (SQ1)
10. Which individuals besides yourself contribute to your child's home education and how? (CRQ)
11. Describe the resources you use to work with your child with special educational needs and disabilities. (SQ2)
12. Describe what informs your curricular choices and instructional approach to homeschooling your child with special educational needs and disabilities. (SQ2)

13. Describe any experiences or aspects of homeschooling that have led you to seek out specific training or take other steps to grow as a teacher for your child. (SQ2)
14. Describe goals you have for your child with special educational needs and disabilities and how they are constructed. (SQ2)
15. How has homeschooling benefited your child? Provide a few concrete examples. (SQ1)
16. Describe a time that your child had an educational breakthrough in the homeschool environment. (SQ3)
17. Describe a time of frustration that you and/or your child experienced in the homeschool environment. (SQ3)
18. What changes have you noticed in your child since you began homeschooling him or her? (SQ3)
19. How would you describe the source of or catalyst for those changes? (SQ3)
20. Describe the ways you are intentional in homeschooling your child. (SQ2)
21. Describe how you focus your child's attention and elicit responses during instruction. (SQ2)
22. Describe the ways you attempt to extend content, ideas, or skills you are imparting to your child beyond the immediate lesson. (SQ2)
23. Describe the ways you attempt to help your child find meaning in his or her experiences. (SQ2)
24. How do you foster learning and academic or cognitive growth for your child with special educational needs and disabilities? (SQ3)
25. How do you believe the homeschool context positively affects your ability to teach your child and his or her capacity to learn? (SQ1)

26. If you had the opportunity to share with a parent considering homeschooling his or her child with special educational needs and disabilities, what insights, experiences, or advice would you share? (CRQ)
27. What else do you think would be important for me to know about homeschooling children with special educational needs and disabilities? (CRQ)
28. Is there anything else you would like to share? (CRQ)

My interview guide was reviewed by my committee chair, who has a PhD in Educational Psychology and Special Education, has taught advanced qualitative doctoral research courses for nine years, has 12 years of experience chairing dissertation committees, and has served as a Research Consultant and Methodologist for Liberty University's School of Education.

Individual Interview Data Analysis Plan

I transcribed the intensive interviews myself with the assistance of an online transcription software. Since there is “no transcription notation system capable of providing to the researcher a completely accurate and comprehensive narrative of the original performance,” I verified the interpretation of transcripts by returning to the recordings (Kowal & O’Connell, 2014, pp. 65–66). In addition, I included some descriptive information in the transcriptions to relay relevant features of the conversations since “features of delivery and ... the contexts in which interview data are co-constructed by speakers” may enrich findings (Roulston, 2014, p. 299). A sample interview transcript can be found in Appendix M.

Once each interview was completed, transcribed, and member-checked, it was first analyzed with line-by-line coding that named each word, line, or segment of data (Charmaz, 2014). Coding in this way “forces the researcher to take a fresh look at the data, compare fragments of these data, and ask analytic questions about them” to better understand their

participants' experiences and perspectives (Charmaz & Thornberg, 2021, p. 307). Initial coding is not necessarily formulaic but follows a guided first cycle, open-ended approach that can employ In Vivo coding or process coding (Saldaña, 2021). In Vivo codes are words or short phrases from the actual language of the participants themselves that help preserve the participants' meanings of their views and actions, while process codes use gerunds ("-ing" words) to connote observable activities or conceptual actions that can capture routines and rituals as well as forms of action-interaction (Saldaña, 2021). The initial codes applied in these early interviews allowed me to develop more pointed questions for subsequent interviews (Charmaz & Thornberg, 2021). Simultaneously, I engaged in memo-writing about the codes to record the questions I had about them and to make comparisons between fragments of data (Charmaz & Thornberg, 2021).

After the first cycle of coding was complete, I applied a second phase of focused codes that used "the most significant or frequent initial codes to sort, synthesize, integrate, and organize large amounts of data" (Charmaz, 2014, p. 113). The goal of focused coding as a second cycle analytic process was "to develop categories without distracted attention at this time to their properties and dimensions" (Saldaña, 2021, p. 304). Focused codes help to expedite analysis and streamline subsequent data collection to target responses to questions in the emerging analysis, which "gives the researcher more analytic power with fewer data" (Charmaz & Thornberg, 2021, p. 308). I developed focused codes by printing out NVivo codebooks at various points throughout the data analysis process and analyzing and categorizing the codes.

Constant comparative methods were used at each level of analysis first to find similarities and differences and later to make analytic sense of the material and to test ideas (Charmaz, 2014). Theoretical coding served as the final culminating stage of data analysis and was

employed to integrate and synthesize the categories derived from previous codes to produce a theory with explanatory power that is grounded in the data (Chun Tie et al., 2019). The final codes created through this process comprise the study's final NVivo codebook (see Appendix O). Theoretical saturation, in which no new insights emerge from theoretical sampling, culminated in the construction of a grounded theory with theoretical completeness (Charmaz, 2014; Charmaz & Thornberg, 2021).

Statements of Advice

A learning paradigm is a mindset that represents a way of thinking about the learning process; understanding that paradigm “sheds light on what teachers do, what students do, [and] how one creates the learning environment” (Wong, 2020, p. 168). To capture the participants' deepest beliefs about homeschooling their children with SEND and their underlying educational philosophies, I asked each primary homeschooling parent to respond to the following prompt: *If you had the opportunity to share with a parent considering homeschooling his or her child with special educational needs and disabilities, what insights, experiences, or advice would you share?*

The practice of home education is not just a choice about where education occurs but is also connected to broader aspects of the parental perception of education (Neuman & Guterman, 2016b). The purpose of the statement of advice was to obtain the equivalent of a philosophical statement from each participant without intimidating them by requesting something that may sound lofty and difficult to articulate. By framing the request in terms of a hypothetical individual, the hope was that the participants would share transparently and richly about their motivations for homeschooling, as well as about the highs and lows of the experience.

If a participant requested the opportunity to respond to the prompt in writing, the statement could also be sent electronically via email. One participant opted to respond in this way (see Appendix N). Computer-mediated data collection is cost- and time-efficient and offers greater flexibility to participants (Creswell & Poth, 2018). Electronic delivery of the statement either via Zoom interview or via email was less burdensome for participants and minimized the risk of loss during transmission. This method also facilitated accurate recording of the time and date of the data collection, which is necessary to effectively organize data and to improve reliability (Baxter & Jack, 2008).

Statements of Advice Data Analysis Plan

The statements of advice collected for this study were elicited responses that “involve[d] research participants in producing data in response to a researcher’s request” (Charmaz, 2014, p. 45). If the participant opted to respond in writing or to provide additional details via email, such documents could foster “frank disclosures that a person avoids telling an interviewer” and “allow participants to tell as much or little about themselves as they wish” (Charmaz, 2014, p. 47). Elicited texts are most effective “when participants have a stake in the addressed topics, experience in the relevant areas, view the questions as significant, and possess the writing skills to convey their views” (Charmaz, 2014, p. 48).

To maximize the value of the statements of advice, I utilized initial coding, including In Vivo and process codes, to analyze the statements provided by the participants. The initial codes were intended to “stick closely to the data” to better highlight actions in each segment of the data (Charmaz, 2014, p. 116). The goal was to preserve and honor the voices of the participants (Saldaña, 2021). Initial codes were “provisional, comparative, and grounded in the data,” and they were followed by the gathering of more data through theoretical sampling to “explore and

fill out [the initial] codes” (Charmaz, 2014). The focused codes that were applied to the intensive interviews incorporated the initial codes that had been applied to the statements of advice. Likewise, the subsequent theoretical coding that was facilitated by memo-writing also encompassed the codes and categories applied to the statements of advice. As constant comparative methods were utilized, the statements of advice were included as a point of comparison. After theoretical saturation had been reached and no new insights were emerging from the data, a grounded theory was constructed (Charmaz, 2014; Charmaz & Thornberg, 2021).

Data Synthesis

Data collection and data analysis take place simultaneously in grounded theory research, with each component informing the other through constant comparisons that result in initial and focused codes (Charmaz, 2014; Corbin & Strauss, 2015). I transcribed each interview using online software as soon as possible after completing it, typically the same day. I then listened to audio recordings of each interview to verify the accuracy of the transcription, and I extracted the timelines and statements of advice so that they could be coded separately. I continued to conduct and transcribe additional interviews while coding the ones that were complete.

Initial codes lead to focused codes through theoretical sampling (Charmaz, 2014; Charmaz & Thornberg, 2021). Throughout the process, researchers write memos that give them an intellectual space to investigate their codes and categories and to explore possible relationships between them to facilitate theoretical sampling (Thornberg & Charmaz, 2014). I used NVivo to conduct line-by-line initial coding, applying mainly In Vivo and process codes. As I went through this process, I wrote memos in a variety of ways—some as notes during the

actual interviews, some as margin notes as I verified transcripts, some as annotations in NVivo, and others in written and online journals I kept throughout the research process.

Theoretical codes are applied to the data rather than emerging from them (Charmaz, 2014). Theoretical codes serve as analytical tools used to capture relationships between categories in the data and integrate them into a grounded theory; however, they “must work, have relevance, and fit the data and generated and refined categories” (Thornberg & Charmaz, 2014, p. 161). When developed properly, a theoretical code “functions like an umbrella that covers and accounts for all other codes and categories formulated thus far” (Saldaña, 2021, p. 314). After completing the initial and focused coding of the first few timelines, interviews, and statements of advice, I used theoretical coding to theorize the data and focused codes, specify possible relationships between categories developed during focused coding, and impose a framework on the analysis (Charmaz, 2014). I used both Feuerstein’s parameters and patterns in the data to develop theoretical codes and began applying them to future interviews, along with additional In Vivo codes. I regularly printed out the NVivo codebooks, which I used to identify theoretical codes and to organize initial codes within them. I used code queries to test and refine the theoretical codes and to select In Vivo quotations to support the themes and subthemes (see Appendix P).

The primary theme of the research, also known as its central or core category, “identifies the major conflict, problem, issue, or concern to participants” and provides the theoretical explanation for the phenomenon around which all categories and concepts become systematically integrated (Saldaña, 2021, p. 314). Ultimately, the goal of data analysis in a constructivist grounded theory study is to generate theory either by modifying existing theory, expanding on or uncovering differences from what is already known, or addressing current

theory from a new and inductive perspective (DePoy & Gitlin, 2016). Theoretical sampling eventually leads to theoretical saturation, in which “gathering more data about a theoretical category reveals no new properties nor yields any further theoretical insights about the emerging grounded theory” (Charmaz, 2014, p. 345).

Diagramming provides “a visual representation of categories and their relationships” and can be useful at all stages of analysis (Charmaz, 2014, p. 218). In some instances, diagramming leads to the development of a conceptual map that locates concepts and “directs movement between them” and can be used both to form and report conceptual analysis (Charmaz, 2014, p. 219). The emerging theory focuses on a concept or abstract idea that accounts for and is constructed from the inductive data, but it can also result in a visual representation of the categories and their relationships (Charmaz, 2014). In this study, the expanded theory that was constructed included a conceptual model that visually depicts the process of the phenomena studied. Three sketches led to the final model of mediated learning experience for learners with SEND in a homeschool context (see Appendix J).

Trustworthiness

Naturalistic inquiry differs in form and intent from rationalistic inquiry, in which criteria for trustworthiness are typically addressed by the constructs of internal validity, external validity, reliability, and objectivity (Guba & Lincoln, 1982). However, Guba and Lincoln (1982) suggested that the naturalist is equally obligated to attend to the four questions that underlie those constructs: how to establish confidence in the truth value of a specific study’s findings, how to determine the degree of applicability of those findings to other contexts, how to determine the likelihood of consistent findings in repeated studies, and how to establish a study’s neutrality. The naturalistic equivalents that Guba and Lincoln (1982) proposed for the

rationalistic constructs for judging trustworthiness are credibility, transferability, dependability, and confirmability. The trustworthiness of this study was established by taking intentional steps to ensure its credibility, dependability, confirmability, and transferability as outlined in the following sections.

Credibility

Researchers test the credibility of their findings and interpretations to establish their truth value (Guba, 1981). Truth value answers the question: “How can one establish confidence in the ‘truth’ of the findings of a particular inquiry for the respondents with which and the context in which the inquiry was carried out?” (Guba & Lincoln, 1982, p. 246). Methods of establishing credibility include prolonged engagement at a site, persistent observation, peer debriefing, triangulation, member checks, and the establishment of structural corroboration and referential adequacy (Guba, 1981).

Credibility is one of the four main constructivist grounded theory study criteria identified by Charmaz (2014). Credibility is established through “having sufficient relevant data for asking incisive questions about the data, making systematic comparisons through the research process, and developing a thorough analysis” (Charmaz & Thornberg, 2021, p. 315). In addition, credibility in constructivist grounded theory requires strong reflexivity from the researcher throughout the entire research process, which includes explicating his or her assumptions and gaining awareness of how hidden beliefs can enter the research process (Charmaz & Thornberg, 2021). I maintained a reflexive journal throughout the duration of the study in order to ensure its credibility (see Appendix I).

Because I already had intense exposure to the phenomenon of homeschooling learners with SEND, having participated in the phenomenon myself for ten years, I did not need

additional prolonged exposure to the phenomenon. To provide enough detail for readers to assess the credibility of my work, I (a) clearly defined the research question and sub-questions that guided my study; (b) chose the study design—constructivist grounded theory—that best fit my research questions; (c) employed purposeful sampling strategies as outlined above; (d) systematically collected and managed my data; and (e) analyzed my data according to reputable guidelines (Baxter & Jack, 2008). I collected data from three sources to allow for corroboration of codes, and I viewed and explored the phenomena from multiple perspectives. I also utilized reflection, including the maintenance of reflexive memos, and peer examination of the data to establish credibility (Baxter & Jack, 2008). Finally, I employed multiple iterative coding methods in which I collected the data, coded it immediately, collected more data with refined questions, and constantly compared data to identify a core category that resulted in a theoretical explanation of the phenomenon (Saldaña, 2021). I also integrated member checking into my study by offering all participants the opportunity to review transcripts and chapter excerpts for accuracy, as well as by explaining major categories to selected participants and inquiring “whether and to what extent these categories fit each participant’s experience” (Charmaz, 2014, p. 210). A log of participant contacts with the dates of member checking opportunities can be found in Appendix K.

Transferability

While generalizations about human behavior are unlikely to be true over extended periods of time or across substantial contexts, some degree of transferability is possible (Guba & Lincoln, 1982). The naturalistic researcher should be “concerned first with developing an adequate ideographic statement about the situation he or she is studying, accompanied by sufficient ‘thick description’ to make judgments about transferability” (Guba & Lincoln, 1982, p.

241). Methods of promoting transferability include using theoretical/purposive sampling, collecting thick descriptive data, and developing thick description of the context once the study is complete (Guba, 1981). This study revealed understandings that are hopefully transferable to other families homeschooling learners with SEND, not in that they will mirror one another but in that the theory generated will be applicable and beneficial to other families undertaking the same endeavor.

Dependability

Because naturalistic study designs are intentionally emergent, an exact replication of a study is unlikely (Guba & Lincoln, 1982). Dependability is defined as “*stability* after discounting such conscious and unpredictable (but rational and logical) changes” (Guba & Lincoln, 1982, p. 247). Two steps that parallel the replication steps employed by rationalistic researchers are (a) utilizing overlap methods to compensate for the weaknesses of one method by using another one in tandem, and (b) employing stepwise replication in which the original research team is divided in half to work with data sources that have also been divided in half, with the two teams communicating with each other at important milestones (Guba, 1981). In addition, a naturalistic researcher can establish an audit trail or arrange for a dependability audit by an external auditor that deals primarily with the inquiry processes (Guba, 1981).

Confirmability

Confirmability is a degree of neutrality, or the extent to which the findings of a study are shaped by the respondents and not by the researcher’s bias, motivation, or interest (Lincoln & Guba, 1985). Techniques for establishing confirmability include (a) confirmability audits, (b) audit trails, (c) triangulation, and (d) reflexivity.

Qualitative confirmability is sought above quantitative agreement, with the onus of objectivity resting on the data, not the inquirer (Guba & Lincoln, 1982). During a study, the naturalistic researcher can utilize triangulation by collecting data from a variety of sources using a variety of methods, and he or she can practice reflexivity by intentionally revealing his or her assumptions and by keeping a reflexive journal (Guba, 1981). After the study, the researcher can arrange for a confirmability audit to certify that data exists to support each interpretation and that the interpretations are consistent with available data (Guba, 1981). I sought to establish rapport with participants and to collect and understand multiple perspectives to maximize the study's confirmability. I kept a researcher's reflexive journal (see Appendix I) in which I recorded my preconceptions as I engaged in the iterative processes of collecting and coding data and memo-writing throughout the study (Charmaz, 2014).

Ethical Considerations

Ethical considerations are paramount throughout the entirety of the research process, not just during data collection, and must be weighed at every stage, from the design and planning phase to the reporting of findings (Creswell & Poth, 2018). I received IRB approval prior to conducting the study, but even before that, I consulted my committee chair and members, who all have extensive research experience. When recruiting participants, I provided a carefully drafted informed consent form (see Appendix E) that clearly established the purpose of the study and explained how confidentiality would be maintained. Pseudonyms were utilized throughout the study.

Online data collection, such as the screening survey and any follow-up communication I obtained from participants, required careful consideration of privacy protection (Creswell & Poth, 2018). I collected and stored my data with the primary objective of protecting the

participants' identities and maintaining confidentiality. I utilized password-protected devices to store all digital data and kept all physical data in a locked file box. I will delete all data one year after the study's publication in Liberty's dissertation database (or after whatever duration my committee deems reasonable). I made every effort to be impartial in my data analysis and to respect the privacy of the participants. I resisted the temptation to create a "Pollyanna portrait of the issues" and only disclose positive results (Creswell & Poth, 2018, p. 57). I reported my data with total transparency and absolute integrity, using "clear, straightforward, appropriate language" (Creswell & Poth, 2018, p. 56).

Summary

This constructivist grounded theory study was carefully designed to pursue an ethical, professional, and effective understanding of how Feuerstein et al.'s (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience extend to a homeschool context for learners with special educational needs and disabilities. Three sources of data—timelines, interviews, and statements of advice—were collected and analyzed using systematic coding methods designed for grounded theory. Parents who perceive that their children's special educational needs and disabilities are not being met in public or private school often consider homeschooling (Morse & Bell, 2018). This study extended Feuerstein's theories to the homeschool context and created a model that explains how families create mediated learning experiences for learners with SEND in a homeschool context, as well as how this educational option benefits children with SEND.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this study was to extend Feuerstein et al.'s (2006, 2010, 2015) theories by constructing a grounded theory that explains how families create mediated learning experiences for learners with special educational needs and disabilities in a homeschool context. This chapter introduces the ten study participants, both collectively and through individual narratives, and describes in detail the extended theory that emerged from the study, including depicting it in a visual model. After that, it discusses the themes that emerged in the construction of the extended theory and model and provides supporting In Vivo quotations from each of the study participants. Finally, the chapter concludes by providing responses to each of the four research questions that guided the study.

Participants

The following sections provide portraits of each participant's unique experience homeschooling a learner or multiple learners with special educational needs and disabilities. Once the study criteria were expanded and a token of appreciation was added, the recruitment plan outlined in Chapter Three was successful in securing participants. Each participant and any named children were referenced with pseudonyms throughout the entire study.

Jordan

Jordan is a veteran homeschool mom who began homeschooling when her older, now-adult children were young. In discussing her timeline, she shared that she was adamantly against homeschooling until God challenged her "very specifically on the question of homeschooling." After making the decision to homeschool her oldest of nine children, she "has carried through with all the kids" and hasn't "felt that He's called [them] to do anything different." Jordan's

older six children have graduated from homeschooling, and her remaining three children, all of whom were adopted, have special educational needs and disabilities.

Jordan's eighteen-year-old son has Duchenne's Muscular Dystrophy, fetal alcohol syndrome, and intellectual disabilities. Her fifteen-year-old daughter has cerebral palsy, post-traumatic stress disorder (PTSD), depression, anxiety, and non-epileptic seizures. Her youngest child has late infantile onset metachromatic leukodystrophy which, among other things, has resulted in intellectual disability, quadriplegia, tube feeding, seizures, and autonomic storming. Despite the challenges of homeschooling multiple children with multiple disabilities, Jordan has never seriously questioned the decision to homeschool her children with SEND. In our interview, she described a recent bone clinic appointment in which the provider expressed surprise that, despite severe osteoporosis, her son has had no broken bones. Jordan explained:

He only has people around him who really care about him. He doesn't have a hired aide at school. He's not being asked to do things because people don't understand his diagnosis. People know what they can and can't do because family's always around. That has meant that he hasn't had injuries that a lot of boys with Duchennes have to deal with.

Jordan described homeschooling as a "lifestyle" in which she tries "to look for learning opportunities pretty much in everything." In homeschooling children with SEND, Jordan thinks it is important for people to know that "[t]here's no target. Once you walk through that doorway of special needs, it is so vast and so huge." Each category of special needs "has such a huge range of potential or not potential and possibilities and difficulties; it's impossible to quantify." As an adoptive mom homeschooling learners with special needs, Jordan has felt additional pressure since that combination is often "viewed as the ultimate sacrifice." She elaborated: "You

[are] held out as some kind of hero, and that's unfortunate because that means there is a lot of pressure and that there are a lot of assumptions."

Grace

Grace has been homeschooling for 12 years. She is a military wife, and her family has been stationed in California (twice), Japan, and Virginia during their homeschooling years. All of her children have special educational needs or disabilities. Her oldest three children are biological—a 16-year-old daughter with auditory processing disorder, attention-deficit/hyperactivity disorder (ADHD), chronic fatigue syndrome, Ehlers-Danlos syndrome (EDS), and postural orthostatic tachycardia syndrome (POTS); and twin 14-year-old sons with autism, ADHD, dyslexia, dyscalculia, and dysgraphia. Her two youngest children were adopted from Japan. Her nine-year-old son has Down syndrome, ADHD, and oppositional defiance disorder (ODD), and though untested, Grace feels "like he's got the most severe dyslexia of anyone [she's] ever known." Her youngest daughter is eight years old and has Down syndrome, autism, and "a pretty significant vision impairment" caused by glaucoma that has left her legally blind in her left eye with uncertainty as to whether she will "always have her vision."

Grace began homeschooling as a response to lack of flexibility in the military school. Her oldest daughter was about to begin kindergarten in California when their family received orders to Japan. The difference in school calendars meant that this "bright kid" would have to wait another entire year to begin kindergarten. In explaining her timeline, Grace shared that she expected to homeschool only for "a year or two," but her family "fell in love with it and never looked back." When her twins reached school age, Grace "had to completely readjust how [she] was doing homeschooling." With her oldest daughter, "everything was a breeze." But with her twins, "everything was not easy, and it was just kind of shocking to [her]." After a few years, she

“realized that [the] twins were not at the same level, maybe around the age of eight or nine, that other kids were.” That readjustment “took some time,” and “homeschool now looks very different than before.”

Homeschooling her two youngest children brought new complexities to Grace’s homeschool experience as well as “one of [their] most startling incidents with the school system.” In her timeline, she recalled that she had “gotten a lot of pressure to put [her] children with Down syndrome into public school, even though [she] successfully ha[s] homeschooled the other kids with their issues.” She was told by various people that “you can’t do it” with children with Down syndrome. She visited the school where her youngest children would be placed and “could not believe that that’s what they wanted [her] children to get put into.” Although three or four teachers were in the room, “none of them were interacting with the children at all.” Grace found that the classroom “felt like a sterile environment. It didn’t feel like an environment that was conducive to learning and growing and talking.” Her disappointment in that experience led her to inform the district that they were “going to keep homeschooling.” She was startled to return from a vacation to paperwork notifying her that the school district was suing them: “They brought us to court saying that we were not providing the least restrictive environment for our children.” As a result of that ordeal, their family briefly enrolled the two youngest children in a private preschool at the expense of the school district. However, they eventually brought the children back home because “they just kept getting sick ... Their teachers were very nice people, but they just couldn’t understand the needs that the kids have.”

Grace reflected in our interview, “I’ve really learned a lot [over the years], and I wish I could go back with them—to be more play-based.” She described her homeschool now as a balance of rigor, with a Great Books Tutorial program for her oldest three children and multiple

therapies for her youngest children, combined with a “family culture” of reading and “a lot of nature-based play,” which she has found “calms them and helps them learn.” Unfortunately, during a local hike in December 2021 at a park they often visit to throw rocks, Grace’s youngest daughter accidentally hit her in the head with a rock. Grace suffered a concussion that led to a traumatic brain injury (TBI). Her recovery has been “horrendous,” and she is “just not healing the way they expected [her] to,” leaving her with “terrible headaches” and difficulty “holding [her] train of thought.” Despite her own suffering, Grace acknowledged that “it’s been good for [their] family because everyone’s had to learn new responsibilities to help [her] out and to help the little kids still get their sensory needs met.”

Katherine

Katherine is a Naval Academy graduate who homeschools her three daughters—ages ten, eight, and six. Her husband currently serves in the military, but their family has lived in the same location for seven years. Her oldest daughter was diagnosed with Down syndrome at birth and has dealt with a myriad of conditions commonly associated with DS, including hypothyroidism, hypotonia, and a congenital heart defect that healed without surgery, leaving her with only a murmur. In describing her daughter, Katherine shared that she likes to tell people, “If you’ve met one person with Down syndrome, you’ve met one person with Down syndrome ... they’re not all the same ... they all have their strengths, and they all have their areas that they’re trying to improve upon, just like we do.”

Even before homeschooling her daughter, Katherine acknowledged that she “was basically the big advocate and center point for making sure [her daughter was] progressing along [not only] a good developmental path, but [a good] learning path.” As Katherine shared in her timeline, repeated incidents of “not enough attention,” “letting her get by with things,” not

“being supported for what she needed fully,” and not addressing goals led her daughter to regress and prompted Katherine to homeschool.

In her statement of advice, Katherine shared that she found the rigidity of the “industrial education mindset” frustrating and too rigid for her daughter’s needs:

No one’s in rows and columns and seats anymore, but that’s how the learning is. The learning is: here’s the material, here’s the teacher’s guide, and I’ll have some ways of teaching it differently, but mostly, these kids have to do these things, and it kind of has to be done this way, and it has to be standard, and it has to be tested ... I think that works a lot of times, but the rigidity with which they can’t be flexible for my daughter’s learning is very frustrating to me.

Even though she acknowledged that homeschooling was “scary” and “overwhelming” at first, Katherine discovered that “the freedom that [she] got to witness the potential that [her] child has pretty much put all those fears in the back seat.” Now, when she thinks about having her daughter go back to school, “it’s the opposite. I have more fear putting her back in school than I do homeschooling her.”

Samantha

Samantha married her high school sweetheart and has lived in Pennsylvania most of her life. She has a 13-year-old son with high functioning autism and ADHD and a ten-year-old daughter. In her timeline, Samantha shared that she has been homeschooling her son for seven years, though she “would say that [she] started teaching him at day one.” At five months of age, she began teaching her son baby sign language. He eventually acquired over 300 signs; however, “he wasn’t really speaking at all.” Despite resistance from both of his grandmothers, around the same time that her son was diagnosed, his pediatrician affirmed Samantha’s choice to equip her

son with a means of communication. The pediatrician told Samantha that “he [was] learning how communication works at a younger age than some kids” and predicted that, by the time he turned four, she would “see him using communication in a different way.” Samantha reflected, “I may have been giving my son his only way to communicate when he was really struggling through that.” Her early teaching efforts had lasting impact: “when people talk about what someone who has autism, like what their strength is, I would say my son, it’s always been vocabulary, words, languages.”

Samantha credits her husband with the idea to homeschool their children. As she described in her timeline, when he first presented the idea to her when their son was six months old, she “wrote him off right away” and said, “I’m not doing that. That’s crazy!” Samantha intended to stay home with her children for a little while and then return to her job as a teacher. When pressed, her husband shared that he had struggled in school with being teased and getting into trouble. He told Samantha, “I don’t want that for our kids. I want them to be at school and love school and have a great experience and love learning.” After multiple conversations, Samantha began researching and realized that homeschooling seemed like “what [she] thought it was going to be like to be a teacher,” as opposed to “get through this and get through that and get to the test and pass the this and, you know, standardized test that.”

Lenora

Lenora was a first grade teacher before she began homeschooling her two sons, ages six and nine. As she shared in her timeline, her oldest son was diagnosed with ADHD at age five after she and her husband noticed hyperactivity and general difficulty with academics and behavior compliance with “adult demands” in a classroom setting. Despite medication, disciplinary efforts, and being held back to repeat kindergarten, her son continued to struggle

academically and behaviorally, frustrating both his teacher and Lenora, who reported calling her husband “multiple times a week just crying, like, this isn’t going to work.”

Lenora and her husband had recently decided that she would homeschool their son and that they just needed a plan to get through the last half of the school year when the pandemic “released [them] from that really difficult situation” and enabled them to “come home.” They “still had to finish out the school year virtually,” but they “didn’t have to deal with that classroom difficulty.” The next school year, they had their son re-evaluated because Lenora “was certain there had to be some sort of underlying learning disabilities or differences.” Her son was diagnosed with level one autism and specific learning disabilities in reading, writing, and math.

When asked to provide a statement of advice she would give another parent considering homeschooling their child with SEND, Lenora said she “would encourage them to do it” because “they can individualize it to what they need” and because “there’s so much freedom in homeschool.” While she acknowledged that some families have financial restrictions or are unable to work from home like she can, she said that she would encourage them to research the options because there is a lot of information and help to be found. Lenora believes that

There’s no right way to homeschool; there’s no right way to do education. It is just whatever is best for your family and however your child learns. There are so many different options out there to support that, whatever issue you have ... as the parent, you’re the one who knows your child best. And so you are your child’s best teacher.

Paula

Paula is a single parent to a 14-year-old daughter she adopted from China. She shared in her timeline that the first three or four years of her daughter’s life are a mystery. Paula only knows that her daughter spent about five years in an orphanage before she was adopted. Her

main diagnoses are cerebral palsy, microcephaly, hearing loss, and other accompanying physical disabilities. However, Paula also suspects that some of her daughter's delays initiated with "things that she missed and brain development that didn't quite happen because she was in a particular situation and not in what you could call a desirable or normal one." Despite the missing information and development and the known disabilities, Paula describes her daughter as "crackerjack smart, just crackerjack smart." She described her daughter's care in the orphanage as "minimal" but "reasonable," sharing that, when she adopted her, "she really could not hold a pencil." The orphanage exposed her to "a tiny amount of math and a tiny amount of Chinese calligraphy," but Paula acknowledged that she is "not sure if they knew how smart she was."

Paula teaches online music courses at a Midwest university but is living temporarily in the Northeast to take care of her elderly mother. She is also a practicing harpist and cathedral singer and runs a children's program that takes harps into classrooms. In addition, she works in schools with an organization that brings the arts to children with special needs. When she was teaching her college courses face-to-face, Paula "couldn't manage homeschooling." However, she grew increasingly frustrated with the public school, citing busy work, hours of homework, being pulled out of the classroom, and making it "impossible for kids to have relationships with other kids" as motivating factors. Paula described manipulating her university teaching situation to allow her to homeschool her daughter. As a 63-year-old parent, Paula confided in our interview:

There have been times when I actually cried because I thought I should have left her in China so she could be adopted by a family of many siblings who would look after her later because my biggest concern right now is what happens when I'm gone.

However, Paula is encouraged by her family's longevity and has been taking steps to provide for her daughter's future. She commented, "I adopted her. We adopted each other, I like to say." In a follow-up email, Paula expressed amazement at how her daughter genuinely enjoys many things that her mom enjoys, reflecting that "while [they] were born on opposite sides of the planet 49 years apart, it seems like [they] were made for each other."

Lisa

Lisa homeschools her twice-exceptional children—a ten-year-old gifted son, who has level one autism and dysgraphia, and his eight-year-old sister, who is also gifted and was recently diagnosed with ADHD. Her son attended a half-day Catholic kindergarten and a public school for first through third grade. In her timeline, Lisa shared that she had repeatedly approached his teachers about concerns with his handwriting, social interactions, "unique tendencies," and meltdowns. When his school went virtual in March of his third-grade year, she saw his struggles firsthand and decided "to keep him home and ... to get him a private neuro-psych eval." The evaluation confirmed Lisa's concerns and identified the giftedness, autism, and dysgraphia that "this supposedly excellent school district" had failed to see. Lisa noted that this oversight occurred even though her son had a mother with "a degree in psychology and education ... who stayed home with him full-time" and who constantly questioned the behaviors and challenges she was seeing in her son.

Lisa will begin a doctoral program this fall. Though she has been discouraged from continuing to homeschool, she is still weighing the decision because homeschooling "works really well for [them] and [is] super flexible." Despite feeling like she is "largely on her own," in her statement of advice, Lisa expressed gratitude for her homeschooling experience thus far:

The rewarding thing for me is, especially in these COVID times, that our kids are so happy and relaxed and healthy and not fearful. They're content to learn. They have an awesome relationship with each other, which they wouldn't have this much time together if they were at school all day. And we just get to spend so much family time together. If we start next year and we don't homeschool anymore, I will still be so, so grateful that we had these two years with them, all this time to do what they're interested in, to be together. Like it's invaluable, I feel like—so worth it. Even if we don't do another day of homeschooling, I would say like, I would never have traded that time with them.

Laura

Laura is an adoptive mom to an eight-year-old daughter with spina bifida, who she described as “a healthy, happy kiddo” with a magnetism that draws people in: “people fall in love with her ... they all just fall hook, line, and sinker for everything she says and does.” Laura and her wife have been married for 14 years and live on the West Coast. In our interview, she acknowledged that “disability is a big word because it means a lot of different things,” but despite the differences, “in the Venn diagram, we're all sort of overlapping at some degree.”

Her daughter had myelomeningocele at birth, which meant that her spine grew outside of her body, forming an open wound that needed surgery the day she was born. Because she had no sac, she is a full-time wheelchair user and has “no feeling, sensation, [or] muscle movement ... past her hips.” She will likely need tethered cord surgery at some point in the next two years, which will result in even less sensation than she has now. Despite this, “she has full trunk control, which is huge,” and full arm control. Laura described her daughter as “very fit” and “able to do most things herself,” including catheterizing herself starting at age five-and-a-half

and working toward full catheterization. Laura shared, “Independence is a big thing, so we’ve been pushing that since day one and it’s been helpful.”

Her daughter needs bowel management every day. In our interview, Laura credited moms on social media for encouraging her to start that process young:

We never would have started the bowel management program at four if I didn’t have social media. Urology wasn’t worried about it. And all the moms on social media were like, “no, no, no, no, no, you need to be doing this as of the time that they would normally be potty training.”

That encouragement led her to advocate with her daughter’s urology team, who responded positively even though they had not suggested an early start. Laura reflected, “Moms know best. That’s all there is to it. They’re my greatest resource for those things that we do.”

Laura “never meant to be a stay-at-home mom” and “never meant to homeschool.” She chose homeschooling for her daughter to relieve pressure: “[At] the school she was in, they were all going to Harvard and they were five. There just was no need to be pushing as hard.” She has found that homeschooling “makes [their] lives easier medically speaking” as well. In her statement of advice, Laura recalled that she “was never thrilled about having to do it” and “was very scared that [homeschooling] was a terrible idea,” but she “knew [her daughter] needed it.” When asked about her feelings toward homeschooling two years into the experience, Laura replied, “it’s absolutely magic ... and I hope that it stays magic for a very long time.”

Julia

Julia lives in southeast Virginia where she homeschools her three children—nine-year-old twin daughters and a five-year-old son. Her husband is an engineer in the Navy Reserves, and she was an English major in college. In her timeline, Julia shared that, during the birth of her

twin daughters, one lost oxygen, possibly as a result of clotting that began in utero, and experienced a brain injury called hypoxic ischemic encephalopathy (HIE), as well as clotting that devastated her kidneys and affected her liver. Their family lived in Northern Virginia at the time, and her daughter was barely alive enough to be transported to Children's National Hospital in Washington, D.C. Upon arrival there, she underwent a cooling procedure in which she was placed in a hypothermic state for about three days to "try to prevent the brain swelling that causes seizures and to try to minimize the impact of the brain injury." Unbelievably, the procedure worked, and Julia's daughter was put on peritoneal dialysis and endured a 71-day neonatal intensive care unit (NICU) stay. Julia shared that, during her daughter's NICU stay, "there was more than one occasion when they said, 'We don't know if she's gonna live through the next 12 hours.'"

Miraculously, Julia's daughter had no seizures and was discharged from the NICU with a feeding tube and round-the-clock medications, but not on dialysis. Near the end of her NICU stay, an MRI showed that "the location of her injury was most likely to cause ADHD or issues with executive function." Julia explained that the diagnosis felt like "nothing" given that they previously hadn't known "if she would walk or talk or have cerebral palsy or how severely she would be affected." She was very fragile, however, suffering from recurrent pneumonia and eventually being diagnosed with bronchiectasis from lung damage she sustained on the ventilator and oscillator in the NICU. Julia commented, "the lung damage is the price that we paid to save her life, to bring her back." Her daughter would also need a kidney transplant because of the significant insult to her kidneys, but "it was so severe that nobody thought that she was going to make it to be physically big enough to accommodate a transplant ... because they only transplant

adult organs, so you have to be 10 kilograms ... before you can get a transplant. But she did. She got bigger; she got bigger; and then she was two and she was three and then she was four.”

Finally, in March 2020, “when she was seven, it was time for a transplant.” From the time she was two years old, her family had known that Julia’s husband was a match and would be their daughter’s kidney donor. Julia recalled, “We knew we were going to do a pre-emptive transplant. ... We had planned; we had it figured out. So when the pandemic struck, because here we have a child who has late-stage kidney disease and lung disease, I pulled them from school like a week before the governor shut it down.” Because the transplant surgery was considered elective, it was pushed back to the end of August 2020. Because her daughter was immunosuppressed after the transplant, Julia has continued to homeschool all three of her children since then.

Jennifer

Jennifer is a trained speech pathologist who homeschools her 16-year-old twin daughters and her 13-year-old son. In her timeline, she recalled that “[their] plan was always to homeschool all the way through to the end of high school if possible.” Her husband works outside the home in management, and Jennifer works as a fitness instructor at the local YMCA. Around second grade, Jennifer noticed that one of her daughters “had something going on,” and testing revealed that she had “a pure dyslexia.” Her twin “shows symptoms of perhaps being an ADHD learner” and has “a lot of disorganization, the frontal lobe type, executive function type of thing,” that requires scaffolding. She also “definitely has dysgraphia, but that’s more of a motor dysgraphia.” At the beginning of elementary school, Jennifer’s son also began to “show symptoms of difficulty with reading and writing,” and they “discovered that he also has dyslexia,” which is “complicated by ADHD,” as well as dysgraphia.

In her statement of advice, Jennifer shared that she often hears other parents say they could not homeschool their child, with or without disability, because they “aren’t patient enough.” She responds by saying that that is not her skill set either, or that of many homeschoolers she knows. Jennifer believes that “whether your child is disabled or not, it takes drive” to homeschool. She believes a parent is a child’s best advocate “because you know your child’s strengths and weaknesses,” and through homeschooling, “you’re gonna get to know your child on a deeper level.” She reassures parents that “you can see the challenges that they have, and I promise you, you will meet them.” She explained that parents simply have to be flexible and be willing to seek the resources they need.

Results

The central finding of this study was a model showing how Feuerstein et al.’s (2006, 2010, 2015) theory of mediated learning experience extends to the homeschool context for learners with special educational needs and disabilities. This section explains both the expanded theory and accompanying model and discusses the themes that emerged from the data, drawing on In Vivo quotations for support. It concludes by presenting responses to each of the four research questions that guided the study.

Explanation of Model

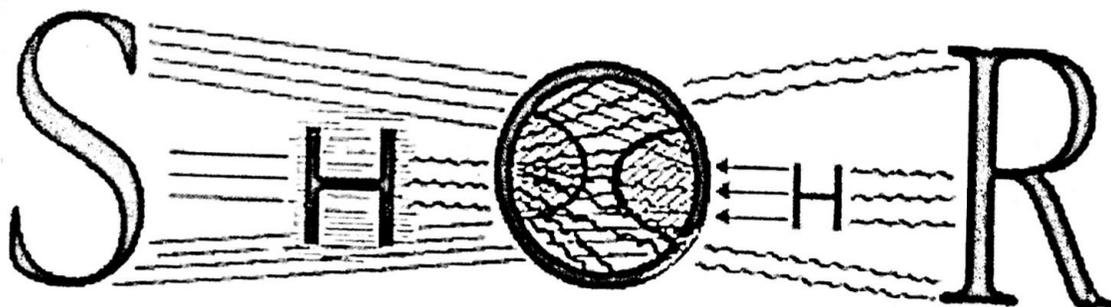
Direct exposure learning occurs when a stimulus impinges on a learner and modifies his or her behavior, resulting in the creation of cognitive structures that cause “a potential for changes in the learner’s response to the environment when the environment is constant and stable” (Feuerstein et al., 2006, p. 67). This concept is consistent both with behaviorism’s stimulus-response theory and with Piaget’s (1964) stimulus-organism-response formulation; however, direct exposure learning requires a ready learner who has at least initial direct contact

with the stimulus and is able to accept the stimuli that are present in his or her environment (Feuerstein et al., 2006). Both models “assume that it is enough for a person to be in a kind of dialogue with the world, nature, and the surrounding stimuli in order to experience cognitive and intellectual development” (Feuerstein et al., 2010, p. 27). To successfully learn from direct exposure, however, the learner must possess a “level of need, skill, responsive capacity, and other attributes” (Feuerstein et al., 2006, p. 68).

Feuerstein et al. (2006) proposed a third model in which a human mediator is placed between the stimulus and the organism and the organism and response, serving as a precipitator of the change by acting in several potential ways. Figure 1 below (reprinted from Feuerstein et al., 2006) depicts this model.

Figure 1

Feuerstein’s Model of Mediated Learning Experience

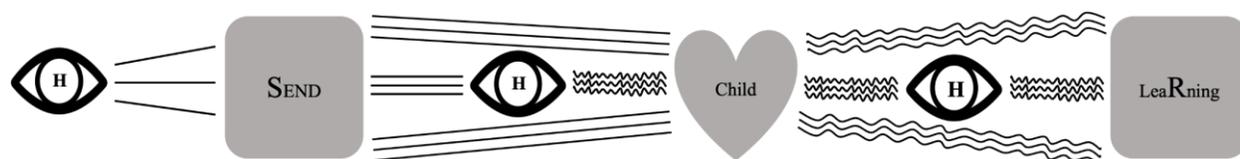


The participants in this study described the phenomenon of mediating learning experiences for their children with special educational needs and disabilities. In recording and analyzing the participants’ experiences, this study expanded Feuerstein’s (2006, 2010, 2015) theory of mediated learning experience to the homeschool context for learners with SEND. The resulting expanded theory is depicted in the model below (Figure 2), which was adapted from Feuerstein’s (2006) original model. The adapted model demonstrates the finding that, for family

members who homeschool learners with SEND, the act of homeschooling itself is a mediated learning experience in which the family member serves as the human mediator placed between the special educational need or disability and the child, as well as between the child and his or her learning.

Figure 2

Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities

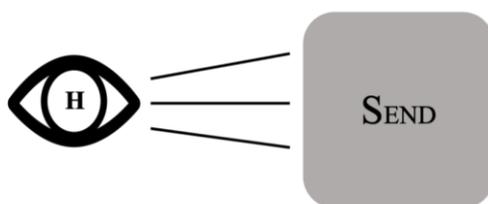


Vision of Special Educational Needs and Disabilities

The left side of the expanded model (Figure 2a) represents the vision that family members homeschooling learners with SEND had of their children's special educational needs or disabilities.

Figure 2a

Left Side of Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities



This vision occurred as one of two types of recognition: (a) recognition of a need or disability or (b) recognition of a problem in the educational context. Those who recognized a need or disability within their child were either already homeschooling their child, or their child was in

another educational context in which his or her special educational need or disability was recognized by the parent but either undetected or dismissed by the educators working with the child in the school setting. For participants whose children already had diagnoses in place, the vision occurred when they recognized that their children were having negative or inadequate experiences in their educational settings. Some participants experienced both types of recognition, identifying both their children's SEND and the problems they were experiencing in traditional educational environments.

Recognition of the SEND. Some participants chose to homeschool their child before realizing the child had a special educational need or disability and began to recognize a problem within the context of working with their child(ren). In her timeline, Jennifer shared that when she started teaching one of her twin daughters to read, her daughter was quick to pick up letter recognition but then “started to show what [Jennifer] thought was symptoms of laziness.” Her daughter would begin working on a reading assignment and “start to hide or cry or just try to get out of it any way she could.” Her daughter was eventually diagnosed with dyslexia, but until then, Jennifer “didn't really understand what was going on, so there was punishment involved.” Jennifer explained that she would punish her daughter for “not being willing to cooperate” because she first thought it was “disobedience and willfulness” until she realized “there might be something underlying this.” She shared that she still has “a lot of shame about this.”

Other participants described scenarios in which their children's special educational needs or disabilities were not recognized or were dismissed by the educators who worked with them in a traditional school setting. In her timeline, Lisa shared that when she decided to homeschool, she sought psychoeducational testing for her son because she thought, “he's dysgraphic, and I want to know what to do about it since I'm now going to be homeschooling him.” She

experienced what felt like “a bomb dropped” when she learned that her son not only had dysgraphia but was also gifted and had high functioning autism:

He had just turned nine, and I’d literally been asking for help for him for years. And everybody was just [acting] like I was some crazy mother, who has a degree in psychology and in education—as if I didn’t know what I was talking about—who stayed home with him full time. And I was saying, “What about this? What about that?” Everybody said, “Nope, nope, nope.” So it was really validating for me, but also unexpected because his school hadn’t identified the giftedness, the dysgraphia, or the autism—this supposedly excellent school district that he had been attending for three years and with a proactive mom advocating for him, saying, “What about his handwriting? What about friendships? What about this? What about that?”

Julia experienced a similar shock when she began to homeschool her twin daughters to protect her immunosuppressed child with significant lung disease from a global pandemic. In her timeline, she shared:

As part of our homeschooling experience, I realized, when I got them home, [that] she couldn’t read. She couldn’t do math. They were halfway through first grade. And we had actually just had a 504 meeting. And ... our school was rated the number one elementary school in [our area] ... a good school with good teachers, and they really care and they try.

Julia had asked the school if her daughter should be evaluated for learning disabilities and had been told that “she [did]n’t meet the criteria,” despite having had a brain injury at birth and being “at risk for all of these things.” When Julia brought her home, she found that

She couldn't read a thing—like nothing, nothing. ... She could kind of like guess some things. ... She was just sort of faking her way through it at school and at home. But she would try to avoid reading as much as possible, obviously, because it was impossible for her. And she could not add—like any number plus zero, a number plus one ... like nothing.

After six months on the waitlist for neuropsychological testing at the local children's hospital, Julia's daughter was diagnosed with severe ADHD, significant dyslexia, and dyscalculia. She also demonstrated extremely low processing speed and very poor working memory.

Recognition of Problems. Multiple participants were aware of their child's SEND but recognized problems within their child's traditional educational setting. Some of the participants' children had negative experiences in those contexts, some received inadequate support or instruction, and others experienced both. These children with SEND faced a myriad of negative experiences in their traditional educational contexts.

Laura began volunteering in her daughter's classroom after her daughter started coming home from school miserable, angry, and upset. In her timeline, she shared that her daughter "would be fine all day and then just miserable when she got home." Laura reported in our interview that she "volunteered in the classroom every chance [she] got because [her daughter] was angry, and [she] couldn't figure out what was really going on." She thought that perhaps another child was triggering her daughter, but instead she discovered that the school environment was extremely high-pressure: "I texted my wife at one point, and I was like, 'I'm stressed out. I'm 45 and I'm stressed out. ... This isn't okay.'" Then her daughter began to tell her that she wasn't smart:

She was saying that because, when you're in the classroom of 24 ... as soon as one person gets the answer right, you're done. Why would you keep thinking? You don't need to keep thinking. Somebody else was already smarter than you, and they got it right.

Laura realized that the competitive environment and constant pushing, both of which began in kindergarten, had the potential for negative long-term effects. The school sought high academic scores and valued and promoted being the best, but Laura questioned the mentality: "You would go to things like, 'We're the best! We're the best!' And I'm like, who cares if all the kids are broken when you're done?"

After seeing the environment firsthand and witnessing its effects on their daughter, Laura and her wife "both sat down and [decided] to really reassess." Despite being public and private school graduates themselves, they concluded that they "had to pull the plug and say it was done." They agreed that they needed to "give her that freedom to do what she wanted to do when she wanted to do it because essentially her whole life is scheduled for her. She doesn't get to decide when she goes to the bathroom."

Lenora, who taught at her son's school, expressed frustration that her own class was interrupted by the principal coming to let her know that her son was in his office yet again. His teacher was understandably frustrated, but Lenora was as well. She elaborated in her timeline: "I've had kids like this in my class before. And I understand that it's difficult, but we're doing everything. We've gotten diagnosed; we've gotten on medication. I don't know. What else do you want me to do?"

Other participants saw that their children with diagnosed special educational needs and disabilities often received inadequate support or instruction in traditional educational contexts. Multiple participants expressed frustration with schools constantly "pulling out" their child with

SEND. In her timeline, Katherine shared that her daughter's school proposed only "having her with her peers for morning meeting, lunch, and recess, and then for everything else, she's pulled out into a separate classroom with a group of kids with all sorts of issues ... like half were more behavioral than academic." Katherine felt that her daughter was "somewhat being supported," but "her schedule was just in and out, in and out. And you know, it would be difficult for anyone to deal with that type of disruption." Katherine also noticed that some of her daughter's IEP goals were not even addressed, and she felt that "this [wa]sn't legal, but [she] didn't want to be 'that mom.'" She felt "like there wasn't enough attention ... [like] they were just letting her get by with things." By second grade, her daughter "started to regress," and Katherine decided, "if she's just going to be pulled out, I'm going to do it at home." Katherine lamented that "[it] felt like at school, they never saw or rarely saw her successfulness, and at the forefront was always the deficit."

Paula found that her daughter continued to be promoted despite not making gains. In her timeline, she shared that "because of her age, they would not retain her." Paula added, "I should have fought for that. But I trusted them too much." Her daughter spent four years in public school, but Paula lamented that "they stopped teaching her after a while." She found herself growing "angry at the lack." Paula acknowledged that the staff members were nice and that they loved and cared about her daughter, but the twenty minutes a week she received with specialists was "nothing, and they were not helping her learn to read." The one-on-one aide who worked with her daughter spent her time scribing and taking her through worksheets, which Paula described as "busy work." An additional three to four hours of homework was sent home every night, despite Paula's insistence that they were not going to spend that much time on homework each night. She recalled, "it was all busy work and it was not at a level where she was really

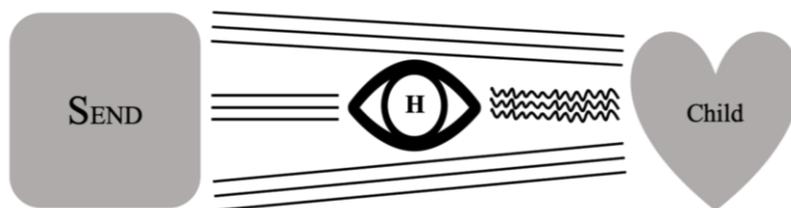
working at that time. ... She was smart enough to understand things, but she wasn't reading at that level. It was frustrating."

Seeing and Responding to Needs and Challenges

The stimulus in Feuerstein's (2006, 2010, 2015) original model is the actual special educational need or disability of the child in the expanded model. Once the family member or human mediator (all mothers in this study) recognized the child's SEND, she placed herself between that need or disability and the child by (in collaboration with family members) making the choice to homeschool and/or adapting the homeschool environment in response to the need or disability. As in the original model, the stimulus (SEND) remains relatively static, as represented by the solid lines between it and the learner; however, the level of mediation between the human mediator (family member) and the organism (child with SEND) is high, as represented by the wavy lines. In the middle section of the expanded model (Figure 2b), the child is depicted within a heart because love is a powerful mediational force in the homeschool context.

Figure 2b

Middle Section of Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities



The human mediator is depicted within an eye because, in addition to the initial vision of recognition described in the section above, the family member continually sees and responds to the child and his or her individual need or disability.

Participants described numerous examples of this phenomenon, many of which are outlined in the sections that follow. In her statement of advice, Katherine shared that, after she cut the ties with the public school, “[she] felt a whole new freedom to be more of a student of [her] child’s learning and development than if [she] had them in school, in a public school, with another teacher telling [her] how they learn or how they’re developing.” In our interview, Lisa shared a similar freedom she has found in being able to see and respond to her son in the flexibility of the homeschool context:

I can follow his cues. On a day where I know he’s struggling, we can stop. We don’t have to get through x lesson today. It doesn’t even have to be tomorrow. Frankly, it could be in three days. And some days we do more because he’s super motivated and he’s in a great mood and I capitalize on that. And other days he’s kind of low energy or he’s stressed about something and we back off. So it’s a dance.

SCM and Learning of Homeschooled Learners with SEND

On the right side of the expanded model (Figure 2c), the family member is depicted as a human mediator who sees his or her child’s learning within the homeschool context and mediates to precipitate change in that learning (the response in Feuerstein’s original model).

Figure 2c

Right Side of Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities



Just as Feuerstein et al. (2006) identified mediated learning experience as “the primary mechanism for the achievement of Structural Cognitive Modifiability, and the process by which efficient modifying of human learning and development occurs” (p. 55), the act, by a human mediator, of homeschooling a learner with SEND modifies the child’s learning by producing evident changes in the child through that act of mediation. While individual mediation events within educational experiences contribute to these changes, the expanded model represents the larger-scale change that occurs in the child because of the act of homeschooling, which is an act of mediation in itself.

One of the most dramatic examples of evident change produced by the mediating act of homeschooling learners with SEND is reading. Two families whose children had diagnosed special educational needs and disabilities that were not being met in the traditional school setting described meaningful gains in reading. In our interview, Paula, who had been frustrated with the lack of reading instruction her daughter received in four years of public school, described the change she witnessed after two years of homeschooling:

Now she has an Orton Gillingham tutor. And that person has brought her up two reading levels in really less than two years. So she’s really gaining. And it’s great because she is always pulling books out of the library that are above her reading level because she’s interested in the topic—atoms and molecules. Now this is an abstraction or a level of abstraction that I’m not really sure that she’s ready for, but we’re going to try it because she’s been begging to do it.

Julia, previously quoted as being shocked when she began homeschooling and realized that her daughter could not read at all, shared an emotional testimony when asked what changes her daughter had experienced since beginning to homeschool:

She can read! She can read! She can do math. She doesn't try to avoid reading; she doesn't shy away from it. She actually—she loves to read. Like, she *loves* to read! I'm going to cry about this. I'm an English major; reading has always been really easy to me. And I love to read out loud ... I just I love to share stories with them. And I'm expressive, and that's just something that's really special to me. And I love reading to myself, so I really want them to have that. And obviously reading is the key to the world. If you can read, you can learn anything; you can learn about anything. Reading is access.

Participants also consistently described behavioral changes in their children with SEND after beginning to homeschool. Learners were described as “calmer,” “happier,” and “less stressed out.” They experienced “fewer angry outbursts” and “less anxiety.” In her statement of advice, Grace reflected that “just the very fact that they are able to be these happy, well-adjusted people makes them more able to learn than if they were to be in a classroom.”

Theme Development

Feuerstein et al. (2006, 2010, 2015) identified three essential parameters that must be present for a mediated learning experience to occur: intentionality and reciprocity, transcendence, and mediation of meaning. Intentionality refers to the explicit deliberateness that the mediator brings to the interaction, and reciprocity indicates effective responses to interactions that facilitate transformation. Transcendence provides a larger context to an experience, and mediation of meaning provides it with reason and purpose. The expanded model of MLE for homeschooled learners with SEND that I developed from this study is based on data that centered around four themes directly connected to these three essential parameters. Those four themes, as well as two additional themes, are listed here and described in the sections that follow: (a) intentionality central, (b) reciprocity through individualization, (c) transcendence

pursued, (d) natural mediation of meaning, (e) overwhelming presence of nonessential parameters, and (f) worth the cost. The resulting themes and subthemes from the coding of all data sources are compiled in Table 2 below.

Table 2

Themes and Subthemes for all Data Sources

Theme	Subthemes
Intentionality Central	Intentionally Choosing to Homeschool Intentionally Choosing Curriculum Intentionally Tailoring Instruction
Reciprocity Through Individualization	Reciprocity Through Focus Eliciting Reciprocity
Transcendence Pursued	
Natural Mediation of Meaning	
Overwhelming Presence of Nonessential Parameters	Feeling of Competence Regulation and Control of Behavior Sharing Behavior Individualization and Psychological Differentiation Goal Seeking, Goal Setting, Goal Achieving, and Goal Monitoring Behavior The Search for Challenge, Novelty, and Complexity Awareness of the Human Being as a Changing Entity Search for Optimistic Alternatives Sense of Belonging
Worth the Cost	Flexibility Offered Individualization Afforded Goals Facilitated

Intentionality Central

Intentionality was central in all aspects of homeschooling learners with SEND, from the decision to homeschool to the myriad of decisions that family members make to mediate their

learner's special educational need or disability within the homeschool context. Feuerstein et al. (2006) noted that “[a]ny and all interactions, from the simple (nursing, toileting, etc.) to the complex (academic skills, appreciation of poetry), can be framed through the experience of MLE” and that “the intention to mediate transforms the three partners in the interaction” (p. 72). The expanded model of MLE that I developed from this study reflects a complex interaction (the process of learning as an individual with SEND) being framed as a mediated learning experience in which the family member homeschooling the child serves as a human mediator intervening between the stimulus (the special educational need or disability), the organism (the child), and the response (the child's learning). Intentionality is central in all aspects of the process, from choosing to homeschool in response to the SEND to adapting the homeschool experience to accommodate for the SEND.

Intentionally Choosing to Homeschool. Every participant demonstrated intentionality through the very act of choosing to homeschool their child with special educational needs or disabilities. Jordan advised parents, “Homeschooling is both the best and hardest path you will ever choose. Do your research. Look at your life. Be realistic about the decision.” This choice required resolve from participants who were discouraged from homeschooling their children, sometimes because of their child's SEND. Grace explained in her statement of advice:

We are constantly told [that] because we don't have a special degree and they have special needs, we couldn't possibly be able to educate our children. I think that's where special needs parents are coming from—they don't have the confidence to do it when all of the professionals are telling them it can't be done. So I try to encourage anyone who does talk to me about it [by telling them] that it can be done and your kids can be happy and well-adjusted. And at the end of the day, the academics aren't everything.

After the initial choice to homeschool had been made, intentionality continued to be central for participants in every aspect of the process, especially choosing curriculum, making instructional decisions, and adjusting to meet specific needs or challenges that arose.

Intentionally Choosing Curriculum. Participants shared in the interviews that they chose curricula with intentionality, weighing factors such as their child's specific needs, research and recommendations of experts, their own teaching style, their child's learning style, and characteristics of the curriculum itself, including cost, ease of implementation, and visual appeal. Paula described intentional choices she made because of her daughter's creative bent: "She loves art a lot, so that's why we chose these things. She loves drawing, and it gives her a social aspect to it." For her daughter with Down syndrome, Katherine shared, "I specifically try to look for curriculum that's visual and has hands-on material." As a parent homeschooling three medically complex children, Jordan needed to focus on practicality: "it has to be easy enough to use, especially in my life, that I'm willing to do it ... the first and foremost factor is my teaching style because I have to be comfortable using it first." Lisa didn't want an "out-of-the box" curriculum but felt that her kids "needed [her] to participate." She explained, "I wanted something where we were collaborating. I wasn't just ... reading an assignment and giving you a piece of paper. ... We're trying to get away from that model." Lenora shared that sentiment: "A lot of the curriculums out there are very, like, teach a lesson, do a workbook page. And because he struggles with writing, I try to find things that don't involve a workbook page."

Intentionally Tailoring Instruction. Participants also intentionally tailored their instruction to their children's interests, needs, and challenges. As Grace summarized in her statement of advice, "As a parent, really, it's [about] figuring out what your child needs and when they need it." In our interview, Katherine provided a detailed example of helping her

daughter compare and contrast for a reading assignment. They first created a Venn diagram or same-different chart. Then they went through a couple of examples. Finally, looking at the text, Katherine began to question her daughter: “What are the steps we need to do to compare and contrast? What are the things we need to think about?” Katherine observed that her daughter could respond “because [they had] already done a model of it before she was asked to do it herself” and that “explicit instruction is far better than just asking [her] to compare and contrast these two things.” Samantha tried to capture her son’s interest by making instruction fun for him. In our interview, she described a tactic that she used when he was younger to help him learn sight words: “I wrote them in marker on a big posterboard. We went outside and used water balloons, and if he hit the word, he had to say it. . . . I knew that would draw him in.” Conversely, Grace shared that she intentionally avoided tasks that would frustrate her two young learners with Down syndrome:

With language arts, we might do, you know, cut and paste worksheets. If they have to write to do it, it’s just not going to work. They’re gonna get too overwhelmed. They can trace. They can cut fairly decently. They love to glue. Oh my word, do they love glue! And they love books, so we go to the library and we read lots of books together right now. Their favorite is *Piggy and Gerald*. They are obsessed with the *Piggy and Gerald* books.

Participants also described utilizing intentionality to adjust to specific needs or challenges that arose while teaching their children. Katherine described what she does when her daughter struggles with something that she has previously done successfully: “Sometimes I know she knows something because we’ve done it before or it’s right in front of her. Then I know, okay, this needs a lot more practice or I need to help her learn it in a different way.” Paula recalled a

similar experience working with her daughter on division word problems, explaining that it was just “not clicking for her, so [they went] back to the manipulatives.” She described questioning her daughter to guide her to the answer but acknowledged that the skill “hasn’t transferred yet from that way of doing it to just being able to say, ‘Oh, I divide 30 by 10.’” Paula confessed that she did not have a solution to that problem, but she reflected intentionality in her approach to it: “I always assume that there’s something beneath the thing she’s not understanding that hasn’t clicked yet. And I try to go back and figure out what that is.”

Reciprocity Through Individualization

The other component of the first essential parameter in a mediated learning experience is reciprocity. Reciprocity occurs when a mediator makes efforts “to transform the mental, emotional and motivational state of the mediatee to render him or her more accessible to direct experience” (Feuerstein et al., 2006, p. 72) and to increase his or her awareness of his or her internal and external world. Participants elicited reciprocity from their learners through individualization, which drove most aspects of the educational experience in the homeschool context. In her statement of advice, Grace captured the natural process underlying these efforts:

Kids will show you, by how long they want to stay with a subject, if they’re ready to move on to something else, or if they want to dig in further to that. So you just have to really listen to what your kid needs. I think that overwhelms people, but that’s what we do as parents all the time. I mean, we constantly are adjusting to our kids’ different needs—when they’re staying up later or when they need a season of rest—so it’s the same thing with homeschool.

Reciprocity Through Focus. In addition to knowing when to go deeper and when to pause in a learning experience, many participants shared that their efforts to foster reciprocity

were devoted to securing and maintaining their children's interest and focus. This was especially true for learners diagnosed with ADHD, such as Samantha's son:

I find that the focus troubles begin when he is not interested in what he's doing. But there's almost always a place where I can find something that, if I can get him involved in it [enough], he [becomes] so focused on it that he wants to know the answers. He wants to find out all the details, and he becomes hyper-focused on that thing. So I spend a lot of time trying to figure out how to get him onto that hyper-focus thing. I just try to find the thing that I know he's going to focus in on.

Eliciting reciprocity from a child with ADHD or other special educational needs and disabilities often demands extra effort from the family member acting as human mediator. Lenora acknowledged losing her patience while working with her son at times:

I tried to think about it like, "okay, if this wasn't my child, I wouldn't be yelling at them," you know. I would be more compassionate about their struggles and find a way to help them that they will respond to. So I become more understanding when he points out that I'm not being understanding.

Eliciting Reciprocity. In our interview, Jordan described her efforts to elicit reciprocity from her daughter who is blind, nonverbal, and about three-months old intellectually due to her severe, life-limiting medical diagnoses:

Different things can cause Olivia stress, whether it's that she's physically uncomfortable, whether she's drifting into an autonomic seizure, whether she's cold. You know, there are different things. She's already on a lot of pain medicines, but she has shown an interest in music. We know she likes music because if it's playing—somebody else is playing it—we will notice her paying attention. And it was actually her older sister who discovered

she likes things with a strong beat—a strong melody line and an upbeat beat—and Taylor Swift seems to really fit that bill. When she’s having a hard day, we have an iPad in there playing Taylor Swift music for most of the day. She has favorite songs, and she has songs that she’ll start fussing when they come on because she wants something else.

Jordan’s effort (as well as that of her older daughter) to recognize and respond to Olivia’s musical interest and preferences transformed her awareness of both her internal and external world. This was simultaneously an incredibly simple and incredibly powerful mediated learning experience that resulted in structural cognitive modifiability in a child for whom even the slightest growth is significant.

Transcendence Pursued

Family members intentionally pursued transcendence in both the act of homeschooling and in individual educational interactions. Transcendence is the extension of an object or experience beyond the present context and “serves to enlarge and magnify the repertoire of experiences and responses in the life of the child” (Feuerstein et al., 2006, p. 73). In the broader context of homeschooling as an act of mediation, the family member acting as human mediator exhibits transcendence in his or her stated goals for the child. In her timeline, Laura discussed her ultimate educational goal for her daughter, declaring that “she has to love learning; it has to be something that she likes to do. It has to be enjoyable.” She elaborated by explaining that one day her daughter, who will be wheelchair-bound for life due to spina bifida, will be interviewed for a job in which “the other guy is able-bodied, and [she will] have the exact same resume.” Because the company will view her daughter as a human resources risk, Laura predicted that she will not be hired “unless [she has] a passion that is so hot and bright ... that they just look at

[her] and go, ‘Oh my gosh, we need you.’ If they’re not going to do that ... [she’s] not getting anywhere.”

In our interview, Katherine shared her “big picture goal” for her daughter with Down syndrome:

My big picture goal ultimately is—she is in our community, she’s going to grow up in our community, she’s going to function in our community, so how best can I support her to function to her potential, her greatest potential? And not only, you know, at home, trying to nurture her interests and the things she likes, but functionally. Can she go to the store and buy herself some ice cream? ... When she grows up ... I pray that she has the funds to be able to do [what she wants]. Like if she wanted to go get a manicure, she could schedule herself to go get a manicure and do a manicure, go to movies with her friends. ... And then having a job, like, or two jobs, having her be able to set times for her to be able to go to her job ... if she can arrange transportation or drive or ride her bike. So, you know, community thinking. She’s going to be in our community, and how best do I get her to flourish in the community?

For Jordan, transcendence in mediating her son’s disability included recognizing the significance an ordinary activity held for him. Due to his developmental level and intellectual disabilities, he does not understand time or his diagnosis, and he is losing the ability to do things he could previously do. In our interview, Jordan reflected:

He does not know that he is terminal. But he probably only has the use of his arm to play with toys for a couple more years, so letting him enjoy everything he can enjoy is a top goal for him. I used to be frustrated by how much he wanted to do video games until I

realized that in a video game, he can vicariously have all the physical skills he no longer has. I need to let him do that while he still can.

In the interviews, participants also described intentionally pursuing transcendence in their day-to-day interactions with their homeschooled learners with SEND. Grace described making the extra effort to include her children on outings. She acknowledged that taking her children with her to the store “makes [her] life so much more difficult” but explained that “it’s important for them to learn how to have those skills—to learn how to greet people in public” and that they “work on a lot of life skills.” Katherine described how her daughter makes connections between what she is learning and the outside world: “In the everyday occurrence of listening to music or watching a show on TV, she’ll be like, ‘That’s the same thing we did for reading!’” Jordan extended the results of DNA testing that her daughter received for her birthday to a detailed study of Nigerian culture. She also encouraged that same daughter to be more careful with her power wheelchair in the house by connecting the effort to that of driving a car, a desire her daughter has expressed. Jordan encouraged her to make it a significant amount of time without hitting anything with her chair by explaining that, when she backs into a bookshelf and destroys it, “it could have been a person and, with a car, that means they’re dead. So the damage one could do with a mistake with a car is far bigger than a mistake with a wheelchair.” Jennifer summarized, “I operate from the idea that anytime you can integrate information, that’s much more powerful for learning.”

Natural Mediation of Meaning

Mediation of meaning occurred naturally within the homeschool context for learners with SEND. This third essential parameter of MLE “relates to the affective/energetic dimension of mediation, answering questions such as *why, what for*” (Feuerstein et al., 2006, p. 73). This

parameter is mediated in two ways: First, through his or her intentionality and sense of the transcendent potential of objects and events, a mediator attributes affective meaning to them and then offers and structures encouragement and focusing to the learner, who assimilates it through imitation; and second, a mediator assesses the potential meaning for a learner and actively intervenes to “identify, highlight, legitimize, and encourage the expression of what the learner feels and values” (Feuerstein et al., 2006, p. 74). In our interview, Laura described a time when she legitimized her daughter’s feelings when other children touched her wheelchair, “which was a huge no-no.” She explained to the children, “Hey, part of her body! Unless you want someone grabbing your shoulders, you don’t touch the chair.” Lenora recalled her son threatening to go live with his grandma because she was “making him do his schoolwork.” She appealed to him, “We have the same goals. I also don’t want you to live here forever, but you have to learn how to read and do math so that you can live on your own.”

Even in her daughter’s first years of life, Katherine mediated meaning for her as she struggled to learn to crawl properly in one of her early physical therapy sessions. The therapist was trying to get her daughter, who was a tripod crawler, to crawl on all fours. Katherine “got down on the floor” and said to her daughter, “I know this is hard, but this is a good way to crawl.” She elaborated, “The principle of it is, maybe sometimes you need to do it a certain way. And it’s going to be hard ... but this way, it’ll help you. It’ll help your hips. It’ll help you get ready to pull to stand.” Katherine reflected in our interview that there was “a determination inside her” that could have prompted the physical therapist to give up because her daughter was “crying too much.” But Katherine’s daughter responded to her efforts to mediate meaning and “didn’t run away. She didn’t drop and flop.” Katherine further admitted, “It’s a hard balance. I don’t always get it right.”

Overwhelming Presence of Nonessential Parameters

In addition to the three essential parameters of MLE described earlier in this chapter, Feuerstein et al. (2006, 2010, 2015) also identified nine situational or reinforcing parameters of MLE: feeling of competence; regulation and control of behavior; sharing behavior; individualization and psychological differentiation; goal seeking, goal setting, goal achieving, and goal monitoring behavior; the search for challenge, novelty, and complexity; awareness of the human being as a changing entity; search for optimistic alternatives; and a sense of belonging. Though these parameters are considered nonessential for MLE to have occurred, they were overwhelming present in the homeschool context for learners with SEND.

Feeling of Competence. A feeling of competence must be mediated because “[b]eing competent does not necessarily result in feeling competent” (Feuerstein et al., 2006, p. 76). This requires a mediator to first create situations in which competence can be experienced as well as “interpreted, understood, accepted, and elaborated” and, second, to help a learner “appreciate and build upon situations where competence exists, but may not be sufficiently accepted as part of the self-concept” (Feuerstein et al., 2006, p. 76). In our interview, Jennifer described her daughter’s struggle with spelling and how “[h]er handwriting instruction was so key to her feeling accomplished” because she “has this attitude that, ‘Well, I can’t spell well, but it’s gonna be pretty.’” Jennifer reflected, “She’s much more competent, and she can take notes now” thanks to “having access to electronic aids. ... She knows she has that available and that gives her a lot of confidence.” Jennifer utilized similar strategies to build a sense of competence in her son, who has “memory deficits that make it really hard for him to retain the things that he learns, so it’s a constant process of reestablishing the things that he needed to understand.” As he has gotten older, she has changed her approach: “Now we’re at the point where I’m looking less at trying to

fix the disorder and more at how can we find workarounds that help him to be successful because he's exceptional ... in other areas.”

In our interview, Grace shared that she came to a similar conclusion in her work with her children: “The more that they succeed [in] different areas, I think the more successful they feel to try different things.” Her teenagers have gotten to the point “where they're self-teaching themselves different things because they've realized that they can do it.” For Grace's children, this came after a period of early adolescence when they tended to isolate themselves in their rooms, “feeling like they just don't have self-confidence, ... when they're trying to figure out who they are.” After her older children came out of that stage, Grace

noticed so much competence and growth from them, that they are able to take on new things and try new things. And when they fail at them, they're no longer feeling like they're a failure. ... They just realize that particular thing is not for them anymore.

Regulation and Control of Behavior. Mediation of regulation and control of behavior requires a mediator to both inhibit unwanted, dysfunctional, or distracting behaviors in a learner and initiate behaviors that are either blocked or not sufficiently present in the learner's repertoire (Feuerstein et al., 2006). This situational parameter was mediated by most participants in the context of homeschooling their learners with SEND.

In our interview, Laura shared that she needed to equip her daughter with strategies to use when “she gets frustrated because she's smart ... which translates in her head to ‘I should be able to get this immediately.’” Laura reminded her daughter of Thomas Edison's many failures and encouraged her to “give [her]self a break. ... Take the breath. Think about it. ... You can't think when you're that upset.” After several months of working hard on calming strategies, she now

sees her daughter “thinking and breathing. ... Sometimes she’ll put her hand over her heart and be like, ‘Oh yay, I’m alright.’”

Lenora shared in our interview that she has “tried a lot of different things” to help focus her son’s attention despite his ADHD. She has learned that “short spurts” work best for him instead of expecting him to “pay attention for a really long time.” She has found fidgets to be counter-productive because “that usually serves as a distraction,” so she instead strives to “create a space where there’s nothing he can grab” and to provide him with “a clean place to work.” Lisa expressed similar concern about her children’s environment, explaining that she makes sure that her two children have whatever they need to focus their attention before they start a read-aloud. Options include fidgets, something to draw while listening, water, and a snack. Lisa shared that she makes sure that “they’re prepared before [they] start” and that “it’s flexible and comfortable” instead of forcing them to “sit at the table, where they’re expected to have their feet on the floor and sit up in a hard chair.”

Grace utilizes “nature-based play” to calm her younger children and help them learn. She also expressed that when one of her sons with autism “is immersed in sports, it meets his sensory needs and he’s able to focus in life. He’s able to get his schoolwork done now and not argue about every single thing, so he’s swimming year-round.” After twelve years of homeschooling, she has reached the point at which

if [her] kids are feeling like they’re out of sorts, then they know, they know themselves, and they know what to do to calm themselves down. And each one of them is able to go off and do that thing. Whereas if they were in a public environment, they couldn’t do that.

Sharing Behavior. To mediate sharing behavior, a mediator facilitates a learner's readiness and ability to connect with fellow human beings, as well as to adjust to them, to gain insight from them, and to share harmony in experiences with them (Feuerstein et al., 2010). Although sharing behavior is a basic human need, "[f]or the special needs student or the low functioning individual, this sharing process is often limited, blocked, or actively avoided" (Feuerstein et al., 2006, p. 78). In our interview, Grace highlighted the sharing behavior that resulted from the act of homeschooling her learners with SEND, noting that "it made [their] family closer." She, her husband, and their older three teens have found a shared family culture of reading: "We have our own book club going. We read books together just for fun to talk about." She shared that her daughter jokingly asked her if "[they]'re gonna still do this when [they]'re out of the house and married." Grace told her, "I hope so. I really do."

Individualization and Psychological Differentiation. Complementary to sharing behavior, the parameter of individualization and psychological differentiation "represents the need of the individual to become an articulated, differentiated self" and is achieved when a mediator "emphasizes the legitimacy and value of the individual's differences," placing them "in a context of importance, recognition, and integration" (Feuerstein et al., 2006, p. 79). Though considered nonessential for MLE, this parameter was central to most aspects of homeschooling a learner with SEND and served as both a motivator and an instructional tool for family members. Participants mediated individualization as a sense of self for learners by modeling the act of valuing their child's individual differences and by encouraging their child to do this for him- or herself.

In our interview, Lenora described the effects of her efforts to value her son's interests in their homeschool:

It has affected him by making what we're doing more ... individualized to him. ... He has a lot more free time to explore what he wants to do. So he has maybe grown and learned things that he wouldn't have normally learned in school, just based on his own interests.”

Paula has demonstrated the value of her daughter's interest in science and nature by “having a second walker made for her, which takes her a little more off the beaten path”; putting bird feeders in their yard (“she can tell you a lot about every single bird that visits our feeder”); going to reserves to look for bald eagles' nests; and signing up for programs at a local nature center.

Goal Seeking, Goal Setting, Goal Achieving, and Goal Monitoring Behavior. A mediator creates in a learner “the ability to select goals, to prefer certain goals over others, and to acquire the means for achieving those goals” in order to enable him or her to attain “higher levels of functioning” (Feuerstein et al., 2010, p. 56). As previously described, goals motivated participants to homeschool their learners with SEND and drove most of the decisions they made within the homeschool context. By making these goals explicit to their children, parents model the various goal behaviors that comprise this parameter; however, the participants also shared specific ways that they mediated these behaviors in their children. Jennifer described her efforts to involve her son in thinking about long-term goals and what it will take to achieve them:

I am trying to teach him to be flexible about his outlook of what he wants to do because I'm very concerned that he's going to have difficulty with a traditional path and that he may end up needing a little more maturing before he goes off to the college course. So we've been talking about his options and maybe doing ROTC or doing some time in the military and then coming back and getting a college education. But he does want a college education.

Grace shared about her use of Minecraft as an incentive to teach her teenage sons to self-pace. She established a rule that tied their Minecraft play time to the completion of their schoolwork without complaining. As a result, her sons learned to consider their obligations each day, establish routines, and create schedules that allowed them to achieve their goal of playing Minecraft for the maximum time possible each day. Grace described their efforts to achieve and monitor their goal:

So they know for example ... I've got to get everything done before I leave for woodshop at three or when I get home, I can't play Minecraft. So on those days, they'll start earlier. But they've built exercise routines into their schedule now that they do, and they have like a certain rhythm to how they do it. And I learned if I tell them what to do—I mean, nobody wants to be told what to do every moment of the day, right? Sometimes we just feel like doing a certain thing. So they can work on whatever subject they feel like doing, but they have to get it done by a certain time. So I think they've naturally kind of taught themselves with the repercussions.

The Search for Challenge, Novelty, and Complexity. To foster the development and enrichment of a learner, a mediator “assesses the potential of a situation with respect to challenge, or creates experiences where novelty, complexity or unfamiliarity can be responded to competently, insightfully, and with a sense of both accomplishment and directionality” (Feuerstein et al., 2006, pp. 80–81). Numerous aspects of mediating learning for children with SEND in a homeschool context meet this parameter, but one repeated theme among participants was the unique opportunities that the homeschooling lifestyle afforded their learners. Grace described the opportunities her military family had for travel:

As a military family, we have very unique opportunities to be places that other people can never go. And so for me, it's very important that we be able to pick up and go whenever we want to. When we lived in Japan, for example, we didn't have to abide by any school schedule. ... We ended up going to mainland Japan, Korea, Hawaii, Alaska. I mean, we've just been all over the place. And we can take our time and do local field trips and learn about wherever we are.

Samantha shared a novel idea that her son had to create a graphic for a sequel to a video game that his dad played. The game developer provided unexpected affirmation of his accomplishment:

A few years ago, my husband was playing a new game, and my son saw it and had this idea to draw what he thought the sequel game could be. So he drew this picture that had the name of the next title, and it had all these little things in the front—a black and white picture. And my husband put it up on Reddit, and one of the game developers for that game saw it. And they took his design, and they had their people work on it. And they turned it into like a piece of graphic art that was like this giant poster, and they sent it to us. ... It was just amazing. It was my son's art turned into this poster.

Samantha reflected on the unexpected novelty afforded her son, speculating that “the fact that he had the time to think about that, and the time with his dad where his dad's playing this game, and he's watching and learning ... I feel like that's what caused that to happen.”

Awareness of the Human Being as a Changing Entity. A mediator achieves this parameter by working actively to create in a learner the sense that he or she is modifiable, a uniquely human characteristic that is critical to increasing the learner's potential to adapt through autoplaticity (Feuerstein et al., 2010). To mediate this parameter with a child with SEND in a

homeschool context, the family member must believe it as well. Participants demonstrated evidence of their belief that their children are modifiable. In our interview, Paula not only expressed “every confidence” that her daughter would “continue growing in reading” but also sought to compensate for developmental gaps her daughter experienced from her years in an orphanage in China by “looking for ways to develop those neural pathways that would give her more facility with those abstractions.” She hopes to take her daughter to a clinic that specializes in this type of therapy where “you can actually get the brain to essentially rewire the way it was intended to the things that the child missed.”

Julia not only witnessed her daughter’s modifiability when she saw her learn to read after being homeschooled despite being diagnosed with significant dyslexia; she also helped her daughter understand the significance of that change. She shared books with her daughter that described how children with dyslexia thought something was wrong with them before their diagnosis because everyone understood things faster than they did. Her daughter later shared how hard it was in school to try to figure things out when she couldn’t read them for herself. Julia tearfully described the overwhelming emotion of watching her daughter read books on her own, knowing the effort it took for her to become an independent reader. Her daughter felt so proud of the growth she had experienced that she wanted to show her dad, her grandmother, and even the psychologist who diagnosed her with dyslexia recordings of her reading. In our interview, Julia reflected, “We do a lot of hard stuff, so we really try to mark the good times.”

Search for Optimistic Alternatives. The search for optimistic alternatives is mediated by bringing children to expect positive outcomes so that they will know it is possible to look for, choose, and realize optimistic alternatives when faced with environmental factors that threaten their equilibrium (Feuerstein et al., 2010). For Jennifer’s children, the “positive learning context”

of homeschooling has facilitated the conditions of this parameter. She elaborated in our interview:

When they're allowed to have successes at things that kids would normally struggle with, they see that they can do it. And so they tend to become, number one, more flexible about how they approach problems with learning. And number two, they tend to have more of a positive outlook.

One of her daughters "tend[s] to get a negative attitude. If she meets a challenge, she tends to shut down and get very angry. So [they]'re working on flexibility with her." Despite that challenge, Jennifer believes that "it's better than it would have been if she were in a school and trying to be a square peg in a round hole. ... I think their overall outlook about education is more positive."

Sense of Belonging. The tendency toward isolation in modern society makes the mediation of this "nonessential" parameter very relevant. A sense of belonging is mediated first between the mediator and the learner as they build their own relationship, which models investments at "both the personal and task level" and forges "meaningful links beyond the self and the other" (Feuerstein et al., 2006, p. 84). In our interview, Laura described the extraordinary support group that she and her wife have developed since adopting their daughter ten years ago:

We have a huge tribe of people who are there to support and help and make things happen for us. And that tribe gets bigger and bigger every year. ... I actually make jokes that she has to marry an orphan because we're gonna have to fill Angel Stadium with her wedding plans. She needs to marry an orphan because there ain't going to be any room on his side.

Multiple participants emphasized the accepting nature of the homeschool community. Grace has found there to be “very little criticism of other children” in the homeschool community, even when children have divergent interests and abilities:

I find, in general, the homeschool community is very accepting of all of these varying skills. And even with my kids with special needs, we’ve had very few negative experiences. So then when the kids are together, they’re learning each other’s interests, and they’re learning more things they’d like to do.

In her statement of advice, Jennifer expressed that she has not found socialization to be an issue for her homeschooled children because of how welcoming their homeschool groups have been:

I’ve never met a more welcoming, accommodating group than the homeschool groups that we go to. They’re so much more inclusive; there’s so much more available. For example, my two with more significant disabilities never experienced a moment of teasing, never experienced a moment of negativity from anyone in the homeschool community about their disabilities—ever. Granted, they’re not physical disabilities, but I’ve noticed the same thing for kids who do have physical disabilities in our community. We have a Down syndrome child who goes to our school, and she’s loved. She’s very much beloved and brought alongside the kids and included, and there’s far less bullying and negativity that happens.

Worth the Cost

Participants painted a realistic picture of homeschooling as a challenging, demanding, and difficult choice; however, they also saw overwhelming benefits for their children that made it worth the effort. In her timeline, Lisa shared that she received her son’s diagnosis, began homeschooling, and experienced all the turmoil of a global pandemic simultaneously. She lacked

family support because most of her family was unaware of his diagnosis and was “not supportive of homeschooling.” As a parent to two twice-exceptional children, she had no friends who had children with the same diagnoses. She recalled, “I felt like an island, especially in that first year of homeschooling. We were happy. The kids were not stressed. We were home. We were healthy. It was cozy, you know, but we were alone.” Even though the world has started to open back up and her husband is supportive, Lisa confided in our interview, “The most challenging part of homeschooling for me has been feeling like it was 100% on my shoulders. ... The hardest part is that I feel largely on my own.”

In her statement of advice, Samantha expressed the challenges she felt homeschooling her son with special needs and her daughter who is typically developing: “I’m gonna be completely honest with you, this isn’t easy. This isn’t easy every day. It takes a lot out of you.” She described her attempts to balance her son’s needs with those of his sister who does not have SEND and those of her husband. She confessed, “I never trust myself because there’s one part of me that’s like, this is what I need for him, but there’s also what I need for me because it’s hard.” Julia also sensed the challenge of having one child with SEND and two without, including the twin of her daughter with SEND. She shared in her statement of advice, “It’s really, really, really difficult because I have two kids who are in totally different places, and they are the same age.” She became emotional, acknowledging that the twin who was born healthy “didn’t ask for this.” Julia further reflected, “So that’s really difficult. ... It’s really hard on siblings. I mean that’s true across the board when you have a child with any sort of disabilities or who has some sort of extraordinary difference. That’s very hard for all the siblings.”

For Jordan, whose youngest three homeschooled children all have extremely complex medical and emotional needs (two with terminal diagnoses), the challenges are magnified. In a follow-up email, she lamented,

I wish people who truly want to support us could understand how “all-consuming” this life is. It’s so NOT like parenting neurotypical children. Or even homeschooling neurotypical children. We start with parenting neurotypical children (which people can understand) and then you add homeschooling (which is where we lose almost everybody). Just that changes all the dynamics. Then you add in physical disabilities ... and it changes again. And then intellectual disabilities ... and it changes again. And medical challenges ... and it changes again. Now we are SO FAR removed from parenting neurotypical children that it’s unrecognizable to typical parents. And, in my experience, people outside our world are usually so freaked out by what we have to deal with that they don’t want to know enough so that they can empathize. Which is why I have so few friends. My life freaks people out.

Despite these acknowledged challenges, each participant shared numerous positive stories, outcomes, and benefits of homeschooling their learners with SEND. Three sub-themes emerged across multiple families as motivating and reinforcing factors in the decision to homeschool despite the effort and challenges: flexibility, individualization, and goals.

Flexibility Offered. In the interviews, most participants mentioned the flexibility offered by home education as both a positive aspect of homeschooling a learner with SEND and a means of meeting their children’s needs. In her statement of advice, Laura explained,

I love the flexibility. I love being able to make choices and not have to be beholden to, you know, doing it a certain way. You have so much flexibility in learning and how you

can do it and times that you can do it. If we have a bad day, we just don't do it, and we work harder the next day.

For Jordan, flexibility alleviated some of the challenges of homeschooling children with multiple significant medical challenges:

We can flex what we're doing based on what their energy levels are, what their pain levels are, or what their medication needs are. It takes the pressure off and frees up the timeline, or at least my expectations of what's necessary. And again, it comes back to the benefit of being at home, that we're not tied to any external timeline. So you know, if we need to take a week or two off because of something catastrophic that's happened, we can do that. You don't have to power through.

Lenora found that the flexibility of the homeschool environment positively affected her son's education: "I feel like [the fact] that he knows he has some flexibility and even some control over what we do and when is helpful for him." Samantha extended the positive effects to her entire family, recognizing that even though it has been "a rough year ... changing things to make it work for [their] family and for him has been a big deal."

Individualization Afforded. The individualization afforded through homeschooling was a consistent motivational factor that reinforced participants' decisions to homeschool their learners with SEND. Lenora explained:

[Homeschooling] has helped me meet his needs because it can be completely individualized. ... It's allowed me to be able to pick and choose curriculum that I think he will benefit from, and it's allowed me to go at whatever pace is necessary. Like if he's sick, we don't do school. If I'm sick, we don't do school. Or we can do it on the weekends or whenever is convenient for us. So just the flexibility, the individualization

that homeschool allows, has been the best part to me. I mean, that's for any child, whether they have difficulties or not, but especially for kids that have difficulties.

Paula identified similar benefits for her daughter:

Homeschooling has allowed us to work ... at the level she's at on that day, in that moment. If we have to go back and revisit something, we do it. If we need to approach it 40 different ways to find the one that clicks, we do it.

In her statement of advice, Paula also shared a philosophy that has guided her individualization of instruction as she homeschools her daughter:

A music teacher said this to me once: You have to start where you are. And every day, you start where you are. So, if you are behind where you were two days ago, you take that as a sign that what you did two days ago still needs to be worked some more.

The flexibility of the homeschool context allowed participants to individualize their children's education to their specific needs.

Goals Facilitated. The third sub-theme that emerged as a factor that motivated and reinforced participants' decisions to mediate the learning experiences of their children with SEND in a homeschool context is that homeschooling facilitated the overarching goals they had for their children. The flexibility and individuality described in the sections above allowed participants to focus on the specific goals they had identified in their interviews as critical for their children. Lisa, whose son had had undiagnosed dysgraphia in the public school setting and had a strong aversion to writing, shared,

My goal for him initially with schooling was just to get him to where writing was not a negative experience for him. Long term, I hope that he enjoys being able to communicate that way, even if it's not printing, but typing. So we do keyboarding so that he can

communicate. If he doesn't want to write it, he can type it. I wanted to change his relationship with writing to make it a positive experience for him. And that's really my main school focus because you can incorporate writing into all the subjects, right?

Samantha's goal for her son was similar but was aimed more broadly at his attitude toward learning in general:

He needs a lot of help with executive function. And being able to assist him with that, like, I know we need to get to a place where I let go more and he takes charge of more. But right now, my feeling is I want him to learn, I want him to enjoy school, and I want him to enjoy learning. ... It's my hope that I am making learning the best it can be for him. And not forcing him into places where he just feels frustrated and hates school and hates learning and hates teachers and can't get past the fact that he forgot to put his name on his paper or he lost his homework. And now whatever he's doing that day doesn't really matter, you know, because he's just focused on that.

For Jordan, the homeschool context has freed her from external goals and allowed her to truly respond to her daughter's needs:

If she has a day that she is more interested, more responsive, we can increase the interaction she's having. If she has a day that she's just really sleepy, we can let her have those days, and it doesn't have any negative bearing on goals, some external goals that somebody has. Nobody is going to be pushing her to do what is past her coping skills.

This freedom is not just a luxury for Jordan, whose daughter is five years past the life expectancy doctors originally gave her. In her statement of advice, Julia expressed a similar awareness in describing why homeschooling is worth the effort for her daughter who is medically fragile:

We don't know how long she's gonna live. Hopefully, she's gonna live to be 70 or 80 years old and just gonna blow us all away. But she might not. I did not want to homeschool, and there are still many days when I don't want to homeschool. But if she has a limited amount of time, I want that time to be good time. And if she doesn't have a limited amount of time, I want her to be prepared to be an independent functioning adult.

Research Question Responses

One central question and three sub-questions drove the research study design. All questions in the interview guide, as well as both the timeline and statement of advice prompts, targeted one or more of those questions. The responses to each question are summarized in the sections below.

Central Research Question

How do Feuerstein's (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience extend to a homeschool context for learners with SEND? The primary response to this study's central research question is depicted in the Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities. A family member who chooses to homeschool a learner with a special educational need or disability mediates the child's response to the SEND, which results in evident change in the child's learning (structural cognitive modifiability). Within the larger context of homeschooling as an act of mediation, participants exhibited multiple acts of MLE in their instruction of and interactions with their children with SEND.

Sub-Question One

What motivates and reinforces parental decisions to mediate the learning experiences of their children with SEND in the homeschool context? As shared in the results above,

homeschooling brought incredible challenges to each participant; however, the flexibility it offered, the individuality it afforded, and the goals it facilitated made homeschooling worth the cost for these families. Parents saw their children's behavior improve and watched them grow academically. Their children were able to pursue their unique interests and receive an education tailored to them in an environment that met their sensory and social-emotional needs. The effects of their special educational need or disability were mitigated through the mediated learning experience of being homeschooled.

Sub-Question Two

How do family members exhibit parameters of mediated learning experiences for their children with SEND in the homeschool context? As described and documented in the sections above, participants repeatedly exhibited all three essential parameters of MLE: intentionality and reciprocity, transcendence, and mediation of meaning. In addition, all nine of the reinforcing parameters were overwhelmingly present in the homeschool context: feeling of competence; regulation and control of behavior; sharing behavior; individualization and psychological differentiation; goal seeking, goal setting, goal achieving, and goal monitoring behavior; the search for challenge, novelty, and complexity; awareness of the human being as a changing entity; search for optimistic alternatives; and sense of belonging.

Sub-Question Three

How do family members foster modifiability in their children with SEND in the homeschool context? As the above sections describe in detail, the choice to homeschool a learner with SEND is itself an act of mediation. In addition, mediated learning experiences occur naturally within the homeschool context in numerous ways. Since mediated learning experiences lead to structural cognitive modifiability, the act of homeschooling and the ways in which that

act is carried out all foster modifiability. In addition, Feuerstein et al. (2006) emphasized that “a belief system in human modifiability is necessary for modifiability to be materialized” (p. 23). When asked specifically about changes in their children’s cognitive abilities, participants responded with descriptions and anecdotes that reflected changes they saw in their children, goals that had been met, and experiences they had; however, aside from Paula’s discussion of neural pathways, family members did not speak of cognitive growth directly. While their actions and words indicate that the participants very much believe in their children’s modifiability, this finding indicates that explicit awareness of SCM and MLE, their relationship, and how to foster each are needed. The implications of this finding are discussed further in Chapter Five.

Summary

This study produced a model depicting the extension of Feuerstein et al.’s (2006, 2010, 2015) theory of mediated learning experience to a homeschool context. While study participants ($N = 10$) demonstrated consistent use of the MLE model for specific mediation events, the most novel extension of the theory was that the very choice and process of homeschooling are acts of mediation. The parent-mediator is interposed between the child’s special educational need or disability and the child him- or herself, as well as between the child and his or her learning.

Because the homeschool context allows for all of the essential and most of the nonessential parameters of MLE to be met, it is an ideal context in which students with SEND can experience the potential for structural cognitive modifiability described by Feuerstein. Parents homeschooling children with SEND exhibit all three of Feuerstein’s essential parameters of an MLE. They close the mediational loop, demonstrating intentionality and reciprocity; extend learning experiences “beyond direct and immediate experience”; and mediate meaning for their

child by guiding him or her to consider and discover a mediating value beyond the immediate content or task (Feuerstein et al., 2010, pp. 42–43).

In addition, the study participants exhibited all nine of Feuerstein's (2006, 2010, 2015) situational or reinforcing parameters, which are valuable but considered non-essential to MLE. Due to lack of awareness of and familiarity with the concept of structural cognitive modifiability, family members do not usually speak of fostering modifiability in their child explicitly. However, the nature of the homeschool context and especially the intentions and actions of the parents as mediators create MLE, which Feuerstein identified as necessary for SCM.

CHAPTER FIVE: CONCLUSION

Overview

This constructivist grounded theory study was designed to extend Feuerstein et al.'s (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience to the homeschool context for learners with special educational needs or disabilities. This chapter begins with an overview of the study findings, followed by a discussion of four interpretations of those findings. After that, it considers the implications for policy and practice, theoretical and empirical implications, and limitations and delimitations of the study. It concludes with recommendations for further research.

Discussion

Mothers from ten families participated in the study. They were currently homeschooling or had previously homeschooled in California, Georgia, Illinois, Japan, New York, Ohio, Pennsylvania, and Virginia. They ranged in age from 34 to 63. One was a single parent, and the other nine were married. All ten participants were white. Their educational background varied from a general educational development (GED) certification or high school diploma to a doctoral degree. They had been homeschooling learners with SEND for between two and thirteen years. The interpretations that follow are presented in light of the Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities and its developed themes as well as the literature reviewed in Chapter Two and the study data.

Interpretation of Findings

This section summarizes the thematic findings outlined in Chapter Four as well as the responses to the research questions that guided the study. It then offers significant interpretations

from the perspective of the researcher. These interpretations include the following: (a) natural mediators, natural mediation; (b) homeschooling as an ideal educational option for learners with SEND; (c) the mediational power of a mother's love; and (d) altering the effects of SEND.

Summary of Thematic Findings

Theoretical interpretation of the study data revealed an extension of Feuerstein et al.'s (2006, 2010, 2015) theory of mediated learning experience to a homeschool context for learners with SEND. The extended theory was depicted in the Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities (see Figure 2). This new model showed that homeschooling itself is an act of mediation in which the family member acts as a human mediator between the child and his or her special educational need or disability and the child and his or her learning. For an interaction to qualify as an act of mediation, Feuerstein et al. (2006, 2010, 2015) stated that three essential parameters must be met: (a) intentionality and reciprocity, (b) transcendence, and (c) mediation of meaning. Six themes emerged from the data—four that revealed the extended theory and model and supported their portrayal of homeschooling as an act of mediation, and two that elaborated on the benefits and motivations of the act. The six themes are (a) intentionality central, (b) reciprocity through individualization, (c) transcendence pursued, (d) natural mediation of meaning, (5e) overwhelming presence of nonessential parameters, and (6f) worth the cost.

Intentionality was central in virtually every aspect of homeschooling a learner with SEND, from the decision to homeschool itself to the choice of curriculum and instructional methods to meet the specific needs of the learner. Reciprocity was achieved through individualization as the participants, acting as human mediators, made adjustments to various

stimuli to elicit and maintain an engaged response from the child to facilitate learning. Participants pursued transcendence by establishing overarching goals for their children as well as by extending specific skills or content beyond the immediate learning context. Mediation of meaning occurred naturally within the homeschool context as participants both made meaning explicit to their learners and validated the meaning that their children found in their experiences. The overwhelming presence of all nine of the nonessential parameters of MLE further demonstrated the richness of the homeschool context for mediation. Finally, subthemes related to flexibility, individualization, and goals reflected the aspects of homeschooling that motivated family members to make the sacrifices required to homeschool their learners with SEND.

Four research questions guided this study. The central research question asked: How do Feuerstein's theories of structural cognitive modifiability and mediated learning experience extend to a homeschool context for learners with SEND? This question was answered primarily through the articulation of the extended theory that was constructed from the study data as well as the accompanying model which revealed homeschooling a learner with SEND to be an act of mediation itself.

Three sub-questions supported the central research question. The first sub-question asked: What motivates and reinforces parental decisions to mediate the learning experiences of their children with SEND in the homeschool context? Flexibility, individualization, and goals emerged from the data as the three dominant motivating and reinforcing factors that made homeschooling worth the significant effort it required from and the challenges it brought to the family members serving as human mediators for their children with SEND.

The second sub-question asked: How do family members exhibit parameters of mediated learning experiences for their children with SEND in the homeschool context? The essential

parameters were addressed in the discussion of themes that emerged from the extended theory and model, so this question primarily focused on the nine situational or reinforcing parameters of MLE identified by Feuerstein et al. (2006, 2010, 2015) as nonessential. The data revealed evidence of all nine parameters being met in the homeschool context, some with remarkable consistency and frequency.

The third sub-question asked: How do family members foster modifiability in their children with SEND in the homeschool context? Because the act of homeschooling itself was shown to be a mediated learning experience and because both the essential and nonessential parameters were met in a myriad of ways in the homeschool context, modifiability was inherently fostered. The study revealed, however, that parents did not express explicit awareness of the concept of structural cognitive modifiability as explained by Feuerstein et al.'s (2006, 2010, 2015) theory, nor did they specifically reference mediation. The implications of this are discussed later in this chapter.

Natural Mediation, Natural Mediators. A mediated learning experience occurs when a human mediator acts with intentionality to facilitate reciprocity between a stimulus and a learner and the learner and his or her response, seeks to help the learner transcend the experience beyond the current context, and mediates meaning for the learner (Feuerstein et al., 2006, 2010, 2015). Family members who homeschool their children with SEND naturally mediate learning experiences for their children without any explicit knowledge of MLE or its essential parameters. They instinctively act with intentionality, seek reciprocity, pursue transcendence, and mediate meaning. This happens with no special training and no certification or degree, and it produces noticeable change in the learning of their children. If this occurs naturally with such regularity and impact, enhancing these experiences through awareness and understanding has the potential

to make them even more effective. Increased awareness and understanding could result in even more modifiability for learners whose needs and challenges magnify the effort it takes for them to learn and thrive in a world that values and prioritizes neurotypical learning. This awareness could be facilitated through the publication of books and articles on SCM and MLE geared toward families homeschooling learners with SEND as well as through educational workshops at annual state homeschool conventions or on online platforms that reach the homeschool community.

Homeschooling as an Ideal Educational Option for Learners with SEND. As described in Chapter Two, homeschooling is a fast-growing and effective educational alternative. Parents of children with SEND often choose homeschooling out of necessity or desperation, but many feel unequipped to meet the special educational needs and challenges of their children and are discouraged from attempting to do so. Individualized instruction is the epitome and intended goal of special education; however, it is difficult to achieve in traditional school environments, which are limited by time, funding, human resources, facilities, number of children served, and external standards or requirements. The natural mediation that family members provide learners in a homeschool context, however, offers the epitome of individualized instruction using mediated learning experiences that produce structural cognitive modifiability. The intersection of homeschooling and the natural mediation and natural mediators that are often present can make homeschooling an ideal educational context for learners with SEND provided the mediator and environment meet the essential parameters of MLE.

The Mediational Power of a Mother's Love. An immeasurable and unquantifiable element in the study data was the mediational power of a mother's love. Each participant in the study happened to be a mother—some biological, some adoptive, some both—and each one

recognized a special educational need or disability in their child or observed their child's diagnosed need or disability not being met in a traditional school environment. Despite the intense effort and challenge the decision would bring, each chose to homeschool her child and, in doing so, became a mediator interposed between the child and his or her SEND and between the child and his or her learning.

For the ten study participants, the day-to-day, year-to-year process of taking responsibility for their children's education consisted of countless mediated interactions that produced noticeable change in their children's learning. Woven into these mothers' stories, without ever explicitly using the phrase, was a deep, abiding mother's love. Jordan described the overwhelming grief of parenting two terminally-ill children and watching them lose basic capacities and functions while still trying to facilitate growth and learning for them—a grief and pursuit both driven by love. Grace, despite the physical pain of suffering a traumatic brain injury from a rogue rock her youngest daughter was trying to throw into the water, shared that her family's "outdoor play is fabulous" and explained how her injury has been "good for [their] family" because it provided her children with opportunities to contribute to the family in new ways—a loving, grace-filled perspective on a tragic situation. Katherine conveyed amazement at her daughter's ability to do hard things despite her diagnosis of Down syndrome, offering the example of a recent experience with dental extractions: "This girl, she'll continue on through the tears, and I was like that—am like that, I should say. But I just tell her, 'I'm here right along with you, crying with you, but we'll get through it.'"

At the end of our interview, Samantha, when asked if there was anything she wished I had asked or anything else she wanted to share, mentioned how hard it is to watch her son with autism struggle to make connections with other children. She confessed, "That's the hardest.

Other than that, I think we've hit on just a little bit of everything about him." She then went on to suggest, "Maybe you could have asked me what his strengths are?" Lenora described her willingness to pause her own career as a teacher to provide her son a more positive educational environment.

Paula became overwhelmed with emotion as she expressed her concern about what would happen to her daughter when she is gone and how that even made her wonder if she should have left her in China to be adopted by a larger family. Lisa also choked up recalling the day she received her son's diagnosis and the contrast between the shock that he had autism and the relief of having information after years of asking for help for him. In her statement of advice, Laura shared the perspective that keeps her from being "super overwhelmed" like many special needs parents she knows: "You can't be supermom all the time and, honestly, sometimes keeping them alive is supermom, right?"

Julia also became overwhelmed with emotion multiple times in our interview as she spoke of her daughter's fight for life in the NICU, of weeping as she watched her daughter read her first chapter book, and of the reality of not knowing how long her daughter will live. Jennifer expressed shame over punishing her daughter for avoiding reading assignments before realizing that the avoidance was not caused by laziness but by an underlying disorder. Without ever using the word "love," each mother who participated in the study conveyed a deep, abiding love for her child that drove her choices, perspectives, reactions, reflections, and interactions with the child and his or her SEND. As noted in Chapter Two, Feuerstein described mothers as "natural mediators" who "convey feelings of self-competence, make children aware of important ideas, and teach essential behaviors," concluding that a mother's mediation "is the strongest shaping force in a child's development" (Feuerstein & Lewin-Benham, 2012, p. 32). Perhaps the

immeasurable and unquantifiable—yet unmistakable—deep, abiding love is the power source driving these mothers’ mediation.

Altering the Effects of SEND. As depicted in the extended model, the central finding of this study was that, for family members who homeschool learners with SEND, the act of homeschooling itself is a mediated learning experience in which the family member serves as the human mediator placed between the special educational need or disability and the child as well as between the child and his or her learning. Through mediation, a mediator “turns every event and every experience into an opportunity for change and for expanding the schemata of the activity for the recipient of the mediation” (Feuerstein et al., 2010, p. 35). For a child with SEND, then, the family member serving as the human mediator in a homeschool context can alter the effects of the special educational need or disability on the learner. This not only makes structural cognitive modifiability possible and produces noticeable academic and behavioral changes; it also alters the child’s attitudes and belief systems surrounding his or her SEND. This finding aligns with Feuerstein et al.’s (2010) stated belief that “although etiological barriers may exist, they can be overcome through the application of mediated learning experience” (p. 8). For children with SEND, a homeschool context can provide the “need, belief, intention, and the proper tools” necessary to “bypass the barriers of etiology and realize the option of modifiability” so that “the chromosomes don’t have the last word” (Feuerstein et al., 2010, p. 8).

Implications for Policy and Practice

The findings of this study and the extended theory and model it produced have implications for both policy and practice. This section provides an overview of the implications these findings have on special education and homeschooling policies. It also addresses implications for the practices of family members who choose to homeschool their children with

SEND, as well as those individuals who already support or have the potential to support those family members.

Implications for Policy

All fifty states allocate their special education funding to districts in different ways, the details of which have been compared by the Education Commission of the States (2021). The National Education Association (2022) estimated that \$15,047 would be spent per public school student in 2021–2022, not including additional funding for students who qualify for special education services. The National Home Education Research Institute reported that the “roughly 3.7 million homeschool students of 2021–2022 represented a savings of over \$56 billion for taxpayers” and noted that “[t]axpayers spend nothing on the vast majority of homeschool students while homeschool families spend an average of \$600 per student annually for their education,” again not including additional expenses of students with SEND (Ray, 2022, paras. 4–5).

Congress passed the Individuals with Disabilities Education Act (2004) to ensure, among other things, that state policies meet the goal of educating children with disabilities in the least restrictive environment. Rather than viewing the home as the opposite end of the spectrum of restriction, homeschooling should be considered one of several options that may be least restrictive for a child with SEND. Likewise, an emphasis on inclusion need not exclude homeschooling, as the homeschool context can provide a safe space for children with SEND to develop the academic skills that greatly challenge them while also providing numerous opportunities for inclusion in mainstream learning and extracurricular contexts tailored to their needs and challenges. While some parents need or desire their children to receive the free and appropriate public education afforded by IDEA, others believe the homeschool context is the

most effective and least restrictive environment for their child. Policymakers should identify ways to support these parents practically and financially and should implement federal or state policies that do so without infringing on their rights or imposing unnecessary requirements upon them.

In addition, the polarization that currently exists between public and home education needs to be replaced by a spirit of cooperation and a focus on the individual needs of children and families. In many contexts, homeschooling and public education are viewed as threats to one another. Rather than seeing them as polar opposites or elevating one above another, the two should be viewed as equally valuable and viable educational options. Federal and state policies need to support and equip both so that each child with SEND can receive the most appropriate individualized instructional context for his or her specific needs. Homeschool and public school educators should be able to dialogue, share resources, and support and learn from one another without feeling threatened or judged.

Implications for Practice

As mentioned in Chapter Four, family members who choose to homeschool their children with SEND would likely benefit from increased awareness and understanding of Feuerstein's (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience. Even though the data from this study showed that parents naturally mediate learning experiences for their children both by choosing to homeschool and in the myriad of interactions that comprise their homeschool experience, their effectiveness would likely increase with awareness and understanding of the essential and nonessential parameters of MLE and of the tools available to facilitate effective achievement of those parameters. In addition, training in the use of dynamic assessment tools such as the Learning Potential Assessment Device, which is

employed by the Feuerstein Institute, or alternatives, perhaps developed specifically for homeschool use, could assist parent-mediators in identifying their children's deficient cognitive functions and recognizing their capacity for modifiability, both of which would help with curricular and instructional decision making.

This awareness and training could be provided through the many organizations and opportunities that already exist to support homeschool families. Most states have homeschool organizations that offer workshops or annual conventions that include sessions geared toward homeschooling learners with SEND. Homeschool publications also provide educational articles and review books targeting homeschooling, including some that support parents working with learners with SEND. Some national organizations such as the Homeschool Legal Defense Association (HSLDA) offer resources and support specifically for those families.

The various professionals who work with homeschooled learners with SEND, such as educational therapists, speech and occupational therapists, behavioral and mental health counselors, and reading tutors, could also benefit from awareness and understanding of the theories of SCM and MLE. Because Feuerstein et al. (2006, 2010, 2015) recognized that a mediator can be any adult (or older sibling or more advanced peer) who wants to teach something to a child, these adults also have the potential to create mediated learning experiences that can effect structural cognitive modifiability in the learners with whom they work. The most important characteristic of a mediator, however, is the belief that children can change. Awareness and understanding of the potential of SCM and the role MLE plays in it can build this necessary growth mindset (Dweck, 2016) in the professionals who work with homeschooled learners with SEND.

In addition, parents could be made more aware of training opportunities already available to support their practice of homeschooling learners with SEND. This could include training in Feuerstein's Instrumental Enrichment programs, which is already available to homeschool families through the Feuerstein Institute, the MindCAP Center, and the National Institute for Learning Development (NILD). Training is also available in other educational programs based on SCM and MLE theories, such as in workshops offered through Equipping Minds (Brown, 2016, 2018a, 2018b). Equipping Minds also offers a Facebook group for homeschoolers utilizing their program. Additional support groups could be created, and training opportunities that target homeschooling parents could be instituted by these or other organizations to increase awareness and understanding of modifiability and mediation.

Theoretical and Empirical Implications

Although mediated learning experiences have been shown to benefit learners with disabilities (Kozulin et al., 2010; Lebeer, 2008; Lomofsky, 2019; Partanen, 2019) and families making the choice to homeschool their learners with SEND (Cheng et al., 2016; Cook et al., 2013; Maxwell et al., 2020; Morse & Bell, 2018), the intersection of these two phenomena had not been examined prior to this study. This study examined how families who homeschool learners with special educational needs and disabilities mediate learning experiences for their children. The study also investigated perceived benefits of homeschooling as an educational context for learners with SEND and described how Feuerstein's essential and nonessential parameters of MLE are met in the homeschool context.

This study extended Feuerstein's (2006, 2010, 2015) theories of structural cognitive modifiability and mediated learning experience to the highly individualized context of a homeschool education mediated by family members of a child with special educational needs

and disabilities. It generated a model of that extended theory that showed how the choice to and practice of homeschooling a learner with SEND is itself an act of mediation. The findings from the study elucidated numerous ways in which the homeschool environment provides a context for mediated learning and the family members working with the child act as human mediators.

The data also illustrated how the homeschooling context affords participants the opportunity and environment necessary to deliver a completely individualized educational program to their child with the potential to effect structural cognitive change. By extending Feuerstein et al.'s (2006, 2010, 2015) theories to the context of homeschooling learners with SEND, this study contributed to the information and resources available to parents seeking to educate their children. As described above, the findings from the study suggested that family members would benefit from awareness and understanding of ways to effectively create mediated learning experiences and foster cognitive modifiability for their children with SEND in a homeschool context.

Delimitations and Limitations

This study examined novel territory and was intended to provide initial research of the process of creating mediated learning experiences for homeschooled children with special educational needs and disabilities—both an important and a naturally limiting endeavor. The study was delimited to parents who had been homeschooling for at least two years to ensure that they had enough experience with the phenomenon to generate reflective responses. It was delimited to participants in the United States both for convenience and consistency in homeschooling requirements and practices. Individuals from ten families participated in the study, which limited the scope of the study but also allowed for the depth of description necessary for initial qualitative research of a novel topic.

Because finding study participants was initially challenging and required expansion of the participant criteria as well as the addition of an incentive for participation, there was not an excess of willing, qualified participants from which to choose. As I speculated in one of the excerpts from my reflexive journal (Appendix I), I suspect that COVID changed the landscape in so many ways that it also affected families' availability to participate in this study. Many of the families that were eligible for the study already faced regular medical challenges with their children, and COVID not only added additional challenges but also made the regular ones more challenging. All participants were mothers and all were white, both of which limited the gender and race perspectives represented. However, the participants came from a variety of states, represented a variety of ages, and had varied educational experiences of their own. The types of special educational needs and disabilities present in the children were also very diverse, considering the small pool of participants.

Recommendations for Future Research

Since this study made the phenomenon of mediating learning experiences for learners with SEND in a homeschool context visible for the first time, there are numerous options for future research. Additional qualitative studies could be conducted to confirm and further describe the extended theory generated by the study. Case studies of families could offer thicker descriptions of the phenomenon, as could a phenomenological study of the lived experiences of the mothers. An autoethnography of a single family could offer an even more magnified view of the phenomenon.

Likewise, qualitative studies could be undertaken to focus on specific populations within the special needs community such as Down syndrome, autism, or intellectual disability. The theories of MLE and SCM could be extended to other exceptionalities such as gifted learners or

to include more twice exceptional learners such as the two children of one of this study's participants. The effects on siblings and the financial challenges of homeschooling learners with SEND that were raised by study participants could also be examined further. Future studies could also narrow in on one or more of the essential or nonessential parameters of MLE.

Quantitative studies would likely be more challenging and less informative in capturing useful data of such an individualized phenomenon with such unique participants. However, particular instruments or curricula that are based on the theories of SCM and MLE could be examined quantitatively. Mixed method studies could also be conducted to both describe mediation in the homeschool context and measure growth on more standardized assessment instruments.

Conclusion

Ten participating family members who are homeschooling children with special educational needs or disabilities provided timelines, interviews, and statements of advice as data for this constructivist grounded theory study. From the rich experiences these participants shared, Feuerstein et al.'s (2006, 2010, 2015) theories of mediated learning experience and structural cognitive modifiability were extended to a homeschool context for learners with SEND. The Model of Extended Theory of Mediated Learning Experience for Homeschooled Learners with Special Educational Needs and Disabilities was generated to depict the central finding that the very choice and practice of homeschooling a learner with SEND is an act of mediation in which a family member serves as a human mediator between the child and his or her special educational need or disability as well as between the child and his or her learning.

The findings of this study demonstrated that the essential parameters of mediated learning experience are met naturally within a homeschool context and that family members naturally act

as mediators for their learners with SEND. This implication, in conjunction with the overwhelming presence of the situational parameters that Feuerstein et al. (2006, 2010, 2015) identified as nonessential, indicates that homeschooling is an ideal learning environment for the type of individualized instruction that children with SEND need and that is supposed to be the cornerstone of special education. The unquantifiable, immeasurable component of a mother's love, as evidenced in all of the participants, uniquely powers this mediation. For children with etiologically-caused disabilities, who have historically been bound by restrictive, traditional educational systems and limited by fixist mindsets, the freedom and possibility offered by mediation in a homeschool context has the potential to modify their self-perspective, their cognitive structures, the quality of their lives, and their very futures, which is the ultimate goal of education for any learner.

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APPENDICES

Appendix A: IRB Approval Letter

LIBERTY UNIVERSITY.

INSTITUTIONAL REVIEW BOARD

November 16, 2021

Melissa Dean
Lucinda Spaulding

Re: IRB Exemption - IRB-FY21-22-34 A Constructivist Grounded Theory of How Families Homeschooling Learners with Intellectual Disability Mediate Learning Experiences

Dear Melissa Dean, Lucinda Spaulding,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(iii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information

electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

Appendix B: Recruitment Information

Grounded Theory Study Recruitment Email

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Philosophy in Special Education. The purpose of my research is to investigate how families mediate learning experiences for learners with special educational needs and disabilities in a homeschool context, and I am writing to invite eligible participants to join my study.

Participants must be adults who have been exclusively homeschooling a child (age 7-21) with special educational needs and disabilities **for at least the past two years**. To be eligible for the study, the child being homeschooled must either have a medical diagnosis of a disability (e.g., Down syndrome, cerebral palsy, autism, vision impairment, etc.) or an educational diagnosis of a special need or disability (e.g., dyslexia, intellectual disability, specific learning disability, etc.). Participants, if willing, will be interviewed and asked to verify the accuracy of transcripts. It should take approximately 45-90 minutes total to complete the procedures listed. Names and other identifying information will be requested as part of this study, but the information will remain confidential. Participants who fully complete all stages of the study will receive a \$50 Amazon gift card as a token of appreciation.

If you are interested in participating in the study, please click on the link below to proceed to a screening survey. Once you have completed the survey, if you are eligible for the study, a follow-up email will be sent to provide consent information and schedule an interview. If the number of participants exceeds the study capacity or a participant does not meet eligibility criteria, a notification will be sent via email and the survey responses will be deleted from the study data base.

Thank you for your willingness to participate in this study. Here is the link to the screening survey:

https://docs.google.com/forms/d/e/1FAIpQLSdGV89fs94uJKcBY4ecxedhIWTUOJMcJc2aFkn0cBIWkTcfw/viewform?usp=sf_link

Sincerely,

Melissa Dean
Doctoral Candidate, Liberty University
mddean@liberty.edu

Social Media Recruitment Post

ATTENTION HOMESCHOOLING PARENTS OF CHILDREN WITH SPECIAL EDUCATIONAL NEEDS OR DISABILITIES: As part of the requirements for a PhD in Special Education, I am conducting a study to investigate how families mediate learning experiences for

learners with special educational needs and disabilities in a homeschool context. To participate, you must be an adult family member who has been exclusively homeschooling a child (age 7-21) with SEND **for at least the past two years**. To be eligible for the study, the child being homeschooled must either have a medical diagnosis of a disability (e.g., Down syndrome, cerebral palsy, autism, vision impairment, etc.) or an educational diagnosis of a special need or disability (e.g., dyslexia, intellectual disability, specific learning disability, etc.). Participants will be interviewed and asked to verify the accuracy of transcripts. It should take approximately 45-90 minutes total to complete the procedures listed. If you would like to participate and meet the study criteria, please complete the screening survey that can be found via this link: https://docs.google.com/forms/d/e/1FAIpQLSdGV89fs94uJKcBY4ecxedhIWTUOJMcJc2aFkn0cBIWkTcfw/viewform?usp=sf_link

Individuals who are eligible for the study will be emailed a copy of the consent document to sign and return. Any participant who fully completes all stages of the study will receive a \$50 Amazon gift card as a token of appreciation.

Organization Permission Request

[Insert Date]

Dear [Recipient],

As a graduate student in the School of Education at Liberty University, I am conducting research to better understand how families of learners with special educational needs and disabilities mediate learning experiences in a homeschool context. The title of my research project is A Grounded Theory Study Explaining How Families Homeschooling Learners with Special Educational Needs and Disabilities Mediate Learning Experiences.

I am writing to request your permission to post in your Facebook group to recruit study participants and would also appreciate any recommendations you may have of families connected with your organization who may be willing to participate.

To be eligible for the study, the child being homeschooled must either have a medical diagnosis of a disability (e.g., Down syndrome, cerebral palsy, autism, vision impairment, etc.) or an educational diagnosis of a special need or disability (e.g., dyslexia, intellectual disability, specific learning disability, etc.). Participants will be interviewed and asked to verify the accuracy of transcripts. It should take approximately 45-90 minutes total to complete the procedures listed. Names and other identifying information will be requested as part of this study, but the information will remain confidential. Participants will be presented with informed consent prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time. Participants who fully complete all stages of the study will receive a \$50 Amazon gift card as a token of appreciation.

Thank you for considering my request. If you choose to grant permission, please respond via direct message or respond by email to mddean@liberty.edu.

Sincerely,

Melissa Dean
Doctoral Candidate, Liberty University

Appendix C: Grounded Theory Study Participant Screening Survey

Google Doc Link:

https://docs.google.com/forms/d/e/1FAIpQLSdGV89fs94uJKcBY4ecxedhIWTUOJMcJc2aFkn0cBIWlkTcfw/viewform?usp=sf_link

Name of primary homeschool parent

Age

Race/Ethnicity

Gender

Educational Level

Email address

Phone number

City and state of residence

Family members living in the homeschool context (ages and genders)

Names and roles of other family members who may participate in the study

Name of child with special educational needs and disabilities

Age of child with special educational needs and disabilities

Gender of child with special educational needs and disabilities

Grade level of child with special educational needs and disabilities

Source of special educational need or disability diagnosis (medical or educational diagnosis)

Name(s) of special educational need or disability

Number of years of consecutive homeschooling child with special educational needs and disabilities

Current therapies child with special educational needs and disabilities receives

Co-ops and/or extracurricular activities in which the child with special educational needs and disabilities currently participates

Years (if any) that child with special educational needs and disabilities was enrolled in a public or private school

Ages and genders of other children being homeschooled within the family

Special educational needs or disabilities of other homeschooled children

Appendix D: Participant Acknowledgement Email

Dear [Recipient]:

Thank you for completing the screening survey for my study investigating how families mediate learning experiences for learners with special educational needs and disabilities in a homeschool context. Your responses indicated that you are eligible to participate in the study. Please review the consent form attached to this message. Print, sign, and scan a hard copy of the consent form and email it back to me. Upon receipt, I will respond with some date and time options for the interview. If you have restrictions or preferences for days/times for the interview, feel free to include those when you email your signed consent form.

If you have any questions about the consent form or the study in general, please do not hesitate to ask.

Sincerely,

Melissa Dean
Doctoral Candidate, Liberty University
mddean@liberty.edu

Appendix E: Consent Form

Title of the Project: A Grounded Theory Study Explaining How Families Homeschooling Learners with Special Educational Needs and Disabilities Mediate Learning Experiences

Principal Investigator: Melissa Delayne Dean, Doctoral Candidate, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must have been exclusively homeschooling a child (age 7-21) with a special educational need or disability for at least the past two years. To be eligible for the study, the child being homeschooled must either have a medical diagnosis of a disability (e.g., Down syndrome, cerebral palsy, autism, vision impairment, etc.) or an educational diagnosis of a special need or disability (e.g., dyslexia, intellectual disability, specific learning disability, etc.). Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to investigate how families mediate learning experiences for learners with special educational needs and disabilities in a homeschool context. Parents considering educational options for learners with special educational needs and disabilities do not have practical information on mediating learning experiences for their children in a homeschool setting. This study will describe and conceptualize the process of mediated learning for children with special educational needs and disabilities in the homeschool context and how to enhance it.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

1. Interview—Participants in this study will be interviewed via a video-conferencing platform or in person if proximity and schedules allow. The interviews will take approximately 45 to 90 minutes and will be recorded for analysis and transcription. Follow-up interviews or responses via email may be requested but would be shorter in duration.
2. Member Checking—Once all previous steps have been completed, you will be asked to review the interview transcript to verify accuracy in order to clarify interpretations or add additional perspectives. Member checking should take approximately 15 minutes.

How could you or others benefit from this study?

Participants who fully complete all stages of this study will receive a \$50 Amazon gift card as a token of appreciation for taking part in this study.

Benefits to society include providing information to parents considering educational options for learners with special educational needs and disabilities, serving as a catalyst for future research, contributing information to the development of educational and support materials, and

influencing policy changes that could positively support the home education of children with special needs and disabilities.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

Participant responses will be kept confidential through the use of pseudonyms. Interviews will be conducted in a location where others will not easily overhear the conversation.

Data will be stored on a password-locked computer and may be used in future presentations. After three years, all electronic files will be deleted.

Interviews will be recorded and uploaded to data analysis software for transcription and analysis either by the principal investigator or a transcriber who has signed a confidentiality statement. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Melissa Dean. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at mddean@liberty.edu. You may also contact the researcher's faculty sponsor, Dr. Lucinda Spaulding at lsspaulding@liberty.edu.

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations.

The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

The researcher has my permission to audio-record me as part of my participation in this study.

Printed Subject Name

Signature & Date

Appendix F: Timeline Prompt

In the initial participant interview, each participant will be asked to respond to the following prompt: *Please walk me through a timeline of the significant positive and negative events of your child's life that have influenced his or her education or learning.* If participants reference any supporting documents as they construct their timeline, they will be invited to voluntarily share those via email or by providing hard copies. Timeline contents may be referenced in the interview or even used to elicit responses from the participants.

Examples of optional documents that can be shared to illustrate or elaborate timeline:

- *work samples
- *psychological or educational testing reports (FERPA waiver must be signed in advance)
- *educational plans
- *therapy goals or progress notes
- *curriculum overviews or topic sequences
- *running records
- *written correspondence related to the homeschool experience
- *calendars
- *goals
- *educational plans, including but not limited to Individual Education Programs (IEPs), Individualized Family Service Plans (IFSPs), Individualized Transition Plans (ITPs), Individualized Service Plans (ISPs), or Specialized Education Plans (SEPs)
- *written reflections related to the homeschool experience
- *video footage of instruction
- *journal entries

*any other documents you may have that provide insight into homeschooling your learner with intellectual disability

Appendix G: Individual Interview Questions

1. Please introduce yourself to me, as if we just met one another. CRQ
2. Please describe your child, including his or her diagnosis of intellectual disability and any other relevant diagnoses or conditions. CRQ
3. Please walk me through the events that led you to homeschool your child. CRQ
4. Describe a typical homeschool day for your child with intellectual disability. CRQ
5. Describe a typical homeschool week for your child with intellectual disability. CRQ
6. Describe a typical homeschool year for your child with intellectual disability. CRQ
7. Describe the specific needs of your child with intellectual disability. SQ3
8. How has homeschooling helped you meet those needs? SQ1
9. Which individuals besides yourself contribute to your child's home education and how?
CRQ
10. Describe the resources you use to work with your child with intellectual disability. SQ2
11. Describe what informs your curricular choices and instructional approach to
homeschooling your child with intellectual disability. SQ2
12. Describe any experiences or aspects of homeschooling that have led you to seek out
specific training or take other steps to grow as a teacher for your child. SQ2
13. Describe goals you have for your child with intellectual disability and how they are
constructed. SQ2
14. How has homeschooling benefited your child? Provide a few concrete examples. SQ1
15. Describe a time that your child had an educational breakthrough in the homeschool
environment. SQ3

16. Describe a time of frustration that you and/or your child experienced in the homeschool environment. SQ3
17. What changes have you noticed in your child since you began homeschooling him or her?
SQ3
18. How would you describe the source of or catalyst for those changes? SQ3
19. Describe the ways you are intentional in homeschooling your child. SQ2
20. Describe how you focus your child's attention and elicit responses during instruction.
SQ2
21. Describe the ways you attempt to extend content, ideas, or skills you are imparting to your child beyond the immediate lesson. SQ2
22. Describe the ways you attempt to help your child find meaning in his or her experiences.
SQ2
23. What else do you think would be important for me to know about homeschooling children with intellectual disability? CRQ
24. Is there anything else you would like to share? CRQ

Appendix H: Participant Statement of Advice Prompt

To capture the participants' deepest beliefs about homeschooling their child with special educational needs and disabilities and their underlying educational philosophy, each primary homeschooling parent will be asked to respond to the following prompt: *If you had the opportunity to share with a parent considering homeschooling his or her child with special educational needs and disabilities, what insights, experiences, or advice would you share?*

Appendix I: Excerpts from Reflexive Journal

July 1, 2021—Research Notes

Reading about Feuerstein's life is awakening a fire in me. This dissertation is becoming so much more than an assignment or a ticket to a degree but the venue through which the world of Feuerstein can open to homeschool families, especially those with children with SEND. I feel a fire burning in me, a fierce desire to fight for children who are boxed in and limited and labeled by traditional notions of schooling and success and are held down by well-intended policies that fail them. I want this work to be an open window for families who are accustomed to closed doors.

August 6, 2021—Changing Research Design

As people like to say these days, "I have done a thing." Grappling with Dr. Collins' questions and struggling to create a detailed enough data analysis plan for Chapter 3 culminated in a conversation with Dr. Spaulding in which we discussed the possibility that grounded theory may have been a better research design than case study.

From the beginning of this process, Dr. Spaulding has encouraged me to hold loosely to my work, and I have committed to remaining open and not compromising quality for completion. We concluded our conversation with a decision that I would read the overview of GT in C&P and Chapter 4 of Laura Jones's dissertation and see if they excited me. I was to get back to Dr. S by the end of the afternoon.

While neither text excited me, I was intrigued by the description of constructivist GT and asked Dr. Spaulding for a night to read further. I downloaded some articles and started reading after the children went to bed.

I stayed up until 1am (rare for me, especially during the week) and finally emailed Dr. S to ask for the opportunity to study further and re-write Chapter 3 over the weekend using a constructivist GT design. I told myself that if she said she was not comfortable with that, I would let it go, revise my current Chapter 3, and move on.

In the night, the Lord must have continued to work in my heart and mind because I awoke excited about something and was surprised to realize that it was the study and the new design. I stalked my email all day waiting for Dr. S to respond and accepting the realization that I very much hoped she would say yes!

Her response was so encouraging: "I love your growth mindset and desire to challenge yourself. GT is the most rigorous qual design but I am confident in your ability to conduct a solid study. I will not hold you back and leave the decision up to you!!"

I continued to research and read and felt continual confirmation that this was the right move for me and my study. I responded to Dr. S: I confess to being very excited to receive this response! The more I read, the more this feels like the right move. I think this opens my study up in so many ways! I am going to journal about it tonight or tomorrow, but I have had so many thoughts in the past 24 hours ... went to bed thinking about it and woke up thinking about it! I will email you by the end of the weekend with an update and either a new Chapter 3 draft or a concession. Either way, I know I will learn from the process, and I love your comment that the journey is the destination! Just make sure I eventually end up with a finished dissertation and a degree! :)

Thank you for believing in me and encouraging me! It means more than you know!

August 6, 2021—Methodological Consciousness

Charmaz (2020) says to strive to achieve methodological consciousness (2017), and provides questions to facilitate that process. These are my responses to those questions ...

1. Why have you chosen the specific topic, methodology, and methods?

I chose my topic because I want to be a voice for children with ID and the educational practices that grow their potential as well as to empower families who want or need to homeschool their children with ID.

I honestly did not consider any methodology besides qualitative because this population and phenomenon is so unique and because there is no known study that examines the intersection of ID, MLE, and homeschooling, so this will be a first look and better suited for qualitative methodology.

I chose grounded theory because I seek to extend Feuerstein's theories of MLE and SCM to a homeschool context and to capture the process of creating MLE in a homeschool setting with children with ID.

2. How do these fit with who you are and your research objectives and questions?

Because I could be a participant in my own study, I am intimately familiar with the phenomenon on every level. I have two children with ID. I have homeschooled for almost 20 years, and I have been trained in programs based on MLE and SCM (both FIE and Equipping Minds).

My research objective is to examine the process of MLE in the homeschool environment for students with ID in order to equip parents who homeschool their children with ID or want/need to consider doing so. I also want to be a voice for educational practices that grow the potential of children with ID.

My research questions are:

Central RQ: How do families who homeschool learners with ID exhibit the essential parameters of mediated learning experiences?

Subquestion 1: How do families who homeschool learners with ID exhibit the situational parameters of mediated learning experiences?

Subquestion 2: How do family members homeschooling learners with ID exhibit characteristics of mediators?

Subquestion 3: What are the perceived benefits of homeschooling for learners with ID?

3. What version of grounded theory have you adopted and why?

I believe constructivist GT will best allow me to capture the process of mediated learning experience for learners with ID in a homeschool setting and will allow my own experiences to be valuable instead of just biases as I as the researcher construct meaning with my participants, who are living experiences that I live every day.

4. What are the ontological and epistemological assumptions, and what do these mean for the research process, researcher position, findings, and quality issues, including transferability?

My ontological assumption is that each participant in this study will bring a different perspective of the phenomenon.

My epistemological assumption is that each participant will contribute subjective knowledge to the study.

This means that in order to capture the process of MLE for learners with ID in a homeschool setting, I must speak to as many people as possible who are engaged in that process. I must hear their perspectives and experiences in their own spoken voice and written word and must attempt to capture their knowledge and experiences accurately and faithfully.

As a constructivist researcher, I must also capture my own perspectives throughout the process and construct meaning WITH the participants not for them or outside of myself.

I must make connections that are tied to the data in order to present findings that contribute meaningfully to future studies, to policies, and especially to families and their learners with ID.

I must follow the quality checklists provided by experts in this methodology and take every recommended step to maximize transferability of my work to other families homeschooling learners with ID or other SEND.

August 13, 2021—Science

On its face, my study appears to be about education and it is. More than that, however, it is about learning—how people learn, how we can help people learn, what we believe about learning, and especially what we believe about whether people with "damaged hardware" can learn. Underneath that, is science—neuroscience mainly but also general scientific understandings. The irony does not escape me. I struggled with science as a young student ... liking biology but not adept at memorizing so much material; completely baffled by chemistry to the point of literal failure I attribute partly to my very unappealing teacher whose mere body odor made asking questions a last resort and to the fact that my boyfriend broke up with me in the middle of that course leaving me heartbroken and grossly under focused on academics; and cheating my way through physics that I had to take because the smart kids just did that but not easily understanding so not really making an effort. The culminating effects of my high school science career were a certainty that I was "not good at science" and science was "just not my thing." Hence my enrollment in Geology at UNC, also known as "rocks for jocks," the vehicle toward earning my gen ed science credit with minimal despair and (supposedly) ending my experience with science forever.

Until, that is, I my life's work became the education of children with special needs, fueled by my own youngest children—a daughter who had intellectual disabilities caused by an extra copy of the 21st chromosome in every cell of her body, including every brain cell and my twins whose brains were severely damaged by bleeds that occurred shortly after their premature births. Society and many educational perspectives and systems capped their potential because of those intrinsic and extrinsic alterations in their brains, but experience told a different story and thankfully neuroscientific research in the past few decades as confirmed and captured that. Now I must seek to understand the science of learning and neuroplasticity in order to teach my own children and advocate for others like them who are trapped in a web of misinformation and grossly limiting practices and beliefs about how they learn and what they can accomplish with the right types of assessment, mediation, and belief.

August 21, 2021—Theoretical Agnosticism

Charmaz (2017) discusses this concept on p. 5 ... reading this leads me to think of my own questioning of the education of children with ID ... the way it is in public schools, the emphasis on inclusion, the pressure to have these children treated the same as their "typical" peers in the classroom and in testing; however, the underlying assumption is that those methods are valuable for anyone--the teacher, the student, the school.

August 29, 2021—Social Critique

I feel called to this study and the community of learners and parents it has the potential to help. I have also realized that there is an element of social critique to my study as it becomes

increasingly clear to me that current models and practices of special education for children with ID limit rather than grow their potential, and I feel compelled to be a voice of change for them. When I work on my proposal or read Feuerstein's work, I get lost in it and don't notice time or distractions. which tells me how much it means to me (because there are a lot of distractions in my life!).

September 19, 2021—Revising Questions

Collapse CRQ and SQ1 and re-word...How does the homeschool context facilitate MLE for learners with ID?

SQ1...How do parents homeschooling learners with ID embody characteristics of mediators?

SQ2...How does homeschooling benefit learners with ID?

October 23, 2021—Waiting Period

I am in a waiting period as expected. All of my IRB documents have been submitted. I assume no news is good news!?! At least, I hope so! After I submitted everything, I did some research on NVivo QDAS and have decided to try using that software as soon as I am cleared to gather data. I have also been researching transcription options and have found some tools that will (hopefully) make that process more manageable and affordable for me. Finally, I have continued to read more of Charmaz's work...more of her in-depth material on memo-writing and other more specific aspects of data collection and analysis.

I have also been doing some personal reading that I consider to be relevant to my dissertation work, in particular a book called *Burnout* by Emily and Amelia Nagoski. My counselor recommended it to me to help me prepare for the challenges of having primary physical custody of my children, which started right after court on the 12th. I'm about a third of the way through it and have especially appreciated their chapter on persistence and the importance of positive reappraisal. The concept is that when faced with unexpected challenges, you acknowledge the difficulty, then acknowledge that the difficulty is worth it, and finally acknowledge that difficulties are actually opportunities for growth and learning. That has been so helpful to me as I face the reality of increased parenting time/responsibilities with no decrease in work commitments/responsibilities and a great desire to finish this degree strong. I am encouraged to think of this as a season of growth rather than just an obstacle I don't know how to overcome.

December 2, 2021—Study Begins!

Received IRB Approval on Tuesday, November 16, 2021

Sent organization approval request emails to Equipping Minds (Dr. Brown) and MINDCAP (Dr. Zehr) on Thursday, November 18, 2021

Received reply from Dr. Zehr; responded with text of post and request to post Monday after Thanksgiving; no response so sent follow-up email on 12/2/21; response received saying she already posted it

Received email inquiry from potential participant; responded; participant replied that she is not eligible; responded saying to please pass along information to other families

Sent follow-up email to Dr. Brown on 12/2/21 since no response received from first request

Sent organization approval request email to Maureen Bittner at HEAV on Thursday, December 2, 2021

Sent individual emails to: [REDACTED]

Intend to send to [REDACTED]

Organization recruitment options: HSLDA, [REDACTED], [REDACTED]

December 4, 2021—Recruitment

Thanks to Dr. Spaulding recognizing that my IRB application had not actually been submitted when we thought it had, my approval came a little later than we had hoped. Thankfully, we were able to secure assistance in rectifying the problem (the IRB had attached both my current and former email address to the study) and getting an expedited approval. Unfortunately, the approval came right before Thanksgiving, which did not seem like an ideal time to ask people to participate.

I did go ahead and reach out to the organizational leaders in whose Facebook groups I hoped to paste my social media recruitment post and asked for permission to post on the Monday after Thanksgiving. One of them responded but then posted her own request instead of the text I had prepared. I shared my post with her and asked to post it after Thanksgiving, but she didn't want to post again with all of the holiday busyness. I did receive one contact from one person who saw the leader's post but because it was not as detailed as the one I had prepared, she and I both quickly saw that she was ineligible for the study since her child does not have and intellectual disability. The other one has not yet responded despite my sending a reminder email earlier this week.

I also sent individual recruitment emails earlier this week to four families in Virginia that I know to be eligible for the study and to our state homeschool support organization, but haven't heard back from them yet. I think this is just a very bad time of year to recruit participants. I am going to expand my search this week but have resigned myself to the possibility that I may not be able to schedule any interviews before the New Year. If I cannot, I will likely need to add the summer semester to my timeline. Either way, once the holidays are over and people have more space in their lives., I will reach back out to the individuals and organizational leaders that did not respond.

January 16, 2022—Recruitment Challenges

I immediately began the recruitment process but was disappointed to receive almost no response to my emails. I assumed the issue was timing, as people are generally so busy between Thanksgiving and Christmas. After the new year, I eagerly sent out requests again but have been extremely disappointed to receive minimal response to these reminder emails as well. Unfortunately, I still have no participants. I am in the process of expanding my recruitment pool and have set a goal to have the participants I need by the end of this month or begin the difficult

process of re-evaluating my current plan. Quite honestly, I did not expect this problem at all and am suspicious that COVID has changed the landscape in so many ways that it is also affecting families' availability for this study. Many of the families that are eligible for my study already face regular medical challenges with their children, and COVID has not only added additional ones but made those regular ones more challenging.

Aside from this major challenge with the study itself, I have had personal challenges that have reduced my work time over the past two months. COVID has depleted my caretaker supply, which is critical to allow me to work for large blocks of uninterrupted time. Additionally, my dad was diagnosed with terminal cancer and given only a few months to live, a devastating and unexpected blow as my dad has always been one of my most ardent supporters. He has asked me to please complete my degree before he dies so that he can witness it, which was both incredibly sweet to hear and a lot of pressure in light of the participant challenges. I know that God called and equipped me to earn this degree, so I trust Him to direct my steps and make new and unexpected paths for me. I hope to complete my study this semester and revised and defend over the summer, so that these delays only cost me a single semester (I originally hoped to graduate this spring). I am trying to meet that goal, yet hold it loosely at the same time.

February 26, 2022—Valley in the Journey

This time last year I was furiously reading, researching, and writing the early drafts of what would become my proposal. When I think back on that fruitful time and the excitement of last summer when I revised my research plan and eventually defended my proposal, I cannot help but be wistful. This fall and winter have not gone as planned. IRB approval was a little slower than expected, but family emergencies that occurred simultaneously made a blessing out of that delay. I have hit wall after wall finding participants these past three months, though, and that coupled with another unexpected health emergency (this time with my youngest daughter) and extremely sparse childcare for my three children with special needs (an issue facing so many families right now, likely including many of my potential participants) has left me feeling very discouraged.

Since my last entry, I did have six respondents complete my screening survey, which was enough promise for me to postpone the study revisions I was contemplating. Unfortunately, however, not one of them has returned the consent form or agreed to set up an interview. I sent a friendly follow-up email reminder then follow-up texts in case spam filters were capturing my emails, but nothing proved fruitful. Several of my state and national contacts and even members of my committee have reached out to others on my behalf, but I have not had a single new response to my screening survey. At the encouragement of my son, I have been emailing state homeschool organizations one-by-one from a list I found online. I had given myself until mid-February to obtain participants before pursuing revision options, but I extended that after my daughter's unexpected surgery and hospitalization and to allow time to finish emailing each of these state organizations (which I should finish by the end of this week). I intend to allow two additional weeks for any responses to those efforts before reconsidering study revisions. I first thought I would just try an incentive, but as dry as the participant pool seems to be, I am leaning more toward broadening the pool of participants beyond families with ID to families homeschooling a learner with special needs in general.

I am trying to stay encouraged but do hope that when I look back on this period a year from now, it is just a small valley in the journey and not the journey's end.

March 9, 2022—Desperately Seeking Participants

This week, I desperately joined every FB group I could find related to homeschooling and ID, special needs, or DS in a last-ditch effort to salvage my study as written. Abandoning my carefully constructed plan to connect with participants via groups I have experience or connection with and just casting it into the wind in hopes of somehow locating ten families who will actually complete and return the consent form and follow-through. I have had three glimmers of hope. First a woman responded to one of my posts and after communicating via Messenger, she completed the screening survey. I am hopeful that the consent form will follow shortly. Then ■ sent her completed consent form, officially becoming my first committed participant. Finally, another person completed the screening survey this afternoon, likely from one of the posts. But after receiving my email with the consent form, she wrote me an email that was difficult to receive (see email attachment). I hope that my response reassures and clarifies for her (see response), but regardless, it has made me think a lot about the families I seek to reach.

April 11, 2022—Reflections on Second Interview

Yesterday, I interviewed G for my study. This was my second interview but the first with someone I do not know from a previous context and the first since revising the study and reposting all of the recruitment materials (35 people have completed the new screening survey thus far!).

I felt like I could have talked to G for hours. She is homeschooling five children with special needs, has a recent TBI herself, is a military mom, and is an adoptive mom...so many connection points. A great challenge in interviewing is not responding or dialoguing with the participants.

I was so inspired by G and how articulate she is about her homeschooling journey and her kids needs. She has quite a story and I hope I can capture it adequately. I wanted to talk to her longer, but when I learned she could not look at the screen due to her head injury, I made myself stop at an hour.

April 24, 2022—Doors Opening

Since my last entry, I have revised my study to expand the participant pool and add a gift card as a token of appreciation for participants. Those changes have resulted in 39 people completing my screening survey. I just completed my eighth interview today and have three consent forms in hand from participants I hope to interview within the next week. If any of them fall through, I have several reminder emails left to send as well as a significant number of potential participants to whom I did not send a consent form yet. I am actively working on transcription and analysis of my initial interviews as well as proposal revisions to reflect the changes I made.

While the unexpected delay was discouraging, it also taught me something I hope to always remember. While I never gave up on completing this degree, I did have to come to a place of accepting that possibility. I knew in my heart that God wanted me to recognize the value of the journey over the final product of a completed dissertation and diploma. Once I accepted that (not

willingly at first), He opened doors for me in incredible ways, and I knew that He had been looking for surrender from me, not resignation. The distinction is subtle but one I needed to see. I read a quote a few months ago that I put on my fridge for a time: "She knew she couldn't, so He did." That is what I feel like I experienced this semester, a realization that if I complete this degree (and I do believe I will), it will be a work of the Lord through me, not a work of my own effort that He has just blessed.

May 3, 2022— Homeschooling Children with SEND as an Act of Mediation

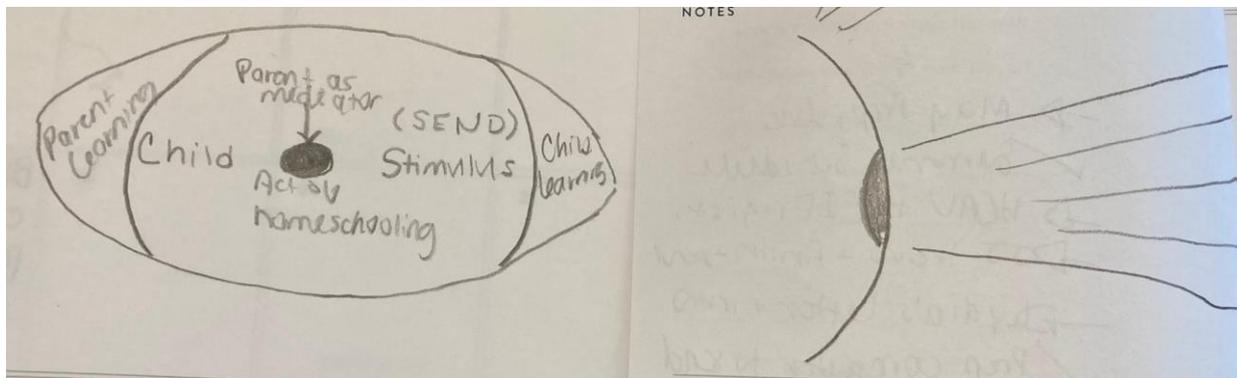
I completed my tenth interview yesterday and am in varying stages of transcription/analysis with the ten participants. I am already struck by the commonalities within these incredibly unique, diverse experiences. At least three of the participants have cried while sharing their incredible journeys with me. My questions were designed to elicit HOW these families mediate learning experiences for their children with SEND in a homeschool context, but yesterday I had the epiphany, that I am witnessing more than that. Even in these early stages of analysis, I am realizing that homeschooling a child with SEND is an act of mediation in itself. The essential parameters of mediation are there--Intentionality, Reciprocity, and Transcendence--as are most (if not all) of the nonessential parameters. When I think of Feuerstein's visual model, I see homeschooling as the act of mediation that the parent undertakes to help the learner interact with his or her disability. The parents mediate the disability with the learner in the homeschool context with the ultimate goal of the learner being able to navigate that as independently as possible. Surrounding all of that is learning—the child's learning and the parent's learning of how to help the child and at the heart of it all is vision—the act of seeing the child—his gifts, his needs, his challenges, his potential. Now to attempt to capture that.

May 16, 2022—Stepping Stone

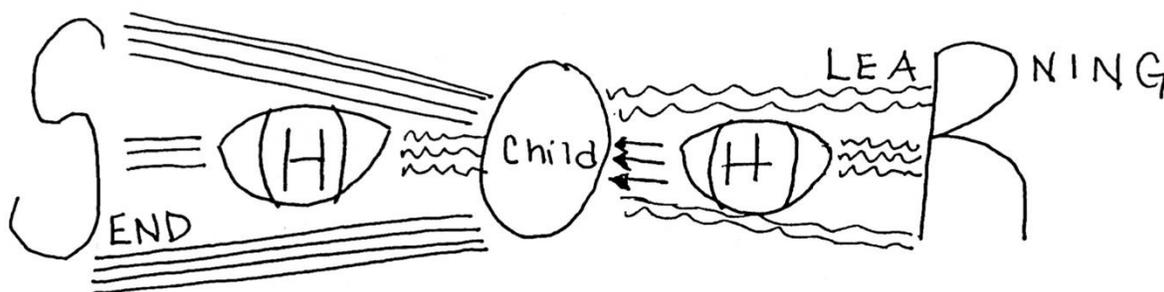
I am so inspired by the stories of my participants and the need for the research I chose, so that is highly motivating! Listening to the recordings and reading the transcripts of the interviews encourages me to persevere. I also have ideas for research and sharing beyond this dissertation, so I am beginning to view it as a stepping stone in the journey, rather than the destination. That is a definite mindset shift from where I began. I have learned so many things about my purpose and my passions through my coursework and the proposal development stage. I am grateful to have reached this point but mindful of the focus and effort it will take to finish strong. I just hope that the external issues and challenges in my life don't trip me up too much in these final laps.

Appendix J: Model Sketches

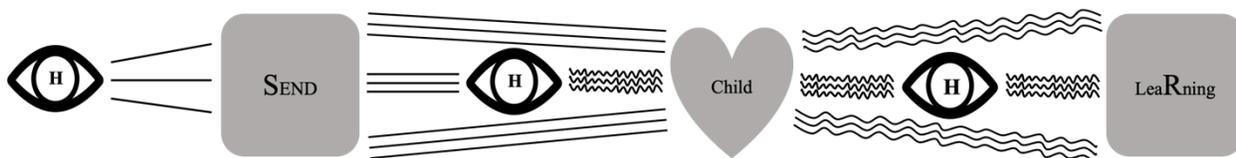
Initial Diagrams:



First Sketch of Model:



Final Model:



Appendix K: Contact Log

Participant	Consent Form Received	Interview Conducted	Follow-up Email	Transcript Review	Chapter Content Review	Additional Correspondence
Jordan	3/7/22	3/12/22	3/13/22	5/14/22	6/20/22	5/15/22, 5/19/22
Grace	4/8/22	4/10/22	4/11/22	4/13/22	6/20/22	
Katherine	4/7/22	4/14/22	4/15/22	4/21/22	6/20/22	
Samantha	4/18/22	4/18/22	4/19/22	4/28/22	6/20/22	
Lenora	4/19/22	4/20/22	4/21/22	5/3/22	6/20/22	
Paula	4/18/22	4/21/22	4/21/22	5/7/22	6/20/22	4/22/22
Lisa	4/11/22	4/23/22	4/24/22	5/8/22	6/20/22	
Laura	7/7/22	4/23/22	4/24/22	5/13/22	6/20/22	
Julia	4/21/22	4/30/22	4/30/22	6/9/22	6/20/22	
Jennifer	4/18/22	5/2/22	5/2/22	5/23/22	6/20/22	

Appendix L: Sample Timeline

Timeline

- 2003
 - 4/17 -- Birth
 - 39 weeks gestation
 - Prenatal use of cigarettes, alcohol, cocaine
 - 6/20 -- DNA testing
 - 9/9 -- Adopted
- 2004
 - 4/8 -- Hearing testing
 - 12/4 -- DNA testing
- 2005
- 2006
- 2007
 - 12/16 -- Adopted
- 2008
- 2009
- 2010
 - 9/23 -- Broke left wrist (buckle fracture)
 - 10/26 -- Psychological testing,
 - ADHD (Inattentive), Pervasive Development Disorder, Mental Retardation, Moderate Fetal Alcohol Syndrome
- 2011
- 2012
- 2013
 - 2/25 -- Sleep study = Severe sleep apnea
 - 4/29 -- Remove adenoids & tonsils
 - 7/29 -- Sleep study
 - 9/17 -- Psychological testing
 - 10/3 -- Sleep study
 - 11/19 -- Testing for clinical research trial (failed)
- 2014
 - 6/17 -- PT 1/week
 - 10/13-18 -- Make-a-Wish trip to Florida
- 2015
 - 11/2 -- OT 1/week *3/22 - Move*
- 2016
 - 12/12 -- Adopted
- 2017
- 2018
 - 11/2 -- Aquatherapy 1/week
- 2019

- 1/4 -- Bone infusion
- 7/23 -- Bone infusion
- 9/15 -- [REDACTED] accident

2020

- 6/30 -- Bone infusion

2021

- 2/7 -- Sleep study
- 6/11 -- [REDACTED] accident
- 6/29 -- Bone infusion
- 7/13 -- Testosterone shots (monthly)

Timeline -- [REDACTED]

- 2006



- 7/16 -- Born at 23.5 weeks gestation
 - Bilateral IVH Grade IV; Periventricular leukomalacia (PVL)
- 8/8 -- EEG
- 9/3 -- Echo = Atrial Septal Defect
- 9/15 -- Cranial ultrasound
- 9/26 -- MRI
- 10/9 -- Discharged from hospital and placed in foster home
- 12/19 -- Oxygen discontinued

- 2007

- Early intervention 3-4/week (PT, OT, SP?)
- 1/29 -- Nissan surgery, 3 days in hospital
- 5/7 -- Started rice cereal
- 8/22 -- Rolled from back to stomach
- 11/1 -- Army crawl
- 11/2 -- Said "mama"
- 12/16 -- Adopted

- 2008
 - Received Early Intervention PT, OT, SP
 - 8/8 -- Discontinue & remove feeding tube
 - 9/23 -- Surgery to close feeding tube opening
- 2009
 - 12/4 -- Botox
- 2010
 - 2/25 -- Eye surgery (focusing)
- 2011
 - 1/6 -- Surgery on left foot
 - 3/19 -- Botox
 - 9/11 -- Surgery on eyes
 - 10/28 -- Botox with Versed (didn't go well)
- 2012
 - 7/13 -- Botox
- 2013
 - 1/31 -- Botox
 - 4/10 -- Psychological Testing
 - 8/30 -- Botox (with sedation)
 - 10/13 -- Occupational Therapy 1/week
 - 10/13 -- Physical Therapy 1/week
 - 11/6 -- Echo & EKG = ASD healed

- 12/5 -- Surge [REDACTED]
- 2014
 - 11/18 -- PT 2/week
- 2015
 - 2/15 -- OT 2/week
 - 3/17 -- Surgery/rebuild left hip
 - 3/22 -- Move
 - June -- PT 4/week; OT 2/week
 - 7/25 -- Botox
 - Counseling at [REDACTED]
 - 11/1 -- PT 2/week, OT 2/week
- 2016
 - 1/25 -- Occupational Therapy 1/week
 - 2/1 -- Discontinue OT
 - 2/22 -- Psychological Testing
 - 3/24 -- Physical Therapy (Addler)
 - 4/4 -- Counseling 1/week
 - 5/26 -- Botox
 - 6/1 -- PT 1/week
 - 7/22 -- Surgery both feet
 - 9/23 -- Educational Therapy 3/week (discontinued 1/2017)
 - 12/12 -- Adopt [REDACTED]
- 2017
 - 8/1 -- Pause PT
 - 10/9 -- PT 1/week
- 2018
 - 2/12 -- PT 2/week
 - 6/21-23 -- [REDACTED] to New York
 - 10/19 -- MRI
 - 12/28 -- PT 1/week; Aquatherapy 1/week
- 2019
 - 6/3 -- PT 2/week
 - 9/15 -- [REDACTED] accident
- 2020
 - 6/24 -- Fall, 6 stitches over left eye
 - 8/21 -- Seizure during counseling appointment >>> ED
 - 8/21-23 -- CHKD
 - I think it was a combination of serotonin syndrome and a reaction to diazepam. Took her off amitriptyline, diazepam & zoloft.
 - 8/31-9/1 -- CHKD
 - 11/12 -- Upper GI Scan

Timeline --

- 2012
 - 5/12 -- Birth
- 2013
 -
- 2014
 -
- 2015
 -
- 2016
 - 12/12 -- Adopted
- 2017
- 2018
 - 11/2 -- Aquatherapy 1/week
- 2019
 -
 - 9/15 --  accident

- 2020
 -
- 2021
 -
 - 6/11 --  accident
 -

incomplete



Appendix M: Sample Interview Transcript

The transcript below is from participant Jordan. All identifying information has been redacted.

SPEAKERS

J, Melissa Dean

Melissa Dean 00:13

Okay, though I'm not going to ask you this question, please introduce yourself to me as if we just met one another. So we're not going to bother with that one. Don't want to waste your recording, though. And then I don't really know if you these are, these are just guided questions like I have questions. But also, I don't at all have to stick to them. And I don't have to ask them all because of the type of study I'm doing. But if you, I'm going to just tell you this one, but then you can, you might want to just tell me, this is in writing or whatever this might be on your timeline. Okay, so it's please describe your child, including his or her diagnosis of intellectual disability and any other relevant diagnoses or conditions. But my next question, so you can kind of pick which one you'd rather start with, you could tell me that or that could all be on your written stuff. Because you already kind of put some of that on the screening. But the next one is walk me through the events that led you to homeschool your child so if you'd rather get into that, because then it goes on into more specifics about homeschooling. So you can decide how you want to give me the background

J 01:16

Most of the diagnoses are already on the different paperwork I have to just give to you. I can go through very quickly [REDACTED]'s Duchenne's Muscular Dystrophy and fetal alcohol syndrome and intellectual disabilities. Now he has cataracts and then there's a lot of other things just go along with his muscular dystrophy. [REDACTED] has cerebral palsy and PTSD, depression, anxiety, non-epileptic seizures, and [REDACTED] has late infantile onset metachromatic leukodystrophy, which causes a whole host of other diagnoses—intellectual disabilities, and quadriplegic and tube-fed, seizures, and autonomic storming. The homeschooling question, that goes back to when my oldest children were young, and we were looking at where do they go to school? How are we going to school? And I was adamantly against homeschooling, and that was a whole God thing, that God really challenged me very specifically on the question of homeschooling. And was I willing to let him dictate that part of our lives, and that has just carried through with all the kids since God called us to homeschool way back with [REDACTED], and we haven't felt that he's called us to do anything different.

Melissa Dean 03:15

Was there any part of you when you transitioned from typically developing kids to kids with special needs that questioned that, or made you

J 03:28

Lots of days when it's hard! Absolutely! But not, not really. Because the fact that there, for example, Benjamin has severe, severe osteoporosis. When we had our first appointment with

him, because he had, steroids are the only treatment for his form of muscular dystrophy, he's been on steroids for a long, long time, which causes osteoporosis. We had our first appointment with the bone clinic people and they looked at me and said, he has very severe osteoporosis. How is it possible that he hasn't had any broken bones? Simply because he only has people around him who really care about him. He doesn't have a hired aide at school. He's not being asked to do things because people don't understand his diagnosis. People know what they can and can't do because family's always around. That has meant that he hasn't had injuries that a lot of boys with Duchenne's have to deal with.

Melissa Dean 04:42

I don't, I'm going to ask these three questions in a lump because I know you well enough to know they're, you're gonna laugh at them and it's okay. Describe a typical homeschool day for your child with intellectual disability, week, and year—and I use the word typical loosely. But just you probably get a gist of, just trying to

J 05:09

So let me start with ■■■, okay? ■■■ being blind. Intellectually, she's about three months old. That's where her brain is degenerating. And she is not non vocal, but she's nonverbal. And so for Joy, a typical school day is music or sisters reading books to her. She's doing her physical therapy. She, but there are no educational goals where she is actually improving. It's mostly just connecting with her and letting her hear language and music. For Sarah,

Melissa Dean 05:59

Can I ask you a question about ■■■ first? With ■■■, you said, no educational goals but connecting with her, do you see growth in the connections? With the things you do? Like? How do you how do you? How do you adapt your

J 06:20

It would depend on what you mean by growth? I mean, we see, you know, the fact that she is still responding. The fact that she finds ■■■, enjoyment, in what we're doing, you know, is that growth? For her probably. You know, for her, having her feel loved and connected and cared for is the highest objective we have. No, she's not even supposed to be alive. And yet she's still responding. And she's still can identify voices, and we just want her to have the happiest, most comfortable existence she can possibly have. And those are goals. So are we hitting those goals? Yes.

Melissa Dean 07:12

Tell me about, you told me in a personal conversation about when she's stressed out that there's music that she likes. Tell me about that and tell me how you figured that out.

J 07:24

So she has, I mean, different things can cause ■■■ stress, whether it's she's physically uncomfortable, whether she's drifting into an autonomic seizure, whether she's cold, you know, there's, there's different things. She's on are already on a lot of pain medicines. But she has shown an interest in music, and we know she likes music, because if it's playing—somebody else's playing it—we will notice her paying attention. And it was actually her older sister ■■■

that discovered she likes things with a strong beat, a strong melody line and an upbeat beat. And Taylor Swift seems to really fit that bill. She just, when she's having a hard day, we have an iPad in there playing Taylor Swift music for most of the day, and she has favorite songs, and she has songs that she'll start fussing when they come on because she wants something else.

Melissa Dean 08:27

How do you know the ones that are her favorite? How does she tell you?

J 08:30

She doesn't fuss. She goes from being unhappy to smiling and sometimes even in her way, sings the along, which is interesting.

Melissa Dean 08:45

Okay, sorry, I just had to hear a little more about that.

J 08:51

Especially if we have to do it in public. Time for some Taylor Swift therapy. So as [REDACTED] is, a lot of her school right now is practical living skills, and reading and discussing things. We are sort of working on a unit study on Nigeria primarily just to give us a framework for read alouds and some geography and some history. She reads independently, she reads aloud to her brother and sister. She loves to do art work. We do art, usually, well she is usually coloring every day, but then we'll do art projects also, twice a week. She helps cook which helps her with concrete numbers. which are hard for her. And measuring which is also very hard and following, along with directions. She also has an extensive amount of physical therapy and occupational therapy, which I guess he would count as PE; there's a lot of it. And we do read alouds with everybody. So it's really a typical day, so much fun to either reactive to what else is going on. [REDACTED] is very introverted. And intellectually he's functioning around a three year old level. He can draw a few letters, which he will do when he signs his artwork. And he will listen to read alouds for a short amount of time. He doesn't have any concept of numbers, doesn't have any concept of time. So a lot of what he's doing, and what he has done most of his life is just kind of go along with whatever I'm doing with another sibling. So he'll be listening in on a discussion or a read aloud or whether I'm explaining something or current events. But he doesn't talk a lot. And he can't use his hands for very long before they're too tired, so. But he's very, very happy. He doesn't really be—because of his intellectual disabilities, he doesn't really want to do more than that. He really is very comfortable being by his family and doing the interaction he's doing. We have done penmanship practice in the past, we've done math curriculums in the past, and he does not, he doesn't really progress on them at all. So he is a wizard at mazes. So we will often do mazes, or tracing or coloring. And sometimes I'll give him worksheets that are tracing letters. And he'll be able to do that for a little while. Most of it's just being a part of what's already going on with somebody else.

Melissa Dean

Mazes! Who would have thought?

J

Mazes. It's actually a side note, it's one of the things I recommend to homeschooling parents for young children for penmanship. Because it's a great way to learn eye-hand coordination, without the burden of remembering the shapes that you're trying to make. Right. And it's fun. It's not as schoolish, right? So, yeah, if you have somebody who's resistant to using writing utensils, that's a really good first step.

Melissa Dean 13:35

Some of these I feel like you've already answered, but just skip that one. Well, no, actually, I won't. How would you say homeschooling has helped you meet the needs that your children who have this—needs specific to their intellectual disability?

J 14:03

It's a really good question. Because they're not in an externally structured environment. For example, with [REDACTED], if she has a day that she is more interested, more responsive, we can increase the interaction she's having. If she has a day that she's just really sleepy, we can let her have those days and it doesn't have any negative bearing on goals, some external goals that somebody has, nobody is going to be pushing her to do what is past her coping skills. The same thing with [REDACTED], you know, he has days where, especially if there's been a medical procedure, if he's had a bone infusion, or he's already had physical therapy and two doctor's appointments, then he really needs to have a day, you know, two or three days of listening to music, and you know, maybe we're watching educational videos, or maybe we're doing read alouds. But we can, we can flex what we're doing based on what their energy levels are, what their pain levels, or what their medication needs are. And that's, that's another thing, having them at home, we can customize what their medication needs are, for pain management, seizure management, it's not requiring a third party to make those decisions or be limited in what they can, can do with them. And then the situation, you know, for [REDACTED] that he is physically safer being at home than he would be in an educational setting. Just, and [REDACTED] too, I mean, actually, the neurologist thinks a lot of the reason why Joy has lived as long as she has, is because she is surrounded by people who are interacting with her all the time. And that has impacted her quality of life, but also her longevity, so

Melissa Dean 16:12

Wow. How many years past her quote unquote, life expectancy is she

J 16:17

Four and three quarters at this point, almost five, may even be more than that. She's two months shy of her 10th birthday. And she was only supposed to live so she was five. And she was supposed to be at five, blind and deaf and non-responsive. And she's not; she's just not. And they have no explanation for it. So maybe maybe the constant stimulation and being around people who want to interact with her make a difference.

Melissa Dean 16:53

So the speaking of people, that's actually one of the next things I was going to ask you, what individuals besides yourself contribute to their, their home education and how

J 17:12

when you say home education, does that exclude for example, physical therapy,

Melissa Dean 17:18

No—everything that has to do with Yeah,

J 17:23

Okay. So they, they all get physical therapy, they [REDACTED] gets occupational therapy that contributes, and we have a goldstar physical therapist who doesn't see her role as just physical therapy. So they are constantly learning how to—learning life skills related to their own ability to do things with her. And at different points in time, their other siblings have been involved in different aspects. You know, [REDACTED] got piano lessons for a while. And there are games, which, you know, for where they are intellectually, games are huge, because it allows them to practice accounting and taking turns and planning ahead, which are hard for them. Caregivers are frequently involved, not planning, but I will often hand them a book and say you're reading these two chapters out of here, or you're going to sit next to them while they work on this worksheet and help them stay on task or you're going to follow this recipe with them. Which has been interesting because some of my caregivers can't follow recipes, either. So that's been a teaching two people how to follow a recipe. And then, of course, you know, [REDACTED], steps in and helps and so I rope in anybody.

Melissa Dean 19:15

For sure, yes. No, I can completely relate to that. Oh, my gosh. Okay, so that's people. What about resources? You've mentioned several.

19:26

Wow. I forgot. We have dogs. Oh, yeah, and I don't want to leave that out. Because [REDACTED]—Benjamin can't really do this very much—but [REDACTED] definitely plays a role in training her dog and actually helping manage the other dogs too. But that requires her learning how to do dog training and then following through and doing it which that's a skill that she needs to have. So yeah, we even rope in the pets with school and stuff.

Melissa Dean 19:58

So you consider that part of the support for your kids?

J 20:02

Absolutely. Well, [REDACTED], our oldest but smallest dog, he literally does have service dog status. He gets up besides [REDACTED] when she's having a neurostorm and means that there are less times we have to give her medication for her autonomic storming because he can often bring her out of it. But with pressure and the warmth that he and he will, he's been known to sit on top of her in her wheelchair with she's having a neurostorm on for hours. So, yeah, absolutely.

Melissa Dean 20:36

Would he be allowed to go to school if she was at school?

J 20:43

Maybe. We'd have to work up to it. But [REDACTED] sleeps with [REDACTED] every night and has eliminated eliminated the night terrors that she's had. We were at a place where we were literally talking about medication for her night terrors that were so bad. And because he is there every night, so he is an emotional support dog. He is not a service dog, but he does do his emotional support very well.

Melissa Dean 21:15

Okay, so other resources that you use, like you've named several, but if. Are there any that you haven't mentioned that, like the mazes and the dogs, and obviously the therapies?

J 21:29

Extensive home library, going to the library, anytime we go anywhere. The internet, lots of these movies, we use audio books, we use games, a lot of games. We have a lot of manipulatives of different kinds, art equipment, and then everything in the house. So whether it's cooking in the kitchen or swimming in the backyard or walking through the neighborhood, or it seems like there's always a conversation going on. That's we're driving somewhere. That answer that?

Melissa Dean 22:17

Yes, for sure. When you're making decisions about the approaches curriculum, from year to year, month to month, day to day, whatever, what do you feel like informs your choices?

J 22:32

Boy, has that changed over the years? informs my choices? Is that another way of saying why do we choose a over b? Or or?

Melissa Dean 22:42

Yeah, like? I guess so. I wrote the question, you'd think I know what I mean by that. But like, whatever comes to your mind, like, what do you, what do you consider? What do you factor in? What do you look for? Like? I don't know, when you're making choices about say, Okay, so like, for example, you said with [REDACTED] that you were trying some curriculum, but there was no progress. So you stopped doing that. What, like drives your choices? What? And I'm not saying it's one thing, like,

J 23:20

my limits changed a lot over the years. Um, one of the top most important things that nobody talks about is, am I willing to use it? So it has to be easy enough to use, especially in my life, that I'm willing to do it. So at this point in my life, doing a hands on unit based curriculum is not going to happen. It's just not gonna happen. Konos is not happening right now. Plus, that's not my style. Hardcore classical education is not my teaching style. So I find the first and foremost factor is my teaching style because I have to be comfortable using it first. Secondly, would be its format. Not really interested in using if it's like a curriculum curriculum. That's only going to give me the questions. I need something that's going to give me the answers. I don't want have to go look for that. That was more of an issue with my older kids than it is now just because of the level they're at. Cost, accessibility, accessibility, meaning how hard is it to purchase? How much do I have to do to be able to use it? You know, do I have to print a whole bunch of stuff cut out a whole lot of stuff, and that's not gonna happen. So it has to be really just add water kind of a

curriculum. I'm not gonna lie, it has to be somewhat visually appealing. It can't look Stupid. And then it also needs to meet the very unique needs the my kids have, at this point, it was easier to use adaptive curriculum to me, my kids needs when they are neurotypical, that's a little bit trickier now. And I don't want to only be able to use 10% of a curriculum because they can't do it the other 90%. So that's, I think that's most of it.

Melissa Dean 25:46

All right, were there any experiences or aspects of homeschooling that you, you've had such a extensive career with different types of learners, so you can focus on just these three if you want to, or in general, whatever—that led you to seek out any kind of training or equipping or support for yourself as a teacher as your as their teacher or as in your role as a homeschool parent?

J 26:33

With the exception of online research and books, no. And it's largely just because I don't have time. It would be better if I did. But I don't have the time and energy to do it.

Melissa Dean 26:55

I'm learning already by reading these that—these aren't judgment like that. I think it's more because I do realize, as I say that, like, I hope that nobody takes that as judgment because it's more to capture: What are how are you equipping yourself? And what, do you know what I'm saying? So I probably, you didn't take it that way?

J 27:21

No, I didn't take it that way. Revise it just from the I mean, you are looking into the how different people use homeschooling to meet the needs of their kids and how they're equipping themselves is a valid question. And the fact that because being the parent and caregiver of somebody with children with a lot of needs, it's necessary, but not, not easy to do. Right. There are difficult to meet that need. So I'm, I'm willing to say that. Okay,

Melissa Dean 27:57

Okay, so you don't think that I should reword that? I don't think so. Sorry. That's a total aside.

J 28:02

No, I don't know. But I think you can, you can, if you were going to introduce the question, say, you know, we're just trying to figure out, how are parents doing? Do you feel overwhelmed with the needs and not able to access stuff? You know, that's okay.

Melissa Dean 28:21

Okay. Which I think, I think that comes—yes, this is helping me for so many reasons. Okay, can you sort of already answered this, but I think,

J 28:36

Actually, can I go back and address something else from earlier?

Melissa Dean

Yes, of course.

J

I did not when you're talking about resources, and people involved. [REDACTED] has both a counselor and a psychiatrist. And that has been a good resource. And that has been a place where I have drawn some, some training we just talked about not necessarily training, but information and wisdom on how to help her. And then her doctors have also been a resource in how to meet needs for all of them. So not every doctor in the same way in the same amount, but I don't want to leave out their—you know, I mentioned physical therapy, but their medical team has also been a real resource for them. And they probably don't even realize how much—with education, so

Melissa Dean 29:41

Is there a particular one that stands out to you?

J 29:46

Dr. [REDACTED], has been huge has been real helpful.

Melissa Dean 29:51

Is that the palliative care?

J 29:54

And actually, her neurologist, just because they help me understand more how they think—and how they process information. And then that that's just helpful from the educational standpoint.

Melissa Dean 30:10

How has that helped?

J 30:14

Well, specifically with [REDACTED], you know, looking at what's physically happened in her brain, helps me realize that there's some things she just may not be able to do. And that's okay. It's not, it's not a judgment. It's just, if her brain isn't processing that information, her brain might do a workaround, and it might not. So knowing what her hardware is able to do. The same thing is, you know, somewhat true with fine motor skills, just you know. And sometimes her occupational therapist helps with that, too. But does that answer that question?

Melissa Dean 31:00

Yeah, no, that's very, I definitely have to be careful not to start talking myself. That's one thing—I don't think I'll be as tempted to do that with other people as I am with you, because I want to be

J 31:12

Well, with counselors or psychiatrists, the idea is, you know, there have been times that Sara has been dealing with so much emotional stuff she couldn't learn, you know, there was too much else going on.

Melissa Dean 31:26

When you when you gain that awareness from a physician, or some thing she goes through? Does it change your educational goals for her in that period of time?

J 31:44

It takes the pressure off, frees up the timeline, at least my expectations of what's necessary. And again, comes back to the benefit of being at home, that we're not tied to any external timeline. So you know, if we need to take a week or two off because of something catastrophic that's happened, we can do that. You don't have to power through.

Melissa Dean 32:20

Right. When you talked about ■■■, you said, I don't, I'm not gonna say the quote because I don't remember the word for word, but basically, that your, he—maximizing her joy and her comfort and her days is one of your primary goals for her. What would you say, can you tell me each one of them, like your goals for them as a child with an intellectual disability, and how you, and I don't mean like, you need to give me a list of your about like a schooly kind of goal, but like your goals for them as learners and people with these, that do have these limits? What goals do you have for each of them? And how do you, how do you come up with the goals for that specific child?

J 33:14

Well, I'll start with, I should have more concrete goals, especially for ■■■. And I am not good at that. So this is prefaced with that. But with ■■■■■, his goals are not too different from ■■■'s. Partially because of his developmental level and these intellectual disabilities, he is losing his ability to do things and he doesn't understand time. He does remember that he used to be able to do more than you can do. He doesn't understand his diagnosis. He does not know that he is terminal. But probably, well, he probably only has the use of his arm to play with toys for a couple more years. So letting him enjoy everything he can enjoy is a top goal for him. And I used to be frustrated, how much he wanted to do video games until I realized that in a video game, he can vicariously have all the physical skills he no longer has. I need to let him do that while he still can. So you know, what kind of educational goals would one have for a three-year-old and it's to feel heard and to be able to interact with people around them in helpful ways and to be easy it's. For him a lot of the goals are very similar they're just a little bit more long-term. ■■■, helping her grow up and understand the world as best as she is able to within the limits of her understanding, helping her learn that just because she uses language very well doesn't mean, she has to also understand what she's saying and not just say words. For ■■■ some her the goals with her are being kind and loving. Learning about God and faith has been huge recently. She sometimes gets very resentful about where she is in life, and that is not really, that's not really a thing with ■■■■■, but she does sometimes. So, walking through who is God? And how can God let this happen to you and giving her the skills to what is the question I'm answering?

Melissa Dean 36:54

Goals, you're doing it.

J

Trying to figure out how and help with her figure out how independent and she does, at some point, and helping her live with whatever that decision is. And that's, you know, that goes back to Faith, you know, is she willing to be content with where God has her in life with whatever that is? That might be married with kids, that she might not, and trying to decide where she is right now what that's going to look like without destroying her hopes and dreams. And that's kind of a tricky road. But it needs to be more than just telling her that certain things are going to happen or not happen in the future. She needs to be able to walk through that process, think through that process. Giving her enough to do that she's challenged, but also really controlling the content because she doesn't process things well. So yeah, she's 15, but I wouldn't hand her the same books I handed 15-year-old Beth Anne to read because she wouldn't be able to process the content of them. That's tricky. Sarah, it's helping her figure out what how independent she can be and then helping her get the paper challenge in the process.

Melissa Dean 38:41

Okay. You sort of have answered this too. But if there's any more that you want to share, do because since I, how has homeschooling benefited your child? Can you provide a few concrete examples, but you already did some of that. So don't feel obligated if you know, [REDACTED] and the bone breaking? Definitely a concrete example. But if you

J 39:12

Medication management and

Melissa Dean 39:16

[REDACTED] being alive. Yeah, I think you've definitely hit that but if there's anything else

J 39:27

[REDACTED] doesn't understand social situations very well. Everyone's her best friend. And I think she would have a lot of headache. She would have been through a lot of negative experiences in a classroom setting just because she wouldn't process how to interact well in those settings. Rules. She does much better in very small social settings. So that's another one.

Melissa Dean 40:05

This could be each child or one child or multiple ones for whatever you want to do describe a time that your child had an educational breakthrough in the homeschool environment, it can be teeny little thing or a big thing, whatever, just some breakthrough.

J 40:28

Potty training [REDACTED] took five years so that was huge. [REDACTED] learning to walk three times. Sara learning to read. That child really doesn't get phonics, but she could read. I mean, she reads at a sixth grade level, probably.

Melissa Dean 40:56

So how did that feel for you? And her?

J 41:02

I didn't really feel much credit because it was really her doing all the work. But it was fun because it opened up a whole new world for her, not so much accomplishment, just enjoyment, seeing the joy she gets out of it.

Melissa Dean 41:29

Okay, on the flip side, describe a time of frustration that you and or your child experienced in the homeschool environment.

J 41:40

Sara and numbers—teaching her to add and then having her come back and it's just gone. And it's gone. ■ would learn a couple of letters, and then it would be done. So the information loss is. Also with ■'s non-epileptic seizures, she had amnesia, lost a lot of things. And so that's a frustration. And then also, you know, ■'s losing his physical abilities, things he used to be able to do, he just can't do anymore. So sadness that they some some are things he used to be able to do but he can't do. And then that he thought we were making progress, and really we weren't making progress.

Melissa Dean 42:46

Back to the letters and numbers for ■. So, you're teaching her to read and it's working, quote, unquote, and you're teaching her numbers and it feels like it's working, but then it's not working? Can you think back to how you and or she would handle or react to each of those two contrasting experiences?

J 43:17

Well, with the reading, it felt almost normal. So my assumption was that we were just everything was going to be normal, you know, well, this one's just going along normally. So all the rest will just go along normally. And then, at first, it was just, like, disbelief and confusion: What do you mean? We did this. What do you mean, you don't understand? Trying to explain it and just getting this blank stare. And, and in the processing, you know? Is this behavioral? Am I just dealing with somebody who just doesn't want to? Or am I dealing with somebody who literally can't do this and stepping back and saying, we'll try this, this again another time and see whether this works, or try a different approach. And luckily, I'm older now. I know to take a step back. I wouldn't have done that 20 years ago. I would have been, with my older kids, I probably would have been assuming it was behavioral. And I'm not. ■ can be obstinate. She absolutely can, but it wasn't so. So a lot of it was just dismay and confusion. I don't really understand why A is working and B is not, but

Melissa Dean 44:58

So when you, when she was just learning to read, there probably were like, some hard parts of that. What was, how was that different? How did you work through so,

J 45:12

But we didn't have to see she, she took to reading very easily. And it didn't take. she has a very large image library of words. She doesn't sound them out, she gets them in context. And she's very and maybe that's because she hears so much adult conversation that she fills in the right words, automatically. Now she may not understand it, and how much she's actually

understanding of what she reads. She's getting the storylines and enjoying it, but if you slow her down and actually ask her the meanings of words, that's very, very difficult for her. The patterns and math and logic don't work that way. You can't just get a visual image of something and run with it. But she did with reading so we didn't have roadblocks really to. Now spelling, she doesn't spell; she really doesn't spell. And because of her occupational therapy challenges, writing, typing, writing anything, like that is also very hard, so that adds into alternative ways to work on learning spelling. She can't. The kinesthetic of writing things out was very hard. Requires creativity and lots of patience. Are you finding this to be this is helpful?

Melissa Dean 47:15

Yes, extremely. What changes have you noticed in your child, okay, you've homeschooled them all the way through all the way through. So it wasn't to get started? You've already answered this too—ways you are intentional. Anything else you'd want to say about your intentionality in terms of your children's, your, the whole, everything you described to me is, you seem to work for capturing that.

You're being intentional about—I don't want to put words in your mouth, but like,

J 48:05

Well, I mean, I view homeschooling as a lifestyle. So I try to look for learning opportunities, pretty much in everything that you do in life. There could be more sit down and specifically learn things. So in terms of being intentional, that's hard just because there's so many competing things, or tension, it's easier to just bring them along with what's already happening. But yeah.

Melissa Dean 48:42

When you are working on something specific with probably [REDACTED] more than the other two, but it can be any of them. How do you focus her attention and elicit responses from her or it could be [REDACTED] or [REDACTED], any of them?

J 49:06

Sarah is highly distractible. If we have to do something where she really, really has to focus, we go in a room where there aren't people and try to minimize distractions as much as possible. And have just her with one other person working on something whether that's up in her room or [REDACTED]'s room or someplace like that. But that is that was that's what I would do. Make sure that we eliminate distractions.

Melissa Dean 49:40

So if she's doing something frustrating that you feel like there's potential for her to be able to do so it's not like one of the things you've learned, this is just not in the cards but this is something that it's challenging to her. How do you manage that situation? Or maybe manage is the wrong word. How do you facilitate that?

J 50:03

Well, first of all, see if I can break it down into smaller pieces, so that she can see success and help her see the benefits of persevering. And see if there's any ways that there can be accommodation for what's frustrating. She is frustrated if people see her not succeeding and motivated when people see her succeed. So if she's struggling and not succeeding, then I would

remove any people observing that process so that she could feel like she could try and fail without the burden of people watching that. But primarily, it would be just trying to think outside the box in terms of ways to break the whatever it is down into smaller pieces to find success.

Melissa Dean 51:10

What is what motivates her?

J 51:15

People. She's a very extroverted. People. She seeks people's good opinions.

Melissa Dean 51:31

We've sort of talked about this a little bit too, but that's okay, maybe there's more. Describe...

J 51:38

I apologize. Medication alerts.

Melissa Dean 51:43

Describe the ways you attempt to extend content, ideas, or skills you are imparting to your child beyond the immediate lesson?

J 52:03

So, we, [REDACTED] was interested in her cultural heritage. So one year for her birthday, she got DNA testing. And we found out she's primarily Nigerian. So we are learning about Nigeria, and printed out coloring pages for Nigerian people and houses and cooking Nigerian food. But in cooking Nigerian food, we're talking about the different ingredients they use, we're talking about measuring things, following step by step directions, taking out the globe and talking about proximity, but then also talking some about relative distances. So it would take, you know, this many hours to fly to Nigeria, but it would only take this many hours to fly to Florida. So let's, you know, measure out how long that actually is, if we, you know, had blocks for hours and trying to get another representation of that. Culture, weather, where they get their food, how they go to school, and how that relates to their own lives, but endless

Melissa Dean 53:32

Can you talk about practical living skills for her? Do you use external, future oriented things to motivate or encourage her to see the application of things or does she not really motivated in that way?

J 53:52

Oh, she sometimes is. Yes and no. Yes. For those things that I think she is likely to use in the future. If she's learning the skill, I'm not going to necessarily take your For example, She she wants to learn to drive a car. She doesn't have a whole lot of common sense. She is very, very easily distracted. single tasking. Yeah. And she has a power wheelchair and has can't make it through a day without hitting something. Not to mention, I don't know that she could read a map. There's a lot of other things going on there. She wouldn't be able to buy gas because she doesn't understand money. But you know, she still needs to know that cars need fuel. And she could learn how to put gas in your car. She could learn how to use a credit card she could you know,

when she's talked to me about learning to drive, you know, my short answer is wait. If you can start making it through a significant amount of time without hitting something with your wheelchair, then we can talk about learning to drive a car. I said, But [REDACTED], when you back into a bookshelf and destroy it, that it could have been a person and with a car, that means they're dead. So the damage one could make with a mistake with a car is far bigger than a mistake with a wheelchair. So we have to get good at this first, you know, so there's some things I don't take to the logical conclusion. I don't I don't want to communicate to her that just because other people do it doesn't mean that she well. I don't want to demoralize her, so generally, I just redirect.

Melissa Dean 56:10

I get that too. Okay. Describe the ways you help your child find meaning and his or her experiences. That's a very big question. I know.

J

That's really hard.

Melissa Dean

Don't worry, we're getting near the end.

J 56:35

That's really, it's a huge area of struggle right now with Sarah. [REDACTED] has a great sense of humor, and finds great delight in making people laugh. And finds great delight in giving people presents. Whether it's something he's colored or a back scratch or whatever, so Benjamin is contented with what his life has for him right now. That's such a huge blessing. It doesn't really apply to [REDACTED]. [REDACTED] is struggling with well, why am I here? What am I good for? And that's not an unreasonable question for a 15-year-old. But lots and lots and lots of 15-year-olds don't actually know what the future holds for them. And we talked about that. We've been reading a lot about Joni Erickson Tada and how her life was completely upended. And yet God has brought a lot out of that but not all when she was 17. She was in the rehabilitation hospital for a very, very, very long time. And yes, she can drive now and yes, she was an international organization and yes, she writes books and records music, and she makes cards and paints and does all these things but she didn't do it all at 17 and so it's okay for right now not to have those answers. Which is what I fall back on a lot. But it is hard for Sarah to see just what's wonderful outside in her life have value and so trying to find ways that she can have value here and now. It's tricky.

Melissa Dean 58:48

Okay. What else do you think it would be important for me to know about homeschooling children with intellectual disability?

J 59:08

There's no walls and there's no target. Once you walk through that doorway of special needs, it is so vast and so huge. I mean, you said intellectual disabilities but even that, you know, this is somebody who has mental health issues wrapped up with that or physical issues wrapped up with or PTSD and a history of trauma wrapped up with that. There's so many variables and that's something when we first walked through the door of special needs, I really did not understand, and I thought that one couldn't be better group categories special needs, that even if you're

talking about cerebral palsy as a category, just that has such a huge range of potential or not potential and possibilities and difficulties, it's impossible to quantify. It's impossible to say any one person's experience is going to be like another's. And I guess the second thing is, it's, I hope the homeschool community is getting better at this. I don't think they are great for neurotypical kids, but maybe better for special needs. But talking about the challenges honestly, and not trying to give the perception that we have it all together and have all the answers. Home schoolers are really bad at that, really bad. Actually, let me take it a step further. Christians are really bad at that. Churches are really bad at that. And because of that, homeschooling can be isolating. And you feel judged because it is not the norm. And we have a tremendous lack of support.

Melissa Dean 1:01:38

Is there anything else you want to share that I haven't asked about?

J 1:01:45

I touched on it with my last thing, a bigger role mental health plays in the special needs world, I think is not talked about enough. Both for family members--siblings, parents, caregivers—but also individuals with special needs themselves. And whether it's caused by the actual diagnosis, or just a result of or historic history that's contributed to it. But it's huge. And it impacts education in a big way. I think our educational system really doesn't recognize how much mental health plays a role is the ability for children to learn. You can't learn when your entire world is upside down. You know, are they doing school in Ukraine right now? Well, maybe just to give the kids something to do, but they're not going to be able to learn anything other than the fact that they're sleeping in the subway. And the same thing is true with with kids, you know, I don't think the therapies the treatments can become routine, that doesn't mean that they're less emotionally exhausting for everybody. And it's just so easy to overlook that.

Melissa Dean 1:03:16

What do you, alright, this is the phrase I use with my kids for just, probably right to use in this situation, but if you had a magic wand, if, and you could kind of like recast? How would it look different to address that? Everything like I don't want to I don't want to limit that. It could be recast. resources that are available to you recast the view of providers you work with, recast your own children's views like

J 1:04:11

I'm a little removed from the homeschool community in general. For a while adopting children with special needs, and homeschooling them was viewed as the ultimate sacrifice. You were held out as some kind of heroes. And that's unfortunate, because that that means there's a lot of pressure on that there's a lot of assumptions. And that's not why somebody should be doing it either. So I hope that's not still the case. Yes, I want people to adopt. Yes, I want people to adopt children with special needs. And yes, homeschooling has been what we chose to do, but having those expectations put on you by other people I still think it's an uphill battle of homeschooling in general in the church. But homeschooling and then special needs, and the church is another battle and then you put those together. So having it be something that's supported and encouraged in the church and understand that it's a different kind of mission field with its own challenges. Missionaries, I know, have said that churches frequently don't understand what they deal with. I think it's similar I think there's more resources now. But again, they're isolating

resources their online resources and books and anything else that could be recast. I mean you don't really know the way to make it less hard.

Melissa Dean 1:06:44

We can always hope. Anything else before I stop?

Appendix N: Sample Statement of Advice

The following statement of advice was submitted by participant Jordan:

“If you had the opportunity to share with a parent considering homeschooling his or her child with special educational needs and disabilities, what insights, experiences, or advice would you share?”

You know and love your child best. No one has more motivation to see your child succeed than you do. Don't be intimidated by people who tell you that you can't do this.

Count the cost. Homeschooling is both the best and hardest path you will ever choose. Do your research. Look at your life. Be realistic about this decision.

Get support. Have people you can call on when it gets hard. Join social media groups that will be encouraging. Be prepared for times when you will need support.

Put your relationship with your child first. If you are at a difficult place in your relationship with your child, put away the school books and work on building that relationship. You will always be your child's mother...you won't always be their teacher. All progress is progress. Keep track of progress and celebrate all successes no matter how small it might be in the eyes of the world.

Don't be concerned about other peoples' timelines and expectations. You know your child. The goal is to make progress, not meet someone else's expectations.

Be intentional about fun. It's so easy to get caught up in the overwhelming to-do lists that we forget to laugh and dance and play music and watch funny videos. Have fun. BE a fun person. Enjoy spending time with your child(ren). Build memories and traditions that they will cherish for the rest of their lives.

Appendix O: Final Code Book

This is the final NVivo code book generated at the completion of this study.

Name	Files	References
Benefits of homeschooling	7	9
Accommodations in co-op	1	3
Changes since beginning to homeschool	2	4
Freedom to be more of a student of my child's learning and development	1	1
Telling pretending stories	1	1
Trying to connect with classmates	1	1
Constant stimulation	1	1
Control over accommodations	1	1
Flexibility	8	13
Changing things to make it work for our family and for him	1	1
Flexibility	1	1
Needing to switch it up	1	1
Schooling year-round	1	1
Waiting an extra year	1	1
We didn't have to abide by any school schedule.	1	1
Goal Breakthrough	2	2
Gradual understanding that no one is going to force her	1	1
Homeschool Rhythms	1	1
Developing character values	1	1
I think of homeschool as more seasons than anything else	1	1
There's only so much time and energy to go around.	1	1
Using routines	1	2
It has to be better	1	1
Learning to read!	1	1
Medical benefits	1	1
Meet them where they are	1	1
Networking	1	1
Parental motivation	1	1
Positive behavior changes	1	1
Happier	1	1

Name	Files	References
Improved behavior at home	1	1
Less stress and pressure	1	1
More able to learn	1	1
Protection from injuries typical of diagnosis	1	1
Realizing the power of stories	1	1
Building your own philosophy	1	1
School places a different value on things	1	1
She's really gaining	1	1
Shifting perspective on school	1	1
Social benefits	2	2
Taking care of them socially	1	1
Unique opportunities	3	5
Adult friends	1	1
Interacting with grandmother	1	1
Learning manners, etiquette	1	1
Making amazing projects	1	1
Positive co-op experience	1	1
Traveling	1	1
We have unique opportunities to be places that other people can never go.	1	1
Nobody wants to be told what to do every moment of the day	1	1
Value of one-on-one attention	1	1
Variety	0	0
A lot of different experiences	1	1
Challenges	1	3
A lot to ask of them	1	1
Balancing needs	1	2
Balancing patience with efficiency	1	1
Challenging aspects of intelligence	1	1
Cognitive challenges	1	1
Concerns for the future	1	2
Constantly present	1	1
Difficult for me as well	1	1
Difficulty for siblings	1	1

Name	Files	References
Doing the same few lessons over and over again	1	1
Exclusively focused on hom	1	1
Facing multiple challenges among children	1	1
Getting frustrated	1	1
Giving up standards	2	4
Grief and Sadness	1	1
Hard to weed out with her other diagnosis	1	1
Impatience	1	1
Issues that made it difficult	1	1
It's like Groundhog Day with them.	1	1
Lack of support	2	2
Lost learning	1	1
Mental Gymnastics	1	1
Mental health affects learning	1	1
No walls and no target	1	1
not easy	1	1
Parents don't understand that and get frustrated and feel like they're failing their children	1	1
Pervasive fatigue	1	1
Pressure	1	1
Removed from typical parenting	1	1
Struggling to connect	1	1
Struggling to get plugged in during COVID	1	1
Special needs community has taken a big hit during the pandemic	1	1
Talking to them about the hard things	1	2
There's going to be a different season for everything and you just have to learn to adapt and grow.	1	1
This isn't easy	1	1
Two kids in totally different places	1	1
Untitled	1	1
Weariness	1	1
Weird space to be in	1	1
Winters are hard	1	1
Choosing to homeschool	7	10

Name	Files	References
Best and hardest path	1	1
Considering the whole picture	1	1
It's not for everybody	1	1
Personal decision	1	1
Resisting homeschooling	1	1
Teacher listening and acting	1	1
Essential Parameters	0	0
Intentionality and Reciprocity	5	5
Adapting expectations	4	4
Adjusting to the season	1	1
Advocating	4	5
Fostering self-advocacy	1	1
Growing skills	1	1
The big advocate and center point	1	1
Becoming more understanding	1	1
Breaking it down into smaller pieces	1	1
Choices based on teaching style	1	1
Choosing curriculum	3	5
Completely readjust how I was doing homeschooling	1	1
Considering public school	1	1
Constantly adjusting to our kids' different needs	1	1
letting kids direct the learning	1	1
Deciding to keep him home	1	1
Do things that are going to motivate my kids	1	1
Figuring out what your child needs and when they need it	1	1
Finding the hyper-focus thing	1	1
Fostering a love of reading	1	1
Getting down on the floor with her	1	1
getting her on the right path	1	1
Homeschooling as a lifestyle	1	1
Identifying underlying problem	4	5
Listening to what your kid needs	1	1
Not making them do things we don't have to do	1	1

Name	Files	References
Noticing what draws her attention	1	1
Positive reinforcement	1	1
preparing her	1	1
Preventing overwhelm	1	1
Prioritize relationship	1	1
Providing explicit instruction	1	1
Pushing through	1	1
Questioning as mediation	1	1
Rhythm of our day	1	1
Scheduling the week	1	1
Schooling year round	2	3
Sneaking in skills	1	1
Started teaching at day one	1	1
Temper her curiosities	1	1
Unschooling transition period	1	1
We have a rhythm	1	1
Mediation of Meaning	3	3
Allowing them to do whatever activities are important to them	1	1
Pushing through	1	1
Seeing what really makes them light up	1	1
Untitled	1	1
Transcendence	4	8
developing leadership skills and healthy lifestyle...skills	1	1
Learning new responsibilities	1	1
Making connections	1	1
Reading opening world	1	1
Working on life skills	1	1
Non-Essential Parameters	0	0
Awareness of Being a Modifiable Entity	2	2
Believing in her	1	1
Developing neural pathways	1	1
Doctor affirming	1	1
Feelings of Competence	4	7

Name	Files	References
All progress is progress	1	1
Dad wanting to homeschool	1	1
Finally making some progress with math	1	1
Fostering confidence	1	1
Gaining confidence	2	3
Math used to be something that would make us all cry.	1	1
No longer feeling like they're a failure	1	1
Not putting caps on her	0	0
Goal Seeking, Goal Setting, & Goal Achieving	9	14
Ability to be herself	1	2
At the end of the day, the academics aren't everything.	1	1
Collaborating with therapists	1	1
Confidence	1	1
Connecting with her	1	2
Deriving goals from strengths	1	1
Feeling Connected and Supported	1	1
Goal is for him to become independent	1	1
Identifying big picture goals	1	2
Independence	1	1
Initial goals	2	2
Trying to change opinion of learning	1	1
Making learning the best it can be	1	1
Seeking something social and consistent	1	1
Self-awareness	1	1
Untitled	1	1
Individualization and Psychological Differentiation	6	10
Adapting curriculum	1	1
Adapting Martial Arts	1	1
Allowed us to work on the level she's at	1	1
Exploring interests	2	2
Find a way of explaining	1	1
Finding what they gravitate to	1	1
Following the kid's lead	2	2

Name	Files	References
Freedom in homeschool	1	1
Giving my son his only way to communicate	1	1
Going down rabbit holes	4	5
It just falls out of his head immediately	1	1
Know more about them than anyone else	1	1
Knowing to try a different approach	1	1
Modifications	1	5
No right way to homeschool	1	1
No two families do it the same	1	1
one-on-one lessons	1	2
Parent seeing strengths	2	2
Pursuing his interests	2	2
Recognizing child's needs	3	3
Recognizing child's uniqueness	2	3
Recognizing learning style	3	4
Recognizing needs	5	8
Relying on public school system	2	2
She needed patience	1	1
Special needs kid needs special kind of teaching	1	1
Starting where you are	1	1
Tailoring the class to what my kids need	1	1
take the time to dive into those interests further	1	1
These passions take a lot of time	1	1
Working best one-on-one	1	1
Knowing your child best	3	3
Trust your instincts	0	0
Optimistic Awareness	0	0
Believing children with SEND still can learn	1	1
Celebrating successes	1	2
Crackerjack smart	1	1
I don't see these deficits anymore	1	1
Observing	1	1
Overcoming fear	1	1

Name	Files	References
Put away ideals	1	1
Regulation and Control of Behavior	3	4
Able to be in a relaxing environment that does not produce anxiety	1	1
Accomodations for transitioning	1	2
Avoiding more transitions and changes	1	1
Being engaged	1	1
Calming them through nature-based play	1	1
Enabling space to cope	1	1
Focusing attention	3	3
Minimizing distractions	1	1
Getting sensory needs met	1	1
He's able to focus in life	1	1
Holding each other accountable	1	1
Holding her accountable	1	1
Increasing their endurance	1	1
Learning to self-pace	1	1
Losing focus	1	2
Meeting sensory needs through sports	1	1
Motivating him to do things	1	1
Needing breaks	1	1
Needing redirection	1	1
Needs help focusing	1	1
Overcoming sensory issues	1	1
That has been an absoulte breakthrough	1	1
Using Minecraft for leverage	1	1
Working on pacing	1	1
Search for Challenge, Novelty, & Complexity	0	0
Sense of Belonging	1	1
Experiencing acceptance from other children	1	1
Hard for her to make friends	1	1
Huge tribe of people	1	1
Nurturing social environment	1	1
Realizing there's a whole community of people who think the same way that I do	1	1

Name	Files	References
Slave to the school schedule	1	1
Sharing Behavior	0	0
Books are just like a common language for us.	1	1
Crying with her	1	1
Empathizing	1	1
Facilitating life with her	1	1
It made our family closer	1	1
Noticing difficulty complying with adult demands	1	1
Negative Messages	0	0
hearing you can't do it	1	1
In-laws resisting	1	1
Lacking confidence	1	1
Receiving message that educating kids with SEND at home isn't possible	1	1
Teachers dismissing	1	1
Our family culture is reading	1	1
Parent Needs	4	4
Being patient with yourself	1	1
Finding support	1	1
Handling the hard days	1	1
It takes drive	1	1
Keeping perspective	1	1
Looking for a break	1	1
Looking for acceptance	1	1
Looking for accountability	1	1
Looking for community	1	1
Looking for friends	1	1
Making your own choice	1	1
Needing a break	1	1
Needing a chaperone to be safe	1	1
Not sure they knew how smart she was	1	1
Parent recovering from brain injury	1	1
Reduce pressure	1	1
Special needs parents don't have a community.	1	1

Name	Files	References
We adopted each other	1	1
Policy and Support Implications	1	1
different philosophy about the relationship between the state and homeschooling	1	1
doesn't seem fair	1	1
Homeschool moms have a lot to teach in how to make situations work	1	1
Needs to be a lot of development in the area of curriculum, specifically for special needs families to give them confidence to do it.	1	1
The community can do better than that.	1	1
The state can do better than that.	1	1
There needs to be more connection, without requirements, from the public school system.	1	1
Wondering about mediated learning	1	1
Resources	6	17
Assessing	1	1
Being fascinated	1	1
Dad contributing	1	1
Emotional support dog	1	1
Getting the nugget I needed	1	1
I rope in anybody	1	1
Moms as greatest resource	1	1
Practicing social skills with therapist	1	1
Receiving guidance from curriculum	1	1
Resources available	1	1
Rope in the pets	1	1
School lacking resources	1	1
Securing resources from a friend	1	1
Service dog	1	1
Utilizing travel time	1	1
Vision	1	1
Realistic expectations	3	3
Never looked back	1	1
Recognition of Need or Disability	2	5
Realizing something more going on	1	1

Name	Files	References
Seeing beyond behavior issues	1	1
Seeing underlying issue	1	1
Recognition of Problem in Educational Context	2	4
Believing she wasn't smart	1	1
Competitive Environment	1	1
Inadequate Responses	0	0
Negative Environment	0	0
Deficit at forefront at school	1	1
Limits of school setting	1	1
Lack of MLE	1	1
sterile environment	1	1
Stressed the teachers out	1	1
Trusting them too much	1	1
School's Reputation	1	1
Negative Experiences	1	2
Being asked to leave	1	2
Being discounted	1	1
Being forced to read	1	1
being sued	1	1
Couldn't understand the kids' needs	1	1
doing his thing	1	1
environment not conducive to learning	1	1
Expressing frustration with school	1	2
Frustration leading to homeschool	1	1
Ignoring him	1	1
kept getting sick	1	1
Letting her get by with things	1	1
Made it impossible for kids to have relationships with other kids	1	1
No flexibility	1	1
Not addressing goals	1	1
Not being supported in school	1	1
Not connecting	1	1
Not differentiating instruction for him	1	1

Name	Files	References
Not wanting to be that mom	1	1
Other parents rejecting	1	2
Over time, I've sort of forgiven them	1	1
Public school experience	1	1
Pulling them out	4	5
Punching the goalie	1	1
Recognizing classroom limitations	1	1
Regressing	1	1
Repeating kindergarten	1	1
Released us from that really difficult situation	1	1
Resisting diagnosis	1	1
School not identifying SEND	3	4
Struggling to see public school as good option	1	1
Teacher and parent getting frustrated	1	1
Teacher didn't know	1	1
Teacher was checked out	1	1
Teachers not giving strategies	1	1
Teachers zooming by	1	1
They stopped teaching her after a while	1	1
They were not comfortable with her.	1	1
Trying to move him back into the classroom	1	1
Wasn't going to take the time to understand	1	1
What else do you want me to do	1	1
Pressure--All the kids are broken when you're done	1	1
Well, who are her peers	1	1
Worrying she wouldn't be able to tell me	1	1
Recognizing strengths	2	4
Understanding language	1	1
Seeing emotional need	1	1
understand what they're passionate about, what they're interested in, and how they learn	1	1

Appendix P: Sample NVivo Subtheme Query

Below is a sample query of the subtheme Regulation and Control of Behavior. Identifying information has been redacted.

Sample Subtheme Code Query: Regulation and Control of Behavior

All identifying information is redacted.

Files\█-8 April 23 Interview Transcript - § 1 reference coded [3.25% Coverage]

Reference 1 - 3.25% Coverage

She does get frustrated. She gets frustrated because she's smart, and she's well, I'll just figure this all out, which then translates in her head to I should be able to get this immediately. Why can I not get this immediately? And I'm like, K, ready? Edison did it 100 and like 27 times before he figured it out, like come on, give yourself a break, like, so it's a lot of like, take the breath. Think about it. I always tell her I'm like, you can't think when you're that upset. Like when you get that mad at yourself, you can't think so you have to breathe; you have to calm your body down to be able to even process what is happening. Because when you're angry, you don't think, so we've worked really hard in the last like six months to get to a point of, you know, thinking and just breathing. And sometimes she'll put her hand over her heart and be like, oh yay, I'm alright. Like you have to get your nerves to stop freaking out so that you can think. And that's most of, like her being able to actually push through and make that happen. But I think the biggest hurdle is just like not getting so worked up over, I don't know it right away. Because a lot of things she can get right away. So it's hard when she can't. And every so often we leave it and we come back, but not very often. Because usually when I say okay, like we're done, like this isn't working. And then she's like, No, no, no, no, Mama, Mom, no, no, no, no, like, I'll do it. I'll do it. And I'm like, you can't just like put it aside for the next half hour and come back. No, no, no, no. So she likes to ask, she doesn't like to leave it and then come back to it, so. But the breakthroughs are usually the breathing and like calming it down and then looking at it again. Because 99.9% of the time, as soon as she does that, she gets it immediately, which is annoying. I'm, we just wasted like having a meltdown. Like if you thought about it for a second. But she'll also like read ahead and do like the harder problems in math rather than doing the ones they're actually asking her to do because it builds on.

Files\█-2 April 10 Interview Transcript - § 8 references coded [6.29% Coverage]

Reference 1 - 0.47% Coverage

one of my boys with autism, we figured out has to if he is immersed in sports, he just it meets his sensory needs, and he's able to focus in life, he's able to get schoolwork done now and not argue with us about every single thing. So he's swimming year round.

Reference 2 - 0.34% Coverage

So we do a lot of nature-based play, I have found that that calms them and it helps them learn. You know, we're talking and learning through our outdoor play. Our outdoor play is fabulous.

Reference 3 - 0.24% Coverage

We have a trail, we've been working on hiking with them to help increase their endurance and they can make it two to three miles now.

Reference 4 - 1.46% Coverage

that led to the summer of math. They had to catch up by a certain time here. Oh, they weren't allowed to do Minecraft until they caught up the entire year with math. And that was a really hard summer. And they did. And so this year, I this year Teaching Textbooks sends me a daily email. So that I can check and make sure and they both have low A's 90 and 91. But they both have an A in Teaching Textbooks. And they very rarely have to ask us for help. So the fact that they are doing it. First that they're not complaining that they're doing it and that they're able to do it so well that they're getting a good grade. For us that has been an absolute breakthrough. The self pacing and that they understand the importance of working one lesson at a time to get where we need to be. That's been a really big break.

Reference 5 - 0.33% Coverage

Because that's a really hard thing to learn. And especially I find with kids with autism, that's a really hard thing to learn. But we've been working on pacing for a few years now

Reference 6 - 1.34% Coverage

learned very quickly that Minecraft was the answer to all of my problems. And they weren't allowed to start playing Minecraft till they were 12. And once they did, that was my leverage, I guess. So the rule was you get 30 minutes in Minecraft after all your schoolwork is done. But if you do your schoolwork without complaining, then, oh I'm sorry an hour, if you do your schoolwork that complaining I will give you an extra half hour of Minecraft. But if you complain, I'll take away a half hour. So it's somewhere between 30 and 90 minutes. Well, it took a total of two days for them to realize they were not going to complain about their schoolwork. And it's been two years now and they very rarely complain about their schoolwork.

Reference 7 - 0.78% Coverage

So they can work on whatever subject they feel like doing. But they have to get it done at a certain time. So I think they've naturally kind of taught themselves with the repercussions now that they're in great

books, they have to write these massive papers. And after they procrastinated and had to stay up really late one night to write a paper, now they work, you know, ahead of time. So natural consequences, I think help.

Reference 8 - 1.32% Coverage

But at the age of 10, they both developed a severe sensory issue to the touch of paper. Yeah, both of them. So we went through OT. It really didn't help at all. But just touching paper has been a process. So that is, for example, why I signed them up for woodshop. Because that's, you know, working on that, and then with them being a drama class, they have to have the script and they have to hold it. So any sneaky opportunity that I can find where it's especially in a peer group, because they're gonna freak out less than a peer group, and they're gonna go along with whatever, you know, everyone else is reading the book, I'm gonna read the book and not make a big deal about it. But that has been a journey in and of itself.

Files\█-2 Statement of Advice - § 3 references coded [5.32% Coverage]

Reference 1 - 0.71% Coverage

our children are able to get their sensory needs met

Reference 2 - 1.09% Coverage

And they're able to be in a relaxing environment that does not produce anxiety.

Reference 3 - 3.52% Coverage

if my kids are feeling like they're out of sorts, then they know, they know themselves, and they know what to do to calm themselves down. And each one of them is able to go off and do that thing. Whereas if they were in a public environment, they couldn't do that.

Files\█-3 April 14 Interview - § 2 references coded [0.49% Coverage]

Reference 1 - 0.30% Coverage

And I appreciate that. And I don't want to put it on them. I specifically try not to, but at the same time I make them all hold each other accountable.

Reference 2 - 0.18% Coverage

You have to hold her accountable wherever she can be accountable. Some days, it's hard. I

Files\EL-5 April 20 Interview Transcript - § 2 references coded [3.05% Coverage]

Reference 1 - 0.93% Coverage

He responds well, to he, he likes positive, you know, reinforcement, like if I comment, like, I like how well you've done that. And he also responds well to not bribery, per se, but like, if I want him to do

something, I'll say that he can play on his video games or have screens. And so that will motivate him to do things. So I had tried to having like little rewards. But mainly it's just the screens that motivate him, that interest him.

Reference 2 - 2.12% Coverage

I've tried a lot of different things. I've learned that you, it has to be done in like short spurts. You can't expect him to pay attention for a really long time. I've tried letting him have like fidgets and things like that, but that usually serves as a distraction rather than helpful. I usually have to create a space that's not, like where there's nothing he can grab a hold to that's like a clean place for him to work. Let's see, other ways to help him with his attention. A timer sometimes works, like just setting it for brief intervals and saying, Okay, I'm gonna set this timer for three minutes, let's see how much you can complete in three minutes. More, more like kind of beat the timer, not not as like a negative thing, but more as a positive reinforcement. I'm trying to think if there's anything else I've done to help him with his attention. We did we have tried medication, that's, um, but honestly, it's not as effective as I would hope for it to be. But it does help a little bit.

Files\█-1 March 12 Interview Transcript - § 1 reference coded [0.95% Coverage]

Reference 1 - 0.95% Coverage

█ is highly distractible. If we have to do something where she really, really has to focus, we go in a room where there aren't people and try to minimize distractions as much as possible. And have just her with one other person working on something whether that's up in her room or █'s room or someplace like that. But that is that was that's what I would do. Make sure that we eliminate distractions.

Files\█-7 April 23 Interview Transcript - § 3 references coded [10.98% Coverage]

Reference 1 - 0.57% Coverage

it's hard to pull him away from what he loves to do, which is reading and building Legos. So when it's time for schoolwork, he has to pause those things. He'd rather not pause those things. But when he does the work, I know that he's engaged in it.

Reference 2 - 4.87% Coverage

it's true that a lot comes easily to him, that he hasn't had to work very hard to do some of the things that kids are doing at his age. And yes, he can get frustrated very easily because he expects it to be easy. And then when it's not easy, he hasn't had a lot of practice managing those big emotions that come. What we usually do, of course, in the therapy that work on some strategies for, you know, deep breaths and taking a break and all the things, so I'll remind him of those. I just try to stay really calm and not push him because I know no good will come of that. And he is able to manage them better than he was when I brought him home. I mean, it was just, it was just a joke that we couldn't get anything done. He

would just blow up and he had to stop and cry. But now he he can express some of those concerns. And I, so I just I say very little because that doesn't help. I'm trying to talk you through it doesn't help. I will suggest some of the calming strategies that he that he knows of to say, Hey, do you want to try this? Or do you want to do this? Or to say, let's come back to it, or let's take a break. But usually he just has to work through that himself. Usually, then he'll go to his room or he'll go to a book or something. And then after a while, I'll ask him if he's ready, and we can get back to it. So I have learned in the last couple of years to be more hands off when he's frustrated, because because really, he needs to learn how to work through that. And in school, he always well, he probably wasn't frustrated very often in school, because they weren't giving him challenging work. But he never would ever have been a problem for a teacher. He would not have had an outburst; he never would have cried; he would not have stomped away. Because he's a rule follower, and he's nice, polite, and he's sweet. So some of that I know he's doing at home with me, because he's comfortable at home with me. In front of like an authority figure, he would never behave that way. Right? Just kind of eat it. And maybe when he got home, I would see that he was in a bad mood. But at school, he wouldn't have done that.

Reference 3 - 5.54% Coverage

I didn't know that she had ADHD until a couple of weeks ago. But I was happy to find that I've been doing a lot of the things that work for her in our learning, just sort of naturally because I knew they helped her brother and I knew they helped her but I didn't know she would have that diagnosis. So we, we we take a lot of breaks. They get to move around a lot. We have a little rebounder. We have some exercise balls. They can sort of be on the rebounder while we're doing our Latin, and they can be on the ball while we're writing or while we're reading. I always say, Okay, we're about to read, and they love the read alouds but it's hard to sit you know, for maybe 15-20 minutes unless they want me to keep going. But I'll say what do you need? Do you want to have? Do you want to you want to draw while you're listening? Do you want your blanket? Do you want a fidget in your hands? Like I make sure that they're prepared before we start, and it's flexible and comfortable. So we're almost never sitting at the table where they're expected to be with their feet on the floor and sitting up in a hard chair. It's like let's get comfy on the couch. Let's bring what you need. You know, you need a break. You need a snack; you need some water. Let's do that and then we'll come back to this or so we do a lot of that to help them, stay focused and then we write things down. Especially for the for the daughter. She cannot keep anything in her working memory for long. And she recognizes that. So if I will say Kate, tonight we're going to take a shower, but we're not going to wash your hair, she'll say I'd better write that down. Or she'll say, Can you remind me later? Like she knows there is no way that is going to stay in her brain until bedtime. It's just not. So she'll make a little note, or if they asked me too many times what the plan is for the day, then we, we write that down, or I'll have her write that down. Like, okay, first, we're going to do math, then we're going to do, so she has the visual. And when we're writing, we'll use like a graphic organizer, like a bubble map, so she can see it, and she can keep track of what she's doing. So I feel like those are good strategies, especially for her. Her because she needs help organizing it in her

mind, and him because he likes to know what to expect. So both of those, they help them both, even though he is able to focus his attention longer than she is.

Files\█-4 Interview Transcript - § 2 references coded [1.24% Coverage]

Reference 1 - 0.66% Coverage

by the middle of October, they had gone over the 30-student benchmark. So they needed to start a new kindergarten class. And they pulled kids from both of the original classes, plus the others that they had. And I just I've always said if he would have done that it would have been just horrible for him. He did not need any more transitions, any more changes.

Reference 2 - 0.58% Coverage

depending on how in depth the thing is, we might only get one subject done before he says Mom, can I have a break now? Hopefully, we get more than that. Sometimes we get two or three and it's great. But usually within an hour, hour and a half, he wants a break. He'll take a break as long as he can get away with taking one.

Files\█-4 Timeline - § 4 references coded [1.61% Coverage]

Reference 1 - 0.44% Coverage

they just need someone to help redirect him

Reference 2 - 0.28% Coverage

he needs some help focusing

Reference 3 - 0.66% Coverage

He's very capable of doing it, but he's constantly losing focus,

Reference 4 - 0.23% Coverage

the focus wasn't there

Files\█-10 May 2 Interview Transcript - § 2 references coded [1.60% Coverage]

Reference 1 - 1.10% Coverage

He has a short attention span and needs a lot of breaks, a lot of time for movement. He's allowed to fidget, listen in any position he feels benefits him best. We've used

█ 18:18

exercise balls for when he's sitting down and listening to things. He didn't find that to be all that beneficial. So now he just kind of wants to sit on the couch beside me and wiggle and while I talk. And then when we're done, if I'm not available, he has to do some work semi independently.

Reference 2 - 0.50% Coverage

his cognitive endurance is really not very good. And so he needs those frequent breaks, and he needs to move between them, which is something I had learned, but just wasn't doing. So hearing it from somebody else.

Files\█-9 April 30 Interview Transcript - § 1 reference coded [1.34% Coverage]

Reference 1 - 1.34% Coverage

I make sure that she like doesn't ,she can't have anything in her hands to fiddle with. You know, like, I understand some people do better when they fiddle because they can, like, you know, direct the non-attention to their fiddling hand. Nope, it's, she's, she can't do it. I make sure like, like, look at me, like, I have your undivided attention. And I try not to talk too much to her when I'm trying to teach something or when I'm asking her to do something because with the slow processing, like saying it over and over over again, four different ways because you think she doesn't understand. Sometimes you just need the space to think through it.

Files\█-9 Timeline - § 2 references coded [7.81% Coverage]

Reference 1 - 4.40% Coverage

we also did learn that, both of them have a really hard time transitioning, like when the teacher says, Okay, it's time to put your book away and go do X. My kids were always the last ones to, you know, to transition. And I was like, that doesn't surprise me in the least. I don't know what to do about it. You know, I've been trying for years. But, um, so and part of that for █ is ADHD and executive functioning. So, so we were just starting to talk about, um, accommodations, like, like, make pictures of what her desk should look like when it's clean and everything is put away. You know, like, have a little card so that you can just quietly walk over to █, you know, and give her like a visual, this is what you should be doing right now.

Reference 2 - 3.41% Coverage

Like we have a morning routine, you know, where she has little, like clipart images of everything that she has to do, and she moves them when she's done it because otherwise she can't keep up with it. You can't just send her to her room and say go get dressed, you won't see her for 30 minutes and then when you find her she's like, dancing in the mirror, you know, shaking her bottom and she's not dressed. She's like looking at her tongue, and, you know, it's, she, you can't just send her off to do what needs to be done. You she, you have to, like, stay on top of her pretty good.

Appendix Q: Permission Letter for Feuerstein Model of MLE



July 1, 2022

To whom it may concern,

Melissa Dean, PhD candidate at Liberty University, has permission to use the visual image of Feuerstein's Model of Mediated Learning Experience that appears in many of his publications on MLE in her dissertation and the articles it generates.

Elisheva Degani Shtal
Director of Communications
The Feuerstein Institute