

THE NATURAL ROOTS OF REGULATION: A QUALITATIVE
PHENOMENOLOGICAL STUDY OF KINDERGARTEN-EIGHTH GRADE
NATURE-BASED SCHOOLS AND THEIR PERCEIVED EFFECTS ON SELF-
REGULATION AND WELLNESS

by

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This work is dedicated to my two children, Sebastian and Evangeline. Watching you grow and discover the world is a joy to behold, and an absolute inspiration to pursue endeavors that will support your learning, creativity and connection to our natural world. I love you both.

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“Like tiny seeds with potent power to push through tough ground and become mighty trees, we hold innate reserves of unimaginable strength. We are resilient.”

— *Catherine DeVrye, The Gift of Nature*

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Kaitlin Patrzalek

ABSTRACT

THE NATURAL ROOTS OF REGULATION: A QUALITATIVE PHENOMENOLOGICAL STUDY OF KINDERGARTEN-EIGHTH GRADE NATURE-BASED SCHOOLS AND THEIR PERCEIVED EFFECTS ON SELF- REGULATION AND WELLNESS

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The aim of this doctoral dissertation study is to explore the lived experiences of students, alumni, staff and stakeholders in nature-based nontraditional schools. Research has previously identified the numerous cognitive, physical and socioemotional benefits access to nature holds for children. Yet, our current educational and social systems continue to limit access to nature while mental and physical health issues for children in the United States reach all-time highs. Nature-based schools may offer an alternative educational model to address current mental health concerns for students, but adequate research into the potential of nature-based schools is lacking. My dissertation study uses a qualitative, transcendental phenomenological approach to understand the experiences of students, alumni, staff and stakeholders at an accessible nature-based school.

Keywords: Nature-based school, K-8 students, self-regulation, student wellness

TABLE OF CONTENTS

ACKNOWLEDGMENTS	IV
ABSTRACT	V
LIST OF TABLES	IX
LIST OF FIGURES	X
CHAPTER ONE	
INTRODUCTION	1
Background Information	2
Statement of Purpose	7
Research Question	8
Definition of Key Terms	8
Procedures	10
Limitations of the Study	11
Organization of the Study	12
CHAPTER TWO	
LITERATURE REVIEW	14
Learning and Socioemotional Development in Children	14
A Brief History of Formal Education Within the United States	46
Children's Loss of Nature and the Subsequent Impact on Childhood Wellness	84
Nature-Based Schools	100
Purpose of the Current Study	127

TABLE OF CONTENTS—Continued

CHAPTER THREE	
METHODS	128
Purpose and Rationale for Study	128
Researcher Description & Reflexivity Statement	129
Research Philosophy	131
Description of Research Paradigm & Design	132
Proposed Research Questions	133
Participants	134
Procedures	140
Data Analysis	145
Trustworthiness	146
Credibility	147
Transferability	147
Dependability	148
Confirmability	148
CHAPTER FOUR	
RESULTS	149
Review of Major Themes via Excerpts and Propositions About Relationships	166
CHAPTER FIVE	
DISCUSSION	215
Discussion of Results	215
Theoretical Implications	223

TABLE OF CONTENTS—Continued

Practical Implications	232
Future Research	238
Strengths & Limitations	238
Conclusive Summary	240
APPENDICES	242
A. IRB Approval	242
B. Email Invitation	247
C. Informed Consents	250
D. Qualtrics Survey	265
E. Interview Protocols	277
REFERENCES	284

LIST OF TABLES

Table 2.1	Erikson's Psychosocial Stages of Development	30
Table 2.2	Nussbaum's Adapted Central Capabilities for Children and the Empirically Based Impact of Nature Access of Each Capability	89
Table 2.3	Erikson's Psychosocial Theory of Identity Development with an Environmental Identity Development Added	94
Table 2.4	Common Terms and Definitions for Schools that Integrate Nature	103
Table 2.5	Database Search Results	113
Table 2.6	Included Articles by Category	115
Table 3.1	Participant Identification	136
Table 3.2	Student Participant Demographics	137
Table 3.3	Alumni/Adult Participant Demographics	139
Table 4.1	Sample Coding Process	150
Table 4.2	Identified Categories Based on Codes	154
Table 4.3	Identified Themes of the Study Derived from Categories	158
Table 4.4	Themes Organized by Clusters	160
Table 4.5	Sample Category Synthesis Within Themes	161

LIST OF FIGURES

Figure 2.1	Maslow's Hierarchy of Needs	33
Figure 2.2	Bloom's Taxonomy	36

CHAPTER ONE

INTRODUCTION

I was introduced to the magic connectivity between children and the natural world during the summer before starting high school. My very first job was as a day camp counselor on a local farm. Each day, my task was to lead activities facilitating the connection between campers and the natural world while keeping everyone safe and accounted for. It was so very unlike any experience I had had before. Children were empowered to choose how they spent their day and had autonomy to go where they pleased within the loose boundaries of old rail fences. They were expected to help care for farm animals, explore the woods, try new experiences with newfound friends and then go home in the evening, covered in dirt and carrying their latest tie-dyed piece of clothing. Unlike a regimented school environment, children were free to be themselves and spend time with other children of varying ages and backgrounds. There was a notable difference between returning campers and new children; a sort of confidence and maturity that grew with each subsequent summer.

My interest in working with children grew into a career in teaching; by whatever twist of fate, my first two years as a new professional happened to be at a nature-based school. The contrasts between this school and what I knew from public education were starkly evident, and profoundly challenged my thinking regarding how we conceptualize, define and shape education. Many of the qualities I had noticed in my summer campers

re-emerged within students at this nature-based, alternative school. However, as my career as an elementary Spanish teacher progressed and I experienced other public school placements, I grew to realize that many of the students I worked with were in desperate need of emotional care and intervention beyond what I was equipped to handle within my current scope of training. Thus, I went back to school and obtained a Master's degree in School and Community Mental Health Counseling, ultimately choosing to work in private practice wherein I felt I would be most helpful. However, my interest regarding the intersection between education, mental health and the natural world has persisted. I have felt compelled to explore and understand my observations regarding children "down on the farm" from those many years ago, and consider how the relationship and potential wellness benefits between children and nature may be understood, with the findings then refined into useful interventions that can be incorporated into mental health and wellness services. The following dissertation is the beginning of that investigation.

Background Information and Statement of Purpose

Philosophical debates regarding education have existed since the time of the early Greeks, yet discussion regarding the education and development of children is a relatively new phenomenon (Hergenhahn & Olson, 1997). For centuries, children were viewed as "miniature adults", capable of the same mental and physical work as their adult counterparts. It was not until the invention of the printing press in the 16th and 17th centuries that formal schooling became a significant societal interest, as the workforce began to stratify and incorporate careers which required the ability to read, write and do

mathematics (Crain, 2016). Over the next several centuries, multiple theorists have submitted their thoughts pertaining to child development across physical, cognitive and socioemotional domains. Early theorists such as Locke and Rousseau based their work upon direct observation of children and their behavior; as scientific methodology and reasoning rose to prominence in the 19th and 20th centuries, theorists such as Jean Piaget, John Bowlby and Albert Bandura incorporated more formalized scientific experiments into their repertoire to lend validity and reliability to their findings (Crain, 2016), the result of which are theories that continue to find use in contemporary applications with children today. Indeed, theories regarding physical development, socioemotional development and academic development find salience within families of origin, childcare facilities and educational institutions.

During colonial times, the earliest form of education within the United States was home-based learning, with learning topics based on the values and needs of the family. Notably, the majority of European settlers in the early seventeenth century identified with the Protestant religion. These families therefore placed a particular emphasis on basic literacy so as to be able to read religious texts (Vinovskis, 2019). As the population began to grow, so too did the options for private and public education, with a wide variation in academic quality (Center for Education Policy [CEP], 2020). Education laws were neither widely nor fully enforced until Horace Mann championed the Common School Movement in 1852, which led to the implementation of free, public and locally governed elementary schools and identified then-contemporary educational practices as subpar (Cubberly, 1962; CEP, 2020). Compulsory education was implemented in all states

nationwide by 1930 (Hazlett, 2011), though consistent high school attendance and graduation did not become commonplace until the latter half of the 20th century (CEP, 2020).

A close correlation exists between industrialization and education (Braster & del Pozo Andrés, 2020). During the time of the Industrial Revolution, schools were structured similarly to businesses, with teachers emphasizing standardization and perpetuating social inequities (Bowles & Gintis, 1976). However, a shift toward large-scale business coincided with a dramatic shift known as *progressive education*, which placed a newfound emphasis on adequately preparing teachers for the profession and tailoring education to individual student needs (Braster & del Pozo Andrés, 2020; Paterson, 2021). This shift included both an identification of the negative effects of urbanization on children's health as well as notable movement towards child-centered education from some of the most prominent theorists and education practitioners to date (Paterson, 2021). However, the influence of business remained a key component to education; most notably, with administrative structuring as well as the implementation of standardized testing (Callahan, 1962), which was initially used to track, categorize and unfortunately support discriminatory practices towards students (Carson, 2007). The practice of standardized testing continues to be a dominating force within the American educational system today; while the data collected from assessments are used to make decisions regarding staffing and educational policy (Vinovskis, 2019), critics point out that such data may fail to accurately collect a holistic picture of student achievement and factors that influence the learning process. Since the 1960s, the level of federal

involvement in schools has gradually increased with regards to educational policy, regulations, testing, funding and research support (Vinovskis, 2019).

In addition to concerns regarding the foundations and structure regarding the American education system, systemic inequalities and inequities have persisted. Children with one or more marginalized identities, including race, ethnicity, physical or cognitive disabilities, gifted students, and students with a lower socioeconomic status (Lillard et al., 2023; Scott, 2012) have experienced both overt and covert educational discrimination. Discrimination within the American colonies began at their inception, as predominantly White, English-speaking settlers implemented their ways of being at the expense of First Nation peoples (Race Forward, 2023). Attempts to address discriminatory practices have mirrored social civil rights advancements over the past several centuries; however, significant discrepancies within the educational system paralleling intergenerational minoritization and oppression persist (Coleman et al., 1966; Papandrea et al., 2023).

As of today, individual states hold the primary responsibility for providing education to their respective citizens while balancing federal mandates regarding teacher development, assessment and curriculum (Perna, 2023; Perna & Finney, 2014). The discussion regarding educational reform continues along contemporary political lines. Ongoing issues such as staffing shortages, debates regarding curriculum, and continued implementation of high stakes testing at the expense of “extracurricular” classes and recess create perpetual contention (Taylor, 2021; Bershwinger & Brusseau, 2017). Of particular concern is the loss of unstructured physical activities and play time; Hanscom

(2016) reports that unstructured outdoor play provides a litany of benefits for a child's physical and social development. Bodrova and Leong (2015) note that this unstructured time assists children in the development of "cultural tools" that supports the development of a child's ability to self-regulate based on environmental feedback. Alongside the public school system, parents and guardians have the option to consider alternatives such as charter schools, private schools and homeschooling, each with their own potential benefits and drawbacks.

Extensive research exists regarding the relationship between children and nature (Khan, 1997). Generally speaking, it is believed that the intentional engagement with nature in a neutral environment supports the positive development of self and ability to engage in trusting interpersonal relationships (Sempik, 2008; Schreuder et al., 2014). The field of ecological psychology supports understanding positive human development through a sensory-based, continuous reciprocal process between an individual and their environment (Chawla, 2007). Historically, American children made play spaces anywhere outdoors that was not yet 'claimed' by adults (Gaster, 1991); however, according to the United Nations (2018), global urbanization has increased rapidly since 1950 and is only expected to increase. Therefore, the ability for children to be in contact with nature has become less frequent (Turner et al., 2004), and children progressively have fewer opportunities to play alone in natural settings (Clements, 2004), creating conditions for an 'environmental generational amnesia' (Khan, 2002). This issue is exacerbated in school settings where recess is cut due to current curricular demands (Taylor, 2021; Bershwinger & Brusseau, 2017). At the same time, according to the

National Institute of Health (NIH, 2022), there has been a growing concern regarding the prevalence of mental and physical concerns in minors. These identified factors have led to what Richard Louv (2008) calls *nature deficit disorder*, a term he uses to describe the inverse correlation between children's accessibility to nature and exponential increase of health concerns.

According to Donison and Halsall (2023), there is a clear opportunity to incorporate additional engagement with the outdoors into a child's school day. Nature-based schools, which find their origins in Scandinavia and Germany (Chawla, 2015) were developed with this goal in mind. Today, nature-based schools are gaining widespread traction across multiple countries, including the United States (Cordiano et al., 2019). However, due to cultural differences (MacQuarrie et al., 2015), there is no universally accepted term or format for how to incorporate nature into learning (Miller et al., 2021; Becker et al., 2017), creating a significant limitation in the literature. Furthermore, the ways in which pedagogy for both instructional and school counseling programs are developed and implemented vary widely, creating further issues with fully understanding and successfully replicating a nature-based program. A search for current empirical literature regarding nature-based schools identified multiple gaps within the available research, including: a lack of clear definition, poorly designed studies and a lack of information regarding the long-term effects nature-based education has on students. Therefore, the purpose of this qualitative phenomenological study will be to explore the perceptions and lived experiences of current students, parents, staff and alumni of K-8 schools that integrate nature and the perceived effect of this style of education on

students' and alumnus' emotional wellness and ability to self-regulate through their lifespan.

Research Questions

For this dissertation study, my overarching question will be:

What are the lived experiences of K-8 students, alumni, staff and stakeholders in nature-based nontraditional schools?

The individual questions embedded within my data collection will seek to gather information regarding the following concepts:

1. The lived experiences of participants at the identified nature-based school
2. Student, parent, staff and alumni perception of current and former students' abilities to self-regulate in multiple contexts
3. Observations of nature-based education with regards to self-regulation and wellness

Definitions and Key Terms

Within the literature, the topic of nature-based education is not well defined; there are no universally accepted definitions to describe incorporating nature into an educational context (Miller et al., 2021; Becker et al., 2017). According to MacQuarrie et al., (2015), this is due to the term *nature* being contingent upon cultural and context factors, making a universal standardized term impossible. Chapter Two discusses many of the commonly used definitions, terms and concepts seen within the available literature. However, for the purposes of this study, the following key terms will be used:

Nature-Based School- For the purpose of this study, the key term ‘nature-based school’ will be defined as an educational institution that purposefully incorporates nature into its chosen principles, frameworks and curriculum.

Socioemotional Learning (SEL)- This study will utilize the definition of SEL as set forth by the Collaborative for Academic, Social and Emotional Learning (CASEL), which states

SEL is the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions. (CASEL, 2024)

Self-Regulation- This study will define *self-regulation* as the ability to volitionally plan and modify one's behavior to an adaptive end across multiple domains of functioning, including motor, physiological, socio-emotional, cognitive and motivational realms (Montroy et al., 2016).

Wellness- This study will define *wellness* as “a way of life oriented toward optimal health and well-being, in which body, mind and spirit are integrated by the individual to live life more fully within the human and natural community” (Myers et al., 2000, p. 252).

Procedures

This study was conducted at a local nature-based school in Southeast Michigan. This study found participants through a combination of convenience purposive snowball sampling via email, and further through individual interest during school observations. I contacted personal contacts via social media and encouraged them to forward the recruitment email to potentially interested parties. The school administration sent general emails to current parents and alumni using the school's email distribution system. I sought participants who were either current students, alumni, parents of current students/alumni, or current or former professional staff, such as teachers, directors, etc. There were 42 total participants within the study; while data saturation had likely occurred somewhere before that number (Charmaz, 2006), it was important to collect experiences from each of the school's groups for the purposes of comparative analysis

through the educational experience. In addition to consent forms for all participants, written parental permission and consent forms were obtained for all minors wishing to take part in the study. Data was collected in the form of online surveys, individual interviews, focus groups and observations. Interviews were semi-structured in format and designed to be developmentally appropriate; for participants under the age of 10, a Mosaic Approach (Tan, 2019) was implemented in order to support the communication of ideas. Observations took place at the school during approved visiting times and scheduled with individual teachers. The data was securely stored on my computer with multiple password protections and in separate folders to divide participant information from data. All participants were given code names based on the native flora and fauna for the purposes of confidentiality. Data was analyzed utilizing Microsoft Excel. I employed content analysis and constant comparative analysis methods to look for prominent themes within the data. In order to support the trustworthiness of the study, I kept detailed notes which include reflexive journaling and bracketing of my own thoughts and potential biases. Furthermore, I employed the strategies of prolonged engagement, triangulation, peer-debriefing, member-checking, and the use of an outside auditor to enhance the study's trustworthiness and credibility.

Limitations of the Study

This study had several foreseeable limitations. The first is that, as a qualitative study with one specific school, the results cannot be generalized to all populations. However, the study design could be replicated with multiple schools or populations,

which would increase the trustworthiness of the results. Secondly, this study features participants who regularly engage with the nature-based school in one or more capacities; I did not seek out families that have perhaps had a negative experience and left the school, which could have created bias within the data. Despite the reported positive perception of integrating nature into the school day, the reader cannot definitively conclude that access to nature is the exclusive component to improved self-regulatory behaviors. Other limitations may be found within the data analysis process. Qualitative data increases in trustworthiness when compiled and analyzed by multiple researchers. As a dissertation, this study is being conducted by a team of one. While I attempted to mitigate the effects of personal bias and potential errors via bracketing, reflexive journaling, member-checking and the use of two outside auditors to review my work, my findings may not be as strong as if I were working in a research team. Additionally, I did choose to include data from the staff pilot study conducted two years prior; while the staff protocols remained the same between studies it is possible that some of the data may not be wholly accurate to participants' current lived experiences, and/or that the pilot data could have influenced my own thinking and interpretations of the current results.

Organization of the Study

Chapter One provides a general overview of the study, including relevant background information, purpose, significance and limitations of the study. Chapter Two discusses relevant professional literature to the topic, including 1. learning and socioemotional development in children, 2. an overview of education within the United

States, 3. children's loss of natural spaces which are contributing to an increase in physical and mental health concerns, and 4. a discussion of nature-based schools and their possible roles in addressing some of the contemporary issues facing children today. Chapter Two additionally highlights gaps within the current literature. Chapter Three provides a rationale for a qualitative study as it pertains to this topic, and discusses the specific methodology chosen for this study, including the proposed procedures and analysis processes. Chapter Four and Five will discuss results, limitations, and implications for future research.

CHAPTER TWO

LITERATURE REVIEW

The following literature review will discuss: 1. learning and socioemotional development in children, 2. a brief history of education within the United States, 3. children's loss of nature and the subsequent impact on childhood wellness, and 4. nature-based schools and their potential to address some of the identified concerns facing children today. This literature review will also identify gaps within the current literature to provide justification for the current study and research question.

Learning and Socioemotional Development in Children

While philosophical musings regarding education have been around since the time of the early Greeks (Hergenhahn & Olson, 1997), educational pedagogy and theories regarding exactly *how* children grow did not gain traction until quite recently in human history. For centuries, children were viewed as 'miniature adults', cognitively and physically capable of work like their adult counterparts. Indeed, children were expected to perform all manner of household tasks, including caring for smaller siblings, and often were sent on at an early age to apprenticeships or other full-time jobs to support their families. Formal schooling for children rose to prominence in the 16th and 17th centuries; with the invention of the printing press, the workforce began to deviate to include careers such as merchants, lawyers, bankers and government officials, all jobs which required the ability to read, write and do mathematics (Crain, 2016). As scientific methodologies and

technologies have advanced, so too has our ability to theorize development throughout the lifespan. These theories can then be applied to childcare and education in both family and institutional contexts. The following section details a variety of relevant developmental theories featuring cognitive, academic and socioemotional development in children, as well as contemporary applications for education.

Selected Relevant Theories & Theorists Featuring Cognitive, Academic and Socioemotional Development in Children

Early Developmental Theories: Locke and Rousseau

John Locke (1632-1704), a physician and writer, and Jean-Jacques Rousseau (1712-1778), a philosopher and writer, both penned early versions of human developmental theories that have subsequently been built upon by later theorists (Crain, 2016). All of their writings and theories were based upon observational research of children engaging with their immediate environments.

Locke was among the first to theorize that all ideas stem from experience or from the direct inner workings of the mind; that is, either direct physical sensation or personal observation, as well as reflection regarding what we have experienced (Locke, 1974). Therefore, learning could occur either via direct engagement with the environment, especially during the early years of a person's life, or otherwise by reflection on one's thinking via association, repetition, imitation, and reward/punishment (Locke, 1961).

With regards to educational philosophy, Locke viewed self-control as the primary goal of education, with an emphasis on modeling, praise and practice of ideal behaviors through sequential, play-based instruction over physical punishment (Crain, 2016). Furthermore, Locke suggested that academic learning should capitalize on children's inherent curiosity (Locke, 1964).

Rousseau, meanwhile, noted that there is an adult preoccupation with whom a child will develop into, and a lack of focus on who a child is during their actual childhood. Rousseau noted that childhood has its own observable way of being, with nature seemingly encouraging a child to develop at different stages of growth (Rousseau, 1762). Rousseau identified four sequential stages of childhood which tend to mirror the development of humans as a species: infancy, childhood, late childhood and adolescence, all of which are described via observational capabilities in either the physical realm, social realm, or via apparent intelligence/reasoning (Crain, 2016). In addition to his developmental theory, Rousseau also wrote a fictional book called *Emile* that places Rousseau's educational theory in context as he describes the ideal way to educate an imaginary boy named Emile. In general, Rousseau believed that creating conditions to allow nature to have the greatest impact on a child (with as little social influence as possible) would ultimately create ideal conditions to allow a child to think for himself, albeit while lacking understanding of how to function in a collective society (Oliver, 1982). Rousseau's theories are significant due to their identification of biological maturation, stage-based development, and the creation of a child-centered educational paradigm (Crain, 2016). Both Locke and Rousseau's early developmental theories

provide a foundation for shaping subsequent research, theory and practice regarding children's physical development, cognitive development, socioemotional development and educational theory.

Piaget and His Cognitive-Developmental Theory

Jean Piaget (1896-1980) was a Swiss psychologist who was interested in the cognitive development of children and spent most of his career focused on developing and refining his comprehensive Cognitive Developmental Theory (Babakr et al., 2019), which is now considered foundational in understanding intellectual development (Crain, 2016). Piaget identified four general periods of cognitive development from birth to adulthood. From a theoretical standpoint, Piaget's theory operates on the notion that all children, regardless of environment or cultural differences, move through the same invariable sequence of cognitive development (Hockenbury & Hockenbury, 2011; Bernstein et al., 2008). Piaget noted that learning involves the creation of *schemes* or *schema*, which are any self-constructed cognitive action pattern for engaging with a person's environment (Piaget, 1936/1974 p.34). Additionally, Piaget noted that behaviors may be characterized in terms of *assimilation* (adding information or objects into our cognitive schema), *accommodation* (changing our cognitive structures to account for new information or objects), and *organization* (arranging our thoughts and ideas into coherent mental structures); in this way, Piaget believed children learned through direct interaction with their environment, and is therefore identified as a Constructivist (Crain, 2016). According to Kamii (1985), Constructivism embraces the concept of learning through

active experimentation and construction of knowledge in a real-life situation. For example, rather than a child attempting to get the ‘right answer’ on a math worksheet, Constructivists support providing opportunities for a child to explore mathematical concepts using real-life problems and manipulatives to come to the answer on their own.

Piaget’s first stage of development is called the *sensorimotor stage*, and ranges from birth until approximately two years old (Kasschau, 2003). Within this period, babies work to organize their physical actions into mental schemes, such as sucking, grasping and hitting, moving from involuntary to voluntary action patterns (Moreno, 2010). Piaget notes that infants and toddlers actively work to recognize they have control over their physical selves, and later the capacity for exerting control over items within their immediate environment (Crain, 2016). Infants and toddlers also develop *object permanence* during the sensorimotor stage; that is, the ability to understand that objects remain in existence, even when outside their field of view (Hockenbury & Hockenbury, 2011). By the end of this period, toddlers can express themselves verbally, as well as engage in *deferred imitation*, or the ability to replicate behaviors they have seen in the past (Cacioppo & Freberg 2013; Shaffer & Kipp, 2010).

The second stage of development is called the *preoperational stage* and occurs when children are approximately 2-7 years old (Babakr et al., 2019). During this stage, children begin to develop the ability to engage in symbolic thought composed of both words and images (Bjorklund & Blasi, 2012). For instance, symbolism may often be seen in children’s play, when objects are selected to ‘stand in’ for things children do not have

accessible to them (Piaget, 1946/1962). However, children continue to lack the ability to engage in logical thinking (Ciccarelli & Whith, 2012). For instance, according to Piaget, children at this age experience *animism*, which is the inability to distinguish between animate and inanimate objects (Shaffer & Kipp, 2010). Another limitation of this period is egocentrism, which is the inability to distinguish between a personal perspective versus that of another person (Kesselring & Müeller, 2011). For example, according to Piaget's original theory, children at this stage might have difficulty understanding the social convention of taking turns playing with a car because they lack the capacity to recognize that another child may have a different thought about who should get to play with it. Piaget believed that children at this age struggle to understand *conservation*; that is, the idea that an object remains the same even when its shape changes, such as water poured into different containers (Franzoi, 2011). Piaget additionally postulated that young children experience moral *heteronomy*, or a blind willingness to follow the rules imposed by their caregivers, which generally shifts as children grow out of an egocentric state (Crain, 2016).

The third stage of Piaget's Cognitive Developmental Theory is referred to as the *concrete operational* stage and occurs approximately between the ages of 7 and 11 (Babakr et al., 2019; Franzoi, 2011). According to Crain (2016), children during this stage shift towards the ability to consider the perspective of others and begin working towards the ability to solve complex problems. The trademark feature of this stage is a child's ability to think systematically when able to directly see and manipulate objects or participate in activities that support their thinking (Crain, 2016). Children will also start

to be able to classify objects by properties such as shape or size, and identify associations between objects (King, 2011). Furthermore, children gain the ability to identify relationships between sets and subsets, such as the multiple relationship identities a family member might hold (Santrock, 2011).

The final stage of Cognitive Developmental Theory is referred to as the *formal operational* stage; according to Piaget, this stage is achieved around the age of 11 (Franzoi, 2011). Piaget believed this is the stage wherein adolescents and young adults become capable of their full range of thought, including the ability to think systematically, from multiple perspectives, and in abstraction (Pastorino & Doyle-Portillo, 2013; Crain, 2016). Adolescents and adults at this formal operational stage would be able to manage solving an abstract or hypothetical real-world problem in their minds without the need for a visual or manipulatives, or engage in complex discourse regarding abstract concepts such as personal values. Additionally, people at this stage of cognition are able to order their thoughts systematically and consider all possible outcomes (Crain, 2016).

Challenges to Piaget's Cognitive Developmental Theory

Flavell (1996) suggests that Piaget's work is integral to our current understanding of cognitive development. However, his theory is not without limitations and criticisms, especially in the age of neuroimaging and access to cultures worldwide. Firstly, it bears noting that Piaget conducted many of his observations with his own children, leading to

the possibility of bias in addition to an inadequate sample size (Crain, 2016). Piaget's larger studies failed to consider a diverse range of children; according to Lilienfeld et al. (2011), Piaget's original research only included children from a Western society with formal educational backgrounds. Multiple studies have also found that children sampled may develop the skills Piaget identified within his stages either earlier or later than initially indicated (Bauer et al., 2011; Spelke & Newport, 1998; Baillargeon, 1987; Meltzoff, 1995; Barr et al., 1996; Backscheider et al., 1993), leading to further discussion regarding what is "typical" for a child's developmental trajectory. Nevertheless, Piaget's theory continues to remain a foundational pillar in understanding child development.

Vygotsky

Lev Vygotsky (1896-1934) was a Russian psychologist who created a human developmental theory that considered both cognitive processes, biologically determined processes, environmental processes and social context (Crain, 2016; Bodrova & Leong, 2015). Veraska (2020) identified that Vygotsky considered childhood development as occurring on both an organic plane, as well as a sociocultural plane; the two developmental trajectories continuously merge throughout the individual's life to determine their personality.

Vygotsky suggested that the development of cognition after the age of approximately two became an interactive social process between a child and a More Knowledgeable Other (MKO), such as a parent, teacher, another child or even a social

group, such as a classroom of students (Crain, 2016) and placed a greater emphasis on the importance of reciprocal social interaction than Piaget. When children are very young, they act impulsively and are hyper-focused on meeting their own needs. Bodrova and Leong (2015) describe a process wherein toddlers begin to change their ‘knee-jerk’ reactions to environmental stimuli to developing ever greater control over their own behavior, utilizing ‘cultural tools’ to develop key cognitive processes such as perception, attention, memory and thinking, which paves the way for the child to engage in intentional behavior and moderate feedback they received from others and the environment. Based on the work of Engels, Vygotsky was a strong proponent of the use of psychological ‘tools’, such as number systems, writing systems, memory aids, language (including both social and private speech) and other socially mediated symbols (symbols centered around a shared meaning) (McGonigle-Chalmers et al., 2014; Crain, 2016). Of all possible psychological tools, Vygotsky believed that language was most essential, as it has the potential to drive development and facilitate the co-construction of knowledge (Vygotsky, 1981). Indeed, children may mimic word symbols and patterns of their MKO to themselves out loud, and later internalize this process of *private speech*, returning to speaking aloud if faced with a particularly challenging problem (Crain, 2016). As children grow, their externalized speech transfers to social uses, and children continue their development through reciprocal social engagement with peers and adults (Vygotsky, 1962).

Additionally, Vygotsky believed that the act of play (specifically imaginative, pretend play) was essential for cognitive development in that this type of play supported

the separation of action from the literal object, allowing children to learn that the meaning of an object may change based on a context-driven situation rather than an object's physical properties, thereby supporting the development of abstract thought and general increase in intelligence (Lillard et al., 2013; Vygotsky, 1967, 1978). For instance, a stick has limited literal physical properties; however, in play it might serve as a baton, witch's broom, prop for an animal trap or sword, thus encouraging the development of imagination and abstraction. However, Vygotsky believed the highest levels of cognitive development could only be achieved through explicit abstract instruction (such as at a university), wherein learning is largely if not solely conducted in abstract, symbolic thought (Crain, 2016). This theory suggests that the level of cognitive development reached by an individual depends on the level of formal education achieved. In social groups or cultures where abstract thinking is not a necessity for functioning, this highest level of cognitive development may not be reached. Vygotsky's assertion that the level of cognitive development achieved is contingent upon environmental needs stands in contrast to Piaget, who believed everyone moves through each of his cognitive stages.

The final applicable tenet of Vygotsky's theory to be discussed is the *Zone of Proximal Development (ZPD)* (Veraska, 2020). As previously stated, Vygotsky believed that a child's cognitive development could only reach its maximum capabilities in the event of formal education. Vygotsky believed that children in general had the potential to learn more from adults than their peers. While a child can learn from any MKO, they need an MKO such as an adult to learn more complex concepts that include abstract symbols, such as reading, writing and math, which Vygotsky collectively termed

scientific concepts. Vygotsky believed these academic subjects could only be understood by the child based on their own initial self-discoveries, or what he termed *spontaneous concepts* (Crain, 2016). As all children learn differently, Vygotsky proposed that teachers would need to be aware of a specific pupil's ZPD to teach them effectively. At one end of the spectrum of any learning topic is an academic task a child can do by themselves; at the other end of the spectrum are higher-level tasks that a child will *not* be able to achieve or possibly even understand, even with assistance. Somewhere in the middle of these two ends is the ZPD; a space that encompasses a series of increasingly complex learning tasks that a child can do with varying degrees of adult assistance (lessening over time) to grow their individual knowledge and develop readiness and context to engage in more complex tasks. For example, a fourth-grade student might understand addition and subtraction well, and be able to do some multiplication, but is not yet ready for division. A teacher's job then would be to facilitate learning experiences to increase the student's comfortability and knowledge with multiplication to move towards the eventual ability to engage in division. However, successful teaching is contingent upon both the quality of instruction, as well as the development of healthy, supportive, securely attached relationships to educational staff and school personnel (Lawrence, 2023).

Attachment Theory

John Bowlby, a British psychiatrist and psychoanalyst, began research in the mid-1940s to better understand children's feelings of anxiety when separated from their primary caregiver (Ainsworth, 1989; Ainsworth & Bowlby, 1991). At the time, Bowlby's

behaviorist contemporaries had assumed that child attachment was a learned behavior rather than an internal psychological drive (Bowlby, 1946, 1950, 1954). However, attachment bonding is considered to be one of the most significant instinctual needs humans possess (Ainsworth, 1989; Ainsworth & Bowlby, 1991), and the earliest types of attachment typically occur between a child and their mother or primary caregiver (Lawrence, 2023).

Bowlby's Attachment Theory, introduced in 1969, describes different ways that a child might attach (or not) to their parents or caregivers (Bowlby, 1982; Langlois, 2017). Initially, Bowlby introduced *Secure Attachment*, as well as *Avoidant* and *Anxious Attachment* styles (Cassidy, 2008). A fourth kind of attachment, known as *Disorganized Attachment*, was later developed by Mary Main (Mikulincer & Shaver, 2007). Bowlby's research consistently suggests that the level of availability and responsiveness of a child's caregiver will create the conditions for one of these attachment styles (Schwartz, 2015). A secure attachment style develops between a child and their caregiver through positive bonding and expedient, consistent care, creating conditions for the child to learn they can depend on their caregiver for both their physical needs and emotional support (Briere et al., 2017; Schwartz, 2015). Beri and Kumar (2018) identify that a secure attachment style is necessary for healthy attachment and emotional growth. Unhealthy attachment styles may develop when a child experiences inconsistent, neglectful or abusive care (Bretherton, 1992). A child with an anxious attachment style is emotionally sensitive, highly dependent on caregivers for co-regulation, and may struggle with feelings of being unaccepted in some way (Ross et al., 2016). Children with an avoidant attachment style

may only see themselves positively when comparing others in a negative light. These children may have a preoccupation with personal power, suppressed feelings of negative self-worth, and attempt to manage negative situations through social isolation or poor coping strategies (Langlois, 2017; Ross et al., 2016). Disorganized attachment is the most volatile of the attachment types. These children often had an unpredictable caregiver and may experience an urge to control others, aggressiveness, an inability to manage negative emotions and poor relationships (Holmes, 2004). Research demonstrates that children with insecure attachment types are at higher risk for school suspensions and drop-outs (Gage et al., 2018), become incarcerated (Mowen & Brent, 2016), use substances, and experience a myriad of psychological concerns (Lawrence, 2023)

However, research likewise suggests that poor initial attachment styles may be reversed by the formation of positive relationships with just one caregiver in an academic setting, such as a teacher, coach or administrator, especially in a child's earlier years (Lawrence, 2022; Xerri et al., 2018). Acceptance, emotional connection and a sense of safety all contribute to the development of both a more secure attachment as well as personal resilience, essential for both academic and interpersonal success. This can be achieved in a school setting via connectivity with individual staff as well as a supportive school culture (Bae et al., 2020; Thomas et al., 2020; Webber, 2016). Studies suggest that active student engagement within a school community positively affects cognitive and intellectual skill development, moral and ethical development, psychosocial development and contributes to a positive self-image (Xie & Zhang, 2020; Zolkoski et al., 2016). Thus, the cultivation of an academic setting with educational practices that support the ongoing

development of healthy attachment between students and staff, as well as student engagement within the school community, is essential.

Behavioral Learning Theory

According to Coşkun (2019) and Woollard (2010), learning can be thought of as either the acquisition of a new behavior, or the modification of existing behavior; alternatively, these concepts are referred to as *conditioning* and *behavior modification*. Behavioral learning theorists, such as Ivan Pavlov (1849-1936), John B. Watson (1878-1958) and B.F. Skinner (1905-1990) believed that all behaviors (and thus learning) come in response to the external environment (Crain, 2016).

Two main types of conditioning exist: *classical condition* and *operant conditioning* (Coşkun, 2019). Classical conditioning is the learning process by which a neutral stimulus becomes a conditioned stimulus which elicits a particular response. For instance, let us say that the appearance of a child's lunchbox at lunchtime (an unconditioned stimulus) causes them to salivate and begin thinking about their next meal (an unconditioned response). If a teacher begins ringing a bell (a neutral stimulus) each time the lunchbox makes an appearance, eventually the child's lunchtime responses will pair to the bell, making the bell a conditioned stimulus and the child's behavior a conditioned response. Meanwhile, operant conditioning considers human behavior and thus learning to be moderated by feedback via rewards and responses (Baum, 1973, 1981), with the intention of working towards continued, desired outcomes (Skinner,

1953). Coşkun (2019) identifies three elements to operant conditioning: situational cues which elicit a response, the response itself, and finally the consequence of the response. The consequence may be positive or negative in nature (a positive or negative punishment, as well as positive or negative reinforcement). Punishments will reduce the likelihood of the behavior, while reinforcers will increase the likelihood of the behavior. For instance, students who lose recess time (negative punishment) for bullying will theoretically be less likely to repeat the bullying behavior. Receiving something undesired for poor behavior, such as extra homework, is an example of a positive punishment. Meanwhile, students who receive candy (a positive reinforcer) for an “A” on their spelling test will likely attempt to replicate good grades on future assessments. The removal of something undesired for good behavior, such as not having to do an unpleasant chore because of desired behavior, would be an example of a negative reinforcement. The classroom is a child-focused social setting in which teachers may choose to employ a variety of behavioral learning strategies as part of their classroom management plan (Brophy, 1986/1988). Indeed, in a study conducted by Coşkun (2019), it was found that early elementary teachers tended to implement classical conditioning strategies, while upper elementary teachers focused more on operant conditioning strategies. As children enter kindergarten and begin their academic journey, successful adaptation to a classroom environment was found to be a predictor of achievement through elementary school (Ladd et al., 1999; Kaufman et al., 2009).

Social Cognitive Learning Theory

Albert Bandura (1925-2021) was a Canadian American psychologist at Stanford University who developed Social Learning Theory, later renamed Social Cognitive Theory to better encapsulate the theory's focus on both learning and cognition (Crain, 2016; Gibson, 2004). Social Cognitive Learning Theory notes that environmental factors, personal factors, and behaviors all impact one another. Social Cognitive Learning Theory deviates from behavioral learning theories in the belief that a person does not need to *engage* in a behavior themselves in order to learn; they are able to learn via observation, a concept that can be traced back to the writings of the early Greeks (Hergenhahn & Olson, 1997), thereby making the learning process *cognitive* in nature. Both adults and children can also learn and perform tasks via abstract modeling; that is, taking an observed set of rules or principles and applying them to an entirely new behavior without having seen it modeled first (Bandura, 1971). According to Crain (2016), Bandura's observational learning can be broken down into four components: attentional processes, retentional processes, motor reproduction processes, and finally reinforcement/motivational processes. These processes were developed as a part of Bandura's socialization studies and have implications for how a person 'fits in' to their social environment, including gender roles and age-appropriate roles (Bandura, 1965). Bandura likewise recognized that human behavior is shaped by a person's ability to increasingly self-regulate with maturity over time and their own self-efficacy (Gibson, 2004). Crain (2016) identifies four sources of information that shape an individual's sense of self-efficacy: actual performance, vicarious experiences, verbal persuasion and physiological cues. Within the context of a classroom, Social Cognitive Learning Theory adds another dimension of both social and

academic learning for educational staff to consider about both explicit and implicit instruction, as well as classroom management and school culture.

Erikson's Psychosocial Stages of Development

Erik Erikson (1902-1994) was an American psychoanalyst who trained for child psychoanalysis with Anna Freud and later continued studies of various cultures throughout the United States while working as a child psychoanalyst and professor; his most notable contribution to psychology are his Psychosocial Stages of Development, which expands upon Freud's original psychosexual stages (Crain, 2016). These are noted in Table 2.1, below (Broderick & Blewitt, 2025):

Table 2.1

Erikson's Psychosocial Stages of Development

<i>Stage</i>	<i>Basic Conflict</i>	<i>Attitude or Virtue</i>	<i>Possible Negative Outcome</i>
<i>Infancy:</i> <i>0-1 Year</i>	<i>Trust vs. Mistrust</i>	<i>Hope, Trust, Self Worth</i>	<i>Fear and Mistrust in Others</i>

<i>Early Childhood: 1-3 Years</i>	<i>Autonomy vs. Shame/Doubt</i>	<i>Agency, Willpower, Safety</i>	<i>Self-Doubt</i>
<i>Play Age: 3-6 Years</i>	<i>Initiative vs. Guilt</i>	<i>Assertiveness, Purpose</i>	<i>Guilt Over Thought and Action</i>
<i>School Age: 7-11 Years</i>	<i>Industry vs. Inferiority</i>	<i>Competence</i>	<i>Lack of Competence, Expectation of Failure</i>
<i>Adolescence: 12-18 Years</i>	<i>Identity vs. Confusion</i>	<i>Identity, Fidelity</i>	<i>Inability to Establish Sense of Self</i>
<i>Early Adulthood: 19-29 Years</i>	<i>Intimacy vs. Isolation</i>	<i>Love and Capacity for Intimacy</i>	<i>Fear of Intimacy; Distancing</i>
<i>Middle Age: 30-64 Years</i>	<i>Generativity vs. Stagnation</i>	<i>Care and Productivity</i>	<i>Self-absorption</i>

<i>Old Age:</i>	<i>Integrity vs. Despair</i>	<i>Wisdom</i>	<i>Regret</i>
<i>65+ Years</i>			

For the purposes of this discussion, only the first five stages will be considered. Each of Erikson’s psychosocial stages are given an approximate age range, with a *basic conflict* to navigate. If an individual successfully navigates the conflict, they gain the listed attitude or virtue; if they do not, they may end up with the potential negative outcome(s) (Turnes & Kimmes, 2013). For instance, according to Erikson a school age child (7-11 years old or so) experiences the challenge of “industry” (developing a sense of competence and meaningfulness with work) or “inferiority” (struggling and feeling less than due to a perceived inability to engage in schoolwork and be successful). The hoped-for outcome of this stage is a sense of competency for the child, with a lack of competence or assumption of failing being the potential consequence (Capps, 2004).

Erikson’s stages align with other developmental and learning theories. For instance, Erikson’s first stage (*Trust vs Mistrust*) pairs with Bowlby’s Attachment Theory, and reinforces the value of securely attached relationships for very young children for future success. The second and third stages (*Autonomy vs Shame/Doubt*, and *Initiative vs Guilt*) both support the purposeful play espoused by Vygotsky. Furthermore, the school age and adolescent periods of Erikson’s theory focus on virtues such as competence, identity and fidelity. Here again Vygotsky’s concepts of an MKO, and ZPD become essential for learning, as these both support the development of a confident,

competent learner. Teachers, counselors and school administration can infuse key concepts of Social Cognitive Learning Theory and Behavioral Learning Theory to support K-12 students through the development of clear, student-focused school policies and prosocial, accepting school cultures. However, while Erikson's psychosocial stages have been widely accepted, Brookins (1996) notes that these stages and developmental tasks might not be appropriate for all cultural groups.

Maslow's Hierarchy of Needs

Abraham Maslow (1908-1970) was an American psychologist who developed a Hierarchy of Needs (Maslow, 1943, 1954) to conceptualize human needs and the order in which he believed they needed addressed (Figure 2.1):

Figure 2.1

Maslow's Hierarchy of Needs



At the base level are physiological needs, such as shelter, food, water, sleep, etc. The second level includes safety needs, such as good overall health, a lack of threats (real or perceived), and a feeling of security. The third level includes friends, families and partnerships. The fourth level seeks to address a healthy respect for self and others. The final level, *self-actualization*, refers to the fulfillment of one's talents and potential (Fisher & Crawford, 2020). However, Wininger and Norman (2010) note that a common misconception is that higher stages on the hierarchy cannot be achieved without the prior layers being 100% satisfied. Instead, they note that Maslow suggests each layer may be addressed to varying degrees at any one time, and that some layers may be switched depending on the individual. This theory is key when considering if a child is in an appropriate state to be ready to learn; that is, they have their basic needs met, feel safe and feel relatively positive about their ability to engage in the learning process. The first several tiers of the pyramid are typically met by a caregiver with whom the child has a

positive attachment prior to the school day, but teachers or other care providers may be able to support these needs as well in order to support the learning process.

This support during the learning process is complemented by the incorporation of additional aforementioned learning theories. Let's consider a second-grade student, who would be in Piaget's concrete operational stage and Erikson's *Industry vs Inferiority* stage, which emphasizes achieving the feeling of competence. For example, if a second-grade teacher has developed a caring, positive attachment with his students per Bowlby's Attachment Theory, his students will likely be more willing to engage in learning experiences in his classroom. This teacher could proactively support student learning by setting clear expectations and engaging in modeling (Bandura's Cognitive Social Learning Theory). This teacher might choose to anticipate student needs based on their developmental level by having classroom visuals to help students identify their emotional state and needs in a concrete way (per Piaget's theory), snacks ready for hungry students, a quiet space for emotionally dysregulated students and frequent opportunities to engage in positive reciprocal connection with both the teacher and peers, thereby supporting the first three levels of Maslow's Hierarchy and the learning process overall.

Bloom's Taxonomy

Benjamin S. Bloom (1913-1999) was an American educator and psychologist who developed a taxonomical model as a means to discuss and compare levels of student achievement (Bloom, 1956). The full model is composed of three domains: *cognitive*,

affective and *psychomotor* (Chandio et al., 2021). Similar to Maslow, Bloom attempts to document development in a linear framework. Figure 2.2 demonstrates the cognitive portion of this model:

Figure 2.2

Blooms' Taxonomy



While originally utilized in the pursuit of creating standardized testing, Bloom's taxonomy created a hierarchy for mastery learning, and now forms the basis for a competence-based education model (Bigge, 1982). However, Athanassiou et al. (2003) note that while Bloom's Taxonomy is often discussed in teacher education programs and in the context of curriculum development, its use in learner-focused applications is somewhat limited given that metacognitive skills are context-dependent and typically

often higher levels of cognitive ability, such as those seen in secondary or post-secondary populations.

While adaptable for use in any classroom, it is important to consider both the cognitive and developmental levels of students in designing learning tasks. As has been discussed, cognitive and social development varies widely from kindergarten to twelfth grade; younger students are more readily able to engage in collaborative learning that utilizes visuals, physical manipulatives and concrete solutions, whereas older students can work through more abstract problems, as well as analyze and evaluate others' thinking independently.

Theoretical Applications in Contemporary Learning in the United States

While a child's family is their primary environment and thus a key influence in their development, childcare facilities and educational institutions follow closely behind. Indeed, according to the National Center for Education Statistics (2019), approximately 59% of children under the age of five who were not in kindergarten were enrolled in at least one weekly nonparental care arrangement, the majority of which was identified as 'center-based care'. Gialamas et al. (2014) note that childcare is typically divided into two categories: regulated childcare, such as in a center or family day care business, or informal, non-regulated care, such as with a grandparent or other relative. Given that the ages of 0-3 and 3-6 are identified as crucial time periods for socioemotional development (Winkler et al., 2024), and the ages of 0-18 devoted to increasingly formal academic

learning, caregivers and educators alike benefit from understanding and incorporating developmental theories into their experiences with children, as education is a reciprocal process characterized by constant interactions between a child's multiple environments (Kotaman, 2023; Cole, 2003). Furthermore, Kim and Sankey (2010) point out that while most human development models suggest a linear progression, children nonetheless both progress and regress as they physically grow. This concept suggests that both parenting and institutionally based frameworks for both childcare and academic learning need to account for and provide experiences based on individual development patterns in both the cognitive and socioemotional domains. The following sections describe some ways in which the aforementioned theories and developmental constructs have been applied to formal educational settings in both academic and socioemotional domains.

Socioemotional (SES) Learning and Development

Informal learning begins from the moment an infant is born. Indeed, the developmental period between ages 0-3 features an incredibly rapid series of changes in both linguistic, intellectual and socioemotional capabilities (Mortensen and Barnett, 2014; Shonkoff & Phillips, 2000). At this level, child development is supported through the active reciprocal interactions between child and caregiver (Bodrova & Leong, 2015). Research suggests that targeted efforts to support children's social growth and development is most effectively implemented prior to children entering grade school; interventions implemented after a child is in elementary school appear to have less of a positive effect (Knudsen et al., 2006; Heckman, 2006)

According to van Poortvliet (2021), the lack of an agreed-upon conceptual framework and variety of relevant skills depending on context make defining socioemotional skills (and thus socioemotional learning) a challenge. Mayes et al. (2000) suggests the phrase *emotional skills* pertains to a person's ability to perceive and regulate their own emotions, as well as understand the emotions of others. Some such emotional skills might include the capacity to sustain attention, inhibit impulses, interact appropriately with others and the perception of one's own abilities (self-efficacy) (Goodman et al., 2015). The Collaborative for Academic, Social and Emotional Learning (CASEL) defines socioemotional learning (SEL) as follows:

SEL is the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions. (CASEL, 2024)

Socioemotional behaviors can encompass internal and external behaviors that reflect positive adaptation, such as positive self-image, healthy coping strategies and a collaborative attitude, as well as both internal and external problem behaviors, such as depression, impulsiveness and aggression (Pulkkinen et al., 1999).

Another component of socioemotional skills is self-regulation, which refers to learning how to activate and retain cognition, behavior and affect to achieve goals; self-

regulation includes cognitive processing skills, metacognition, and motivation (Senler, 2022; Pintrich & Linnenbrink, 2000). According to Eisenberg et al. (2010), children who can self-regulate and display overall socioemotional competence prior to entering kindergarten are more engaged in the classroom, experience more positive peer relationships and demonstrate higher achievement in both math and literacy through elementary school.

All of the individual factors that support a person's overall ability to self-regulate are of particular importance in a formal learning environment (van Poortvliet, 2021). Indeed, learners who can self-regulate are able to be more engaged in the learning process, seek help as needed, support their own learning, and sustain both focus and motivation towards a goal (McCoach & Siegle, 2003; Corno, 1994). On the other hand, children who are less able to self-regulate may experience significant academic challenges, including less teaching instruction and positive teacher feedback (Denham, 2006). For example, children who experience learning disabilities often struggle with socioemotional challenges, such as difficulty processing social cues, and frequently experience higher levels of frustration, lower self-concept, and general emotional difficulties as compared to their typically developing peers (Silver, 2004; Margalit, 2004; Miller, 2002). Iznardo et al. (2023) report that up to 70% of children with learning disabilities also display comorbid symptoms of Attention-Deficit Hyperactivity Disorder (ADHD), such as inattention, impulsiveness and hyperactivity, which may thus contribute to socioemotional challenges including interpersonal conflicts, feelings of tiredness contributing to reduced attention span, and low self-esteem (Brook & Boaz,

2005). For children who experience significant socioemotional struggles, protective factors assist in the development of resiliency (Masten, 2001). One of the principal protective factors supporting resilience in the classroom is the student-teacher relationship (Iznardo et al., 2023). A positive student-teacher relationship can be characterized as close, warm, and non-conflictual (Furrer et al., 2014) and has been shown to support both typical and at-risk students who face academic adversity (Baker et al., 20008; Bronfenbrenner & Morris, 1998). Likewise, studies have demonstrated both students and teachers benefit from professional development centered on increasing teachers' emotional skills, including improvements in teaching performance, student achievement and reduction in burnout (Ghanizadeh & Moafian, 2010; Alam & Ahmed, 2018; Bracket et al., 2010). At the middle- and high school levels, where student-teacher interactions are often more limited, relationships with multiple staff members, inclusive classrooms, involvement in school activities and a positive, safe school culture support higher levels of school attachment, which in turn support positive behavior, improved academic outcomes and high levels of self-esteem (Penner & Wallin, 2012; Metsäpelto et al., 2010).

Positive caregiver-child and teacher-student relationships are essential for socioemotional development and support. Gialamas et al. (2014) notes that childcare is both structural and procedural in nature, and these two elements shape a child's experience. That is, structural processes such as staff qualifications and staff to child ratios, and procedural processes such as the nature of the relationship and interactions between a staff member and child, combine to ultimately determine the degree of

childcare quality. Therefore, factors such as small class sizes and well-qualified staff have shown to be positive influences for child development (Bradley & Vandell, 2007; Cryer, 1999). However, Rosenthal and Gatt (2010) suggest that additional factors must be present in a child's environment, including developmentally appropriate activities, organized surroundings with clear structure, procedures and routines, and clear strategies to help children learn (Bodrova & Leong, 2008; Hollingsworth & Buysse, 2009). Indeed, a significant evidence base suggests that a child's physical environment has a clear effect on both socioemotional and behavioral development, reinforcing the necessity for a child's caregiving environment to be carefully structured and well supported (Cicchetti & Toth, 1995; Hinshaw, 2002). While formal teacher training programs often teach and encourage implementation of all of these considerations, individual educator beliefs and values moderate the adoption of these practices, thereby influencing student development (Burchinal et al., 2002; McMullen et al., 2006). Davis et al. (2010) noted that current research suggests that institution-wide policies, curricula or approaches are lacking, with teachers instead adopting what they believe will be effective in their classrooms.

One such attempt to create continuity in socioemotional learning is the Collaboration for Academic, Social and Emotional Learning (CASEL) model, which divides socioemotional skills into intrapersonal and interpersonal competencies (Negru & Palos, 2023). The CASEL framework is conceptualized in the shape of a wheel, with five key concepts at its core: self-awareness, self-management, social awareness, relationship skills, and responsible decision making. The wheel then expands outwards into various systems, with an explanation of how these five key concepts can be realized. At the

classroom level, there is a focus on SEL instruction and classroom climate. The school level focuses on school culture, practices and policies. The family and caregiver level is third, which focuses on developing authentic partnerships. The final level, communities, is identified with a focus on ‘aligned learning opportunities’ (CASEL, 2024).

Academic Learning

In traditional learning paradigms, teachers are viewed as authoritative figures who impart their knowledge upon students. Students are expected to process and retain this knowledge and demonstrate their learning later via summative assessment. Pfannenstiel and Schattgen (1997) noted in their study that “traditional” teachers were more likely to utilize worksheets and flashcards as primary teaching tools, with extrinsic motivators as rewards. Traditional teaching methods may or may not be differentiated to support diverse learner needs and may view student error as a “failing” on the part of the student to grasp the content (Baştürk, 2016).

In more recent decades, teaching frameworks have evolved to incorporate learning theory and research. Alternative teaching frameworks to the traditional, “sit-and-get” model include both constructivism and social constructivism, the philosophical underpinnings of which can be traced back to Socrates (Jia, 2010) and further informed by multiple learning theories, including Piaget. According to Baştürk (2016) and Paparozzi (1998), constructivism is based on the following principles:

- 1) Constructivism allows for students to engage in well-designed learning activities wherein they take an active role in the learning experience.
- 2) Constructivism includes the opportunity to engage in problem-solving.
- 3) Constructivist teaching takes students' prior knowledge into account.
- 4) Constructivist teaching supports student engagement with both other students and the environment.
- 5) Constructivist teachers view student mistakes as learning opportunities.

Additionally, Frazier and Bryant (2019) note that meaning making during learning should include not only cognitive processes, but physical or kinesthetic processes as learners interact with their immediate environment which further supports the constructivist tenet of students taking active roles within their learning. Social constructivism is a second teaching framework which suggests that social interactions are as equally important as individual meaning making during the learning process (Ernest, 1994). According to Gärdenfors and Johansson (2005), learners cannot fully understand educational content without the surrounding social context. Building upon the work of Piaget, Vygotsky and Bandura, social constructivist teaching believes that the interpersonal interactions which occur in the classroom are of equal importance to the learning experience, as learning is facilitated by social interaction such as collaborative learning, peer support and

differentiated/individualized instruction (Bozkurt, 2017; Jardinez & Natividad, 2024). Specific teaching methodologies, such as the Montessori method, Steiner/Waldorf education and Reggio Emilia approaches embrace constructivist paradigms (Macià-Gual & Domingo-Peñafiel, 2023).

Constructivism and social constructivism models provide enhanced flexibility over traditional teaching models to create differentiated opportunities for learners based on their cognitive levels, and have been shown to promote cognitive, social-emotional and academic outcomes (Lerkkanen et al., 2016). Social constructivism additionally lends itself well to inclusive education for special needs students of all ages, given the emphasis on social interaction, collaboration and recognition of diverse perspectives while potentially supporting the reduction of harmful stereotypes (Jardinez & Natividad, 2024). For younger learners, play-based curriculum is viewed as an ideal form of social constructivism (Santrock, 2005), as it allows children to take charge of their learning experiences (Konishi & Chesney, 2024). According to Harley (1971), play is a means for children to learn about their surroundings, begin to understand themselves, learn sociocultural skills, and provide general entertainment. Bodrova and Leong (2019) explain that play serves as a safe opportunity for students to develop socioemotional skills, including self-regulation through games with increasingly complex rules that challenge players to manage their impulses. Unfortunately, the changing cultural landscape of formal education has increasingly limited opportunities for children to engage in multi-aged, unstructured play (Gleave & Cole-Hamilton, 2012; Bodrova & Leong, 2019), which will be discussed in greater depth elsewhere in this review.

Additionally, while constructivist and social constructivist approaches appear to have numerous advantages over more traditional learning methods, studies suggest that preservice teachers often do not receive adequate education in constructivist pedagogy, and that teachers in general tend to revert to more traditional teaching methods when they experience low self-efficacy in a teaching a particular content area (Bursal, 2012; Baştürk, 2016).

Writings and discussion regarding how children develop have existed for centuries, but it is only in the last several that great strides have been made. Inventions such as the printing press in combination with a changing economic and social landscape spurred interest in educating youth to fill roles that required academic learning. Furthermore, advancements in scientific methodology and technology created conditions to allow for systematic observation and hypothesis testing, which supported the development of theories regarding human development and learning. As these theories developed over time, they helped to form and shape educational practices. Many of these theories are incorporated into parenting and education today.

A Brief History of Education in the United States, Contemporary Educational Curriculum and Policy

In the United States, the term *education* likely invokes mental images of brick-and-mortar classrooms filled with child-sized desks and perhaps recollections of memorable moments from one's own schooling. Informally, education has existed on the

North American continent for as long as Indigenous Peoples have inhabited it. The American education system as we know it today began to take shape in the 17th century, with an intention to create “civilized” individuals able to read the Protestant Bible (Vinovskis, 2019) and developed through the subsequent centuries in ways that were reflective of both the economic and social advancements of the United States. Today’s education system is a complex amalgamation of evidence-based teaching and learning practices mixed with businesslike bureaucracy hyper- fixated on producing demonstrable achievement and reflective of contemporary social systems that provide advantage to some students and disadvantage to others, creating conditions that continue to be inherently unequal and inequitable for all learners. The following section details a brief historical overview of education in the United States with a discussion of specific forms of historical and current inequality and inequity within schools, followed by an overview of the current education system, identified areas of concern, and several common alternative options to the public system.

A Brief History of Education in the United States

An Overview of the Development of Education Systems in the United States

In the nascent colonial days of the United States, learning was largely an at-home endeavor, with parents or other adult family members responsible for teaching children. Vinovskis (2019) notes that many European settlers in the early seventeenth century identified with the Protestant religion and held firm to the belief that everyone should be

able to read the Bible, thus placing academic emphasis on basic literacy. According to the Center of Education Policy (CEP) (2020), as towns grew, so too did options for education grow, such as: church-supported schools, local schools organized by parents, tuition-based schools with traveling schoolmasters, charity schools funded by churches or charities, boarding schools, ‘dame schools’ led by women educators, private tutoring, and work apprenticeships which included instruction in reading, writing and math. With such a variety in educational arrangements, so too came a variety of methods to fund educational institutions, including family tuition payments, property tax, fuel contributions, and charitable contributions (CEP, 2020). Furthermore, the quality of educational instruction varied widely, as there was no system in place for training teachers, and many were paid poorly as well as undereducated (CEP, 2020). In general, educational options and instructional quality correlated to wealth and geographic location. Indeed, rural areas may have had few or no educational options beyond the home for decades (Hazlett, 2011). However, Boonshoft (2021) notes that the New England region developed widespread primary education through the development of town schools, which were required to open once a town surpassed a given population. Massachusetts in particular developed a system of tax-supported town schools, which other states later sought to emulate (Boonshoft, 2021). In the mid-seventeenth century, grammar schools began to open for older students, with the intention of providing courses in advanced subjects for students wishing to attend a university, such as Harvard, which opened in 1636 (Moran and Vinovskis, 1992). In 1827, Massachusetts was also the first

state to require towns of five hundred families or more to open high schools to teach advanced subjects such as history, bookkeeping, geometry and algebra (Vinovskis, 2019).

Just as the development of brick-and-mortar schools and educational options varied between colonies, so too did the rules regarding attendance. Given its historical tendency towards leading education incentives, Massachusetts was unsurprisingly the first colony that required compulsory education starting with the legislative acts of 1642, 1647 and 1648, with the intention of creating obedient civilians that would contribute positively to the workforce (Race Forward, 2023); these acts stated that towns with a population greater than fifty individuals had to hire a reading and writing teacher, and that towns with a population greater than one hundred needed to have a Latin grammar school (Hazlett, 2011). After the American Revolution, states began to write in constitutional provisions for public support of schools, with a focus on accessibility (for specific demographics only), funding and governance of education. However, specific educational provisions varied by state, with many states not fully realizing their constitutional mandates for decades (Boonshoft, 2021). Indeed, public education laws were not widely and fully enforced until Horace Mann championed his Common School Movement resulting in free, public and locally governed elementary schools in 1852. Mann's movement placed a strong emphasis on teaching reading, writing, arithmetic, and moral instruction with the intention of developing literate, moral and productive citizens while identifying current educational practices and assessment strategies as subpar (Cubberly, 1962; CEP, 2020). According to Paterson (2021), by the mid-1800s most states had accepted three basic rules regarding public education: that education should be

free and supported by public taxes, that teachers should be trained, and that children should be required to attend school. Public elementary schools were available to most children by the latter half of the nineteenth century, though they certainly were not equal for all students (CEP, 2020). Compulsory education laws were passed in 32 states by 1900, and in all states by 1930 (Hazlett, 2011). High school attendance, meanwhile, did not become commonplace until the 20th century, with the graduation rate only beginning to exceed 50% in the 1970s. As of 2017, 90% of Americans over the age of 25 held a high school degree (CEP, 2020). Historically, the requirements of the agrarian calendar and limitations with building facilities have dictated school calendars; however, the financial state of the school district was a factor (Pedersen, 2012), and many districts shifted their school calendars based on community needs (Weiss & Brown, 2003). As of today, most public school district calendars require 180 days of education per year, with some small intermittent breaks and a summer break lasting four to eight weeks or longer (Pedersen, 2012). Some public, private and charter schools have chosen to implement extended school days or a ‘balanced’ (i.e., year-round) school calendar featuring 180 days with more evenly distributed breaks in an effort to combat ‘summer fade’ (a phenomenon where academic progress is lessened due to the lengthy break away from school) and generally boost student achievement (Neal, 2008).

According to Braster and del Pozo Andrés (2020), there is a close correlation between industrialization and education. Thus, along with the Industrial Revolution that occurred in the nineteenth and early twentieth centuries, so too came shifts in education. According to Bowles and Gintis (1976), schools of the era were structured similarly to

businesses; teachers essentially trained students to produce standardized products with a high level of discipline, without room for individual expression while continuing to perpetuate social inequities. Yet during this time, there was a major shift in the economy of the United States, towards a rise of large-scale businesses (Bowles and Gintis, 1976). Along with this shift in business came a paradigm shift in education in both the United States and Europe. Known as *progressive education* in America and *new education* in Europe, this shift placed an emphasis on tailoring education to the needs of the student (Braster & del Pozo Andrés, 2020) and an increased emphasis on adequately preparing teachers for the profession (Paterson, 2021). Ellen Key, a Swedish feminist, is attributed to coining these phrases. Within her book, *Barnets århundrade (The Century of the Child, 1909)*, Key notes the rapid changes for children brought on by industrialization and urbanization, including the loss of natural playscapes and addition of unsafe workplaces, such as factory floors. The Progressive Era of education featured some of the most prominent educational theorists to date such as Jean Piaget, Benjamin Bloom, Maria Montessori, Horace Mann and John Dewey, among others. These theorists and educators ushered in gradual educational reform with regards to understanding child development and pedagogy, including ideas of equality for *all* learners, child-centered learning, whole-person education, inquiry-based learning, and assessment of learner achievement as a predictor of quality teaching (Paterson, 2021). John Dewey is credited as the “father of progressive education”, as he regarded schools as communities where children were living rather than as factories to produce workers (Braster & del Pozo Andrés, 2020). As state departments of education expanded post-World War I, so too did professional

teacher education programs and teachers' unions, which allowed for greater standardization of school practices at both district and state levels (Steffes, 2012).

Another key shift in the Progressive Era of education in the United States included the first American public kindergarten, led by educator Ms. Susan Blow and superintendent of the St. Louis School district, Mr. William Torrey Harris in 1873 (Luckey, 2018). Blow and Harris viewed kindergarten as not only a way to support social mobility for the poor, but as an institution that supported progression through the lower stages of intellectual, moral and social development in order to preserve the progress of civilization as a whole, a process they termed *cultural recapitulation* (Luckey, 2018). Alongside the instructional and developmental theorists were others concerned with the administrative side of education, such as Edward Thorndike, an American psychologist who suggested schools could be organized in the style of industrial management and should include scientifically proven practices (Tomlinson, 1997). Other scientifically minded education experts, such as Joseph Mayer Rice, created and introduced standardized tests in arithmetic, writing, and spelling. He also conducted formal research on how different teaching methods impacted student achievement (Ayres, 1918). As the business community grew and the costs of public education increased, so did the calls from the business world to incorporate scientific management into instructional practices (Callahan, 1962). This combination of child-centered pedagogy with businesslike administrative practices continues in American education today.

Thus far, we have discussed the development of educational options within the American colonies and states and noted significant shifts away from a “manufactured”

model of education and towards a child-centered pedagogy. However, it is essential to also discuss the development of testing and achievement, as it is a dominating force within the American education system today and hotly contested by critics due to the amount of preparation and focus on testing at the expense of other valuable learning content. Furthermore, data collected from testing and achievement is used to make significant decisions regarding staffing and educational policy, but such data may fail to provide a holistic picture of student achievement and external factors that impact the learning process (Vinovskis, 2019). Prior to the mid-nineteenth century, the end of each school year was marked with a public exhibition in which students orally demonstrated their individual learning; younger students may have recited their ABCs for instance, while older students might have tackled famous orations or poems (Reese, 2013). However, with Horace Mann's Common School Movement in Boston in the mid-nineteenth century came the first written tests, which reflected poor student performance. This supported Mann's assertion that schools were not performing to standard, and he demanded reform. As schools began to switch from oral to written testing, they likewise began to incorporate classroom teacher observations to provide parents with more in-depth feedback and stopped publicizing rank orderings of students, teachers and schools (White, 1891). Originally, schools were developed as "one room schoolhouses" with multiple grades together. One "master" teacher would teach a lesson and then expect older students to then teach and reinforce concepts to younger ones. The mid-nineteenth century saw the implementation of schools divided by grades, as increasing populations demanded a shift to a multi-room school with multiple, increasingly specialized teachers

(Angus et al., 1988). However, the process by which a student was promoted through the grades varied; for example, some schools left the decision for teachers to make, while others assigned the task to administrators (Shearer, 1898). The development and introduction of intelligence testing, such as the Stanford-Binet intelligence scales created another marked shift and emphasis on testing, tracking and categorizing students in the early twentieth century (Carson, 2007). After World War I, education continued to expand to meet the increased immigration from Europe. Schools began offering additional curricular options, including special education programs and vocational education, with educational testing utilized to suggest specific educational tracks and careers to students and parents, which was supported by increasingly specialized teacher preparation (Vinovskis, 2019; Paterson, 2021). Due to the fervor around intelligence testing, it took time for education professionals to eventually acknowledge that such testing also needs to account for a child's environment and circumstances (Linden & Linden, 1968). For example, the Great Depression and World War II created multiple economic hardships for schools and caused disruption for some high school students who chose to enlist in the military; these students were later able to finish school if they chose due to the 1944 GI Bill (Frydl, 2009). While the federal government's New Deal programs did not provide much support to individual districts, education was broadly acknowledged as needing a more equitable distribution of resources (Kandel, 1948). As the United States moved into the Civil Rights Movement of the 1950s and 1960s, testing data was used in litigation to claim African American students were placed at a distinct disadvantage (Kaestle, 2016). For instance, such data supported the Supreme Court's

decision in *Brown v. Board of Education* to declare segregated schools inherently unconstitutional in 1954. Spurred by the launch of the Russian space satellite Sputnik, the Defense Education Act of 1958 created funding for world languages, math and science instruction for all grades, as additional funding for research regarding state educational statistics (Ravitch, 1983).

Beginning in the 1960s, the level of federal involvement in schools has gradually increased in regard to policy, regulations, testing, funding and research support (Vinovskis, 2019). For example, under the Economic Opportunity Act of 1964, an eight-week summer Head Start program was created with the intention of supporting and preparing disadvantaged children to enter kindergarten. This program was eventually expanded to a year-round model and continues today. According to Vinovskis (2005), while Head Start was a popular program at its inception, critics doubted its long-term effectiveness due to the lack of significant results on Intelligent Quotient (IQ) and cognitive testing, which caused advocates to pivot towards emphasizing these students would be less likely to be held back or incarcerated (neither of these being useful measures of learning). Another major federal program from the 1960s was the Title I of the Elementary and Secondary Education Act (ESEA) in 1965, which intended to provide additional federal funds for disadvantaged students while expanding each state's role in education in lieu of control predominantly remaining at the local level (Smith, 1967; Kirst, 2004); however, these funds were not distributed with significant guidance or oversight, as the federal Department of Education was not created until 1979 (Radin & Chanin, 2008). The federal government continued working to develop student education

measurements, such as the National Assessment of Education Progress (NAEP) in 1972; this measure shifted from regional to state-based results starting in the late 1980s, allowing for state-based comparisons (Jones & Olkin, 2004). The 1970s additionally saw more than thirty states develop minimum competency testing at both the elementary and secondary levels, with eighteen states requiring successful passage of exams prior to high school graduation; these tests were the first of the contemporary crusade to hold students, teachers and districts accountable for student achievement (Vinovskis, 2019).

In 1983, the Reagan administration published the widely circulated report, *A Nation at Risk*, which suggested that declines in student testing were directly correlated to issues within public schools (Vinovskis, 2009). This report, in combination with the National Governors Association (NGA) report *Time for Results: The Governors' 1991 Report on Education*, mandated a call for state and national education goals which were discussed during the 1989 Charlottesville Education Summit between President George H.W. Bush, Governor Bill Clinton, and other state governors (Vinovskis, 1999). The six goals created by the conclusion of that summit were both ambitious in nature and generally unrealistic but adopted with a targeted achievement by the year 2000 and referenced in the federal education policies America 2000, Goals 2000, and No Child Left Behind (NCLB), all of which ultimately failed yet created challenges and anxieties for students, families, teachers and policymakers alike due to implementation of standards, high-stakes testing and more complex teacher preparation (Vinovskis, 2019). In addition to promoting these programs, the Clinton administration focused on smaller, systemic reform based on the ideas of Marshall 'Mike' Smith and Jennifer O'Day, who

called for statewide curriculum frameworks supported by rigorous testing and additional teacher training (Ravitch, 1995). George W. Bush's administration in the early 2000s doubled down on NCLB efforts with limited educational improvements (National Research Council, 2011). Afterward, the Obama administration chose to continue supporting NCLB while also implementing the Race to the Top initiative in 2012 and later passing the bipartisan Every Student Succeeds Act (ESSA) in 2015, effectively returning primary control of educational policy to the states (Vinovskis, 2019).

Throughout the last several decades, concern and complaints regarding the use of high stakes testing and the extensive preparation for these tests at the detriment of instructional time have grown substantially (Koretz, 2017), leading to ongoing discussion regarding education reform in addition to alternative options to public education, such as private schools, charter schools and homeschooling.

Inequality and Inequity Within American Education

Thus far, the development of the public education system within the United States has been summarized. However, it would be a gross misconception to suggest that this public system served all students equally or equitably over the past several centuries. Carlton Parsons and Turner (2014) note equity and equality as separate yet closely linked concepts; they define *equality* as having a “state of sameness or similarity” (p. 100); they suggest racial equality will be realized when the educational experiences of all racial groups in the United States are composed of the same quantity and quality of resources. Furthermore, they define *equity* as the “...distribution of resources, both quantity and

quality, according to need with equality and the end goal” (Carlton Parsons & Turner, 2014, p. 100). Historically, children with one or more marginalized identities have experienced both overt and covert educational discrimination in the United States leading to inherent inequity and inequality; such marginalized identities include race and ethnicity, as well as students with physical or cognitive disabilities, gifted students, and students with lower socioeconomic status (Lillard et al., 2023; Scott, 2012).

The concept of racial inequality stems from the European conquests in the 12th century, wherein White individuals were categorized into superior (English) and inferior (Irish) groupings (Banks, 1995; Bonnet, 1998). This superior/inferior dichotomy began in the colonies the moment that English settlers encountered indigenous peoples in North America (Carlton Parsons & Turner, 2014). Likewise, from its inception, education within the colonies was created from a colonizer perspective; that is, predominantly White English-speaking settlers who brought their ways of being created the foundation of the American education system as it is known today. The physical expansion of the colonies and their educational opportunities came at the continued expense of First Nation peoples and were designed to benefit predominantly White settlers. The Continental Congress of 1785 passed a law creating a system of townships and land grants through the “Northwest Territory” of present-day Ohio, reserving land for schools (Race Forward, 2023). Similarly, Beadie (2020) writes that Michigan’s state constitution in 1836 was the first to dedicate all school lands to a centrally defined public school system, which granted the expectation that federally granted school lands were to be accessible to the inhabitants in a systematic and generally equitable basis. However, in

practice this law referred to White settlers. In both cases, this legislation was based upon the notion that the new government had rights to land occupied by First Nation peoples (Race Forward, 2023).

Religious Inequity & Inequality

As previously mentioned, the first semblance of schooling was based on the Protestant religion, as families sought to teach their children how to read the Bible (CEP, 2020). Thus, immediately, any student who did not identify as Protestant may have been placed at an educational disadvantage, or at odds with their beliefs at home. This foundation would eventually cause conflict in the form of “Bible Wars” in the 19th century; for instance, in the 1840s, Irish Catholic immigrants in New York struggled to gain influence over their public-school systems to limit the use of a Protestant-based curriculum for their children (Race Forward, 2023). There were additional fierce debates in the early 20th century regarding teaching biological evolution theory vs biblical teachings (Pew Research Center, 2019). The United States (U.S.) Supreme Court cases *Cantwell v. Connecticut* (1940), *Everson v. Board of Education of Ewing Township* (1947), and *Engel v. Vitale* (1962) deemed schools and school-related activities to fall under the same requirement of separation between church and state as the federal government (Pew Research Center, 2019). Debates regarding the presence of religion within public education continue today.

Racial Inequity & Inequality

According to Carlton Parsons and Turner (2014) in the early 1600s, White individuals began to subjugate other humans with non-White physical features, including most notably the enslavement of Black peoples; Black history in the United States presents a clear example of the development of systemic racism and inherent discrimination. Black people were viewed as subhuman, and of a different species than their White counterparts (Watkins, 2001). By the mid-1800s, a racial ideology that separated humans into groups based on phenotypes and gave certain privileges to identified “superior” groups embedded itself within the economic, political, educational, social and cultural arenas of the United States (Manning, 1993; Smedley, 2001). This ideology came in conjunction with the economic boom of the Antebellum period in the South, which largely relied on slave labor on plantations (Slave Codes, 2015), creating further support and systems for limiting if not completely prohibiting Black access to education of any kind (Tookes, 2021). In the North, there were proponents of education and equal rights for both women and Blacks, with attempts to provide education in the name of civic inclusion; however, pushback was frequent and often violent (Boonshoft, 2021). By the time of abolition of slavery in 1865, nearly every state had laws in place prohibiting the education of slaves; these “slave codes” or “Black codes” were ultimately created to control the lives and personal activities of Black people, both enslaved and free. (Whiteaker, 1990; Davis, 2010). The punishments associated with breaking these slave codes were brutal, including whippings, beatings, floggings, branding, dismemberment, mutilation, and castration in males (Davis, 2010). Any education provided often predominantly focused on skilled trades rather than literacy, as the latter

had greater potential to provide empowerment (Clewell & Anderson, 1995). Indeed, Frederick Douglass, a famous Black American abolitionist and orator, advocated for literacy as the key to the equality and freedom of Black people in his autobiography (Douglass, 1845).

After the Civil War, there were attempts to develop education for Black individuals of all ages (Browning & Williams, 1978). Amendments were added to the United States Constitution to abolish slavery and extend equal protection to Black citizens, and the Civil Rights Act of 1875 forbade discrimination in public accommodation (Carlton Parsons & Turner, 2014). During the short Reconstruction period from the end of the Civil War until the early 1870s, universal public education was made available to Black students (DuBois & Gill, 1912). Yet the quality and accessibility of education varied widely by region due to increased racism and discrimination (Tookes, 2021); for example, many White people in the South believed Blacks to be less competent and therefore subject to a different, lowered level of education (Bullock, 1967). State and local statutes in the South, commonly referred to as Jim Crow laws, were implemented to effectively legally segregate Black Americans and deny their various rights, including the right to vote and receive an education from the 1870s until 1968 (Wormser, 1999). According to Boonshoft (2021), education and literacy tests could then become tools for disenfranchisement and discrimination as well. In 1883 the U.S. Supreme Court grouped five civil rights cases together and declared it unconstitutional for the federal government to legislate with regards to racial discrimination in the private sector (U.S. Supreme Court, 1883). In 1896, the US

Supreme Court Case *Plessy v. Ferguson* decreed that it was constitutional to create ‘separate but equal’ facilities, creating educational conditions for Blacks that were inherently unequal and inequitable to Whites until 1954 (DuBois & Gill, 1912), when the *Brown v. Board of Education Topeka Kansas* decision overturned the legality of segregated facilities (Carlton Parsons & Turner, 2014). With the advent of court-ordered desegregation in the 1960s and 1970s, there has been a decrease in racial segregation in education (Allen & Daugherty, 2006); however, according to a study conducted by Orfield and Lee (2004), K-12 education continues to occur in largely segregated settings and is therefore inherently unequal. In reviewing segregation patterns from 1991-2001, it was determined that on average, a White student attended a school where 80%+ of the student body was also White, whereas on average a Black student attended schools in which only 31% of the student body were White (Orfield & Lee, 2004).

While the majority of this discussion has focused on Black history, due to the embedded nature of racial inequality in the United States other marginalized cultural groups have experienced immeasurable acts of discrimination and injustice as not only at the local, state and federal levels, but school-age levels as well (Rodriguez, 2019). For instance, according to the U.S. Department of the Interior (2024), from 1819 through the 1970s, the government managed federal Indian boarding schools designed to culturally assimilate American Indian, Alaska Native and Native Hawaiian children to mainstream American culture by forcibly removing them from their families and barring them from engaging with their native cultures. In addition to losing their homes and families, these children were subjugated to emotional and physical abuse, with many of them dying.

Indigenous peoples were not even recognized as citizens until 1924, further limiting their ability to fight these barbaric institutions (Race Forward, 2023). Despite the U.S. Supreme Court's decision in *Plyler v. Doe* (1982) which determined that equal educational access to free, K-12 public education is a constitutional right afforded to documented and undocumented US citizens (American Immigration Council, 2016), 1994's Proposition 187 in California attempted to allow public schools to ban children of undocumented immigrants from attending. This proposition was later struck down as unconstitutional but is an indicator of discrimination that has continued to propagate in the United States into contemporary times (Race Forward, 2023). Golash-Boza and Valdez (2018) note that for K-12 students, elementary and secondary schools may be a primary place for either supporting immigrant students while building social capital, or reinforcing divisiveness (Gonzalez, 2016). Even without blatant acts of discrimination and racism, school staff may experience and engage in *implicit bias*, which is a set of unconscious attitudes or stereotypes that affect understanding, actions and decision-making resulting from subconscious associations we receive and make that can influence our perceptions and interactions with others (Staats et al., 2015). Within education, even the best-intentioned teacher may engage in implicit bias, as they may engage in specific responses, interactions or teaching styles towards specific students based on that student's demographic information (Grays et al., 2023), which can thus perpetuate a more insidious form of discrimination.

Inequity & Inequality for Special Education

According to the Americans with Disabilities Act (ADA), an individual with a disability is defined as a person with one or more physical or cognitive impairments that substantially limit one or more major life activities, have a history of the impairment(s), and/or is perceived by others as experiencing an impairment (U.S. Department of Justice Civil Rights Division, 2020). Spaulding and Pratt (2015) note that the treatment of people with disabilities in society is historically contingent upon that society's norms and attitudes. Over the centuries, society has shifted between viewing people with disabilities as *qualitatively* different versus *quantitatively* different; that is, seeing people with disabilities as *inherently different* than the average person versus viewing people with disabilities as an equal person, but with varying degrees of difference regarding individual development and capability (Winzer, 1993). There is additional debate within the realm of nature versus nurture with respect to disabilities; historically, the conversation has shifted between whether personal characteristics are determined by genetics and therefore unchangeable, or if environmental factors may provide influence and therefore validate the importance of care, education and life experiences for people with disabilities (Moore, 2006; Peebles-Wilkins, 2007). Prior to the nineteenth century, society was highly critical of families who had children with disabilities, often leading them to be hidden away from public view (Dybwad, 1990). People with disabilities were generally viewed as qualitatively different, and therefore subhuman (Carey, 2009), subject to hardships such as exploitation, exclusion and sometimes execution (Crissey, 1975) and often removed from their homes and institutionalized (Carey, 2009). However, advancements made in philosophy, science and economy at the beginning of the

nineteenth century, igniting an interest in educating and legally protecting individuals with disabilities (Spaulding & Pratt, 2015). Dorothea Dix, an American nurse and activist, is credited with creating significant change in how people with disabilities were viewed and treated in the United States (Carey, 2009). She systematically visited jails and almshouses across the state of Massachusetts, and directly appealed to the state legislature for change, citing observations of extreme neglect and abuse and advocating that people with disabilities were quantitatively different by degree and not subhuman, and therefore deserving of proper care, training and education (Gollaher, 1993).

The earliest years of formal American education operated on a “one size fits all” paradigm; students of all ages were grouped together in class until the latter half of the nineteenth century with an expectation that older students would assist in reinforcing lessons to the younger ones (Angus et al., 1988). However, as prominent developmental and behavioral theorists such as Piaget, Vygotsky, Maslow, Skinner and Bandura can attest, learning has never been a “one size fits all” endeavor, which meant that this system was exclusionary to multiple demographics. The first school to address students with any special needs was the Hartford School for the Deaf in Connecticut in 1817, led by Thomas Galludet. The Perkins Institute for the Blind was founded by Dr. Samuel Howe in 1829 (Paterson, 2021). The Industrial Revolution further prompted interest in creating special education options to support vocationally driven training programs for people with disabilities, as there was a need for a robust labor force (Spaulding & Pratt, 2015). While these initial programs were designed to be an inclusive, family-like environment with an emphasis on integration into society, economic demands ultimately shifted the

nature of these programs back into custodial residences focused mostly on skill and trade preparation, unfortunately resembling the almshouses or prisons that had been commonplace before (Winzer, 2009).

As the world moved into the early twentieth century, a progressive shift towards child-centered education occurred, meaning the differing needs of learners began to be considered (Braster and del Pozo Andrés, 2020). However, the newfound interest in intelligence and achievement testing (Carson, 2007) likewise provided novel tools to identify, quantify and segregate people with disabilities from society (Carey, 2009). IQ tests allowed for the creation of IQ benchmarks across the spectrum, including testing markers for both disability and giftedness (Brown and Wishney, 2017). For people with disabilities, segregation was further spurred by the rise of eugenics, which postulated that people with disabilities were possible threats and should live with significant restrictions and shifted the public perception back to viewing people with disabilities as qualitatively different (Winzer, 1993). As legislation regarding compulsory attendance in education was signed into law, students with disabilities were included yet segregated into their own classes or schools away from other children, often only receiving poor attempts at education or any other kind of aid (LaNear & Frattura, 2007; Paul et al., 2001). However, the use of eugenics as justification for genocide during World War II, along with the high volume of veterans who returned with physical and emotional disabilities quickly shifted public perception once again in favor of supporting those with special needs (Spaulding & Pratt, 2015). Parents continued to lobby for their children in court, and enough cases were heard that it became a federal mandate to provide education to all children (Gartner

& Lipsky, 1987). Additionally, in 1941, Annemarie Roeper, Ed.D., opened the Roeper School in Michigan to address the needs of gifted students, an underserved group with their own individual unique cognitive and socioemotional needs (Scott, 2012). Along with advancements in understanding human development and cognition, the Civil Rights movements in the 1950s-1970s included campaigns for the advancement in the treatment of people with disabilities. Activism on the national level included the President's Panel on Mental Retardation in 1961, the National Institute of Child Health and Human Development in 1962, and the National Association for Retarded Citizens (Spaulding & Pratt, 2015). Furthermore, the US Supreme Court Case *Brown v. Board of Education*'s mandated that segregation of *any* student based on unalterable characteristics was unconstitutional and set a precedent that education systems with separate tracks students were neither fair nor equal, and should be dissolved (McLaughlin & Henderson, 2000). In 1972, the Pennsylvania court case *Pennsylvania Association for Retarded Children (PARC) vs. Commonwealth of Pennsylvania* determined that children with disabilities cannot be excluded from public schools, and that public schools are required to provide an individualized education for students with intellectual disabilities (Yell et al., 1998). This case provided justification and a framework for other states to follow suit, eventually leading to the Education for All Handicapped Children Act (EACHCA) in 1975, which later strengthened and expanded into the Individuals with Disabilities Act (IDEA) (Gartner & Lipsky, 1987; Spaulding & Pratt, 2015). However, while the EACHCA mandated that children with disabilities were to be included in public education classrooms based on student capability, a continuum developed ranging

between completely segregated resource rooms, to fully inclusive mainstreaming (Kavale & Forness, 2000). Furthermore, in some instances the complete inclusion of students with special needs in general education classrooms came (and comes) at the expense of individualized, appropriate instruction for all students (Fuchs & Fuchs, 1994). For gifted students, the only federal legislation aimed at addressing their needs has been the Jacob K. Javits Gifted and Talented Students Education Act of 1988, which provides funding to identify and educate this demographic, with special attention given to addressing research, program development, and initiatives to reduce identified achievement gaps. This legislation was reauthorized with the Every Student Succeeds Act in 2015 (Brown & Wishney, 2017). However, according to the National Association of Gifted Children (2016, as cited in Brown and Wishney, 2017), programs for gifted students continue to be underfunded due to state and federal mandates lacking provisions to provide appropriate services to these students. Clearly, the challenges of student inclusion with individualized education continue today, both for students with disabilities as well as gifted students.

Socioeconomic Inequity & Inequality

According to Bornstein and Bradley (2003, p. 2), Socioeconomic Status (SES) may be defined as “the relative position of individuals, families or groups in stratified social systems where some societal values (e.g., occupational prestige, education) are not uniformly distributed”. The American Psychological Association (APA) Task Force on SES further notes that SES is a critical determinant of human development, physical/mental health, and wellbeing across the lifespan, commonly measured through

educational attainment, income, and/or occupation (APA Task Force on SES, 2007). Educational attainment is particularly salient when determining SES due to its influence on an individual's occupation and income later in life, which can create conditions for social mobility. Furthermore, educational attainment tends to be a consistent variable once earned, making it an ideal metric for determining SES (Papandrea et al., 2023). However, educational opportunities have long been inequitable in the United States, making educational achievement a biased variable. In the colonial years, early educational options for children were largely dictated by the density of their towns, as well as what their family could afford; in other words, wealthier families could afford better education for their children (Hazlett, 2011; CEP, 2020). Black Americans were long denied any sort of access to fair and appropriate education for hundreds of years (Papandrea et al., 2023). Despite a movement after the Civil War to create educational opportunities for Black Americans, measures such as Jim Crow laws after the Reconstruction period created conditions under which education and literacy testing became means to hinder and discriminate (Boonshoft, 2021). Furthermore, the 1896 US Supreme Court Case *Plessy v. Ferguson* confirmed the constitutionality of 'separate but equal' schools (DuBois & Gill, 1912), which were neither equal nor equitable and thus perpetuated increasing levels of social stratification. Support for segregation at the federal level contributed to the development of racially segregated communities, creating further levels of inequity between neighborhoods (Faber, 2020). In 1954, the US Supreme Court case *Brown v. Board of Education Topeka Kansas* overturned the constitutionality of segregated facilities (Carlton Parsons & Turner, 2014). Unfortunately, it was not until the

mid-20th century that Black Americans were given any opportunity to achieve a minimum level of education comparable to their White counterparts, which likewise perpetuated inequity in career opportunities, income potential and lifestyle options, including housing (Papandrea et al., 2023). Thus, Black Americans have been placed at multiple, distinct systemic disadvantages (Bauman, 1998).

Coleman et al. (1966) note that systemic inequalities children experience due to their home, neighborhood and peer environment typically carry over into adulthood, creating conditions for intergenerational challenges. According to Papandrea et al. (2023), intergenerational poverty in combination with under-resourced communities deepens minoritization and oppression, which can affect cognitive outcomes, including language development and academic achievement. According to Reardon (2011), the SES-based academic achievement gap has been widening since the early 1940s, with the achievement gaps between children born in 2001 approximately 75% larger than among children born in the 1940s. Reardon (2011) notes that this trend may be explained by four factors: growing income inequality, high-income families increasing investment in their children's education, high-income families having increasing access to financial and social resources beneficial to their children, and ongoing income segregation. As of 2021, the median family income of White households with children was \$102,700, roughly double that of Black families (\$46,600), Hispanic families (\$57,800) and American Indian/Alaska Native families (\$53,900) (Children's Defense Fund, 2023). As of 2023, approximately 11 million children out of the 74 million in the United States were

identified as living in poverty, with 1 in 6 children (approximately 3 million) under the age of five (Children's Defense Fund, 2023).

Just as the SES gaps continue to worsen for families, so too does the SES-based educational achievement gap (Huang, 2015; Lee, 2006). According to the Urban Institute (2017), public schools are funded through a combination of local, state and federal dollars, with individual state factors such as policies and sources of income determining how money is allocated to each district. In other words, some states may choose to direct funding to low-income students, while other states may allocate more money to non-poor students. Funding trends for low-SES schools tend to be highest in places where schools are the most economically segregated, given that such districts are a clear target for assistance. Yet, all schools are not funded equally, creating the potential for disparity due to lack of community resources. In addition to factors outside of the classroom, individual school-wide cultural practices, resources, staffing quality and teaching pedagogy between districts have been found to vary based on SES (Hempel-Jorgensen et al., 2018). By definition, *pedagogy* is

the observable act of teaching together with its attendant discourse of educational theories, values, evidence and justifications. It is what one needs to know, and the skills one needs to command, in order to make and justify the many different kinds of decisions of which teaching is constituted. (Alexander, 2008, p. 29).

Exemplary pedagogy are methods that place the child at the center of a collaborative teaching and learning process, wherein the child's individual and differentiated needs as a learner drive the teacher's planning (Boyle & Charles, 2010). Despite individualized learning being considered best practice, the current dominant teaching pedagogy tends to be towards whole-class teaching, which skews the teaching and learning process towards the dissemination of facts and information (Myhill, 2006) rather than the ideal co-created learning process espoused by key learning theorists such as Piaget and Vygotsky. However, a common concern for students from low SES backgrounds is what Haberman (1991) termed the "Pedagogy of Poverty", which suggests that teaching practices within low SES schools are more likely to include elements of strong teacher control, an overemphasis on delivery of knowledge rather than co-constructed learning, and the intentional placement of students in passive positions (Hempel-Jorgensen et al., 2018). Furthermore, Powell (2001) notes that the more formal 'language of schooling' may not mirror the same sort of vocabulary or syntax within a child's home, in much the same way that a child's home culture and appropriate social interaction may vary from what is expected at school, thereby creating yet more possibilities for disparity. For example, Tizard et al. (1983) found that teachers' implicit bias towards students of working-class households often caused teachers to use less complex language with these children and change their speech for middle- or upper-class students. These disparities are especially noticeable in the use of centrally created and disseminated teaching

materials, as well as the obvious and continued differences in results on standardized assessments such as the SAT (Boyle & Charles, 2012; Powell, 2001). Huang (2015) suggests that closing the educational gap is possible, but will require multiple comprehensive initiatives, including preparing transformative school leaders (Johnson & Uline, 2005), preparing and providing high quality teachers to all students (Boyd et al., 2008), and supporting curriculum enrichment along with differentiated learning and tracking (Beecher & Sweeny, 2008). Addressing other factors within a student's immediate environment, such as providing family and community support, may provide alternative sources of support (Huang, 2015). Other academics suggest that the achievement gaps cannot truly be eliminated without likewise addressing income inequality and poverty (Berliner, 2013).

The Current Landscape of Education in the United States

As of today, it is the states that hold primary responsibility for providing education for their residents, and each state has its own approach to doing so while remaining accountable to the vast array of federal mandates regarding teacher development, curriculum, and assessment (Perna, 2023; Perna & Finney, 2014). Funding for education is the largest budget expense of each state, with primary revenue streams coming from both the state and local levels (Brown & Wishney, 2017). The federal government additionally allocates approximately 3% of its total budget towards education, which translates to about 13.6% of K-12 funding (Hanson, 2024). Per the

National Center for Education Statistics (NCES, 2024), approximately \$18,614 was spent per pupil on average for the 2023 calendar year when accounting for both immediate expenditures (teacher salary and benefits, supplies, etc.) and capital outlay (property, buildings, etc.). The discussion regarding public education reform continues, most prominently in respect to staffing, curriculum and assessment. In addition to public education, parents have additional options to consider such as charter schools, private schools and homeschooling, each with their own potential benefits and drawbacks. Proponents of increased levels of federal involvement in education see potential for continued expansion of fundamental education rights, while more conservative voices focus on lessening federal involvement to allow states greater authority in governing their schools on a local level (Reed, 2014).

Modern Teacher Development and the Professional Staffing Shortage

Starting in 1994 with the Goals 2000: Educate America Act, pre-service teacher education and professional development have been identified as key components for change in the modern push for educational reform (Earley & Schneider, 1996). NCLB implemented the mandate that every child would have access to a Highly Qualified Teacher (HQT), who holds at least a bachelor's degree, maintains full state certification or licensure, and have proved they know each subject they teach, typically via a comprehensive state assessment (U.S. Department of Education, 2004). All fifty states have specific standards that preservice teachers must meet in order to receive an initial teaching license, with additional requirements for ongoing evaluation and professional

development (U.S. Department of Education, 2013, as cited in Bales, 2015). Bales (2015) notes that despite the initial teacher education changes required by NCLB, it was President Barack Obama's 2009 Race to the Top Policy that fueled sweeping standards-based reform efforts, essentially directing efforts at how teachers are prepared, what they are expected to know, how they are evaluated and what constitutes "effectiveness".

Sutcher et al. (2016) defines a teacher shortage as the "inability to fill vacancies at current wages with individuals qualified to teach in fields needed". Since the 1990-1991 academic year, the US Department of Education has kept statistics on teacher shortages by state, outlining an ongoing and increasing issue. While staffing shortages have been a steadily increasing issue over the past several decades, the COVID-19 pandemic exacerbated this shortage (Schmitt & DeCourcy, 2022). The NCES surveyed a sample of schools during the 2022-2023 academic year regarding teacher absences, concluding that 53% of public schools surveyed in August felt understaffed for the school year, and 45% of public schools reported one or more vacant teaching positions in October of that year (NCES, 2023). As a result, non-instructional staff have found themselves in teaching positions, which impacts the overall functioning of schools nationwide. Students may not be learning from an instructor with required prerequisite knowledge in content area and pedagogy, while non-instructional staff duties may not be accomplished to keep the school running as effectively. The shortages for other professional education staff have likewise intensified as well. For example, the attrition rate of public school principals has increased, with roughly 1 in 10 leaving the profession between the 2020-2021 and 2021-2022 school years (NCES, 2023). According to the American School Counseling

Association (ASCA, 2023), 40% of surveyed public school districts during the 2022-2023 academic year indicated that it was “difficult” or “very difficult” to fill “mental health professional roles”, such as school counselors, psychologists and social workers. Even prior to the COVID-19 pandemic, concerns such as increasing job demands, emotional exhaustion, low morale, modest salaries, burnout from job-related stress and worries regarding safety created conditions for educational professionals to leave the field (Mullen et al., 2018; Koch, 2024). With the 2021 American Rescue Plan Elementary and Secondary School Emergency Relief Fund (ARP ESSER) , states have capitalized on millions of dollars in grants and federal funds in an attempt to find alternative ways to attract new teaching professionals, such as apprenticeships that provide onsite training for high school students to become paraprofessionals after graduation, and residency programs that allow preservice teachers to be employed by a district as they work to complete their bachelor-level degree while staying within their communities to support connections and diversity in the teaching force (Koch, 2024). The American School Counseling Association (ASCA) likewise makes similar recommendations for increasing school counselor attraction and retention, including making the required master’s level degree programs more affordable for prospective students, creating new pathways to enter the field, protecting the appropriate school counselor role, increasing pay, and engaging in ongoing advocacy to support counselors (ASCA, 2023).

Current Educational Structures and Curriculum

In the 1990s, the federal Goals 2000: Educate America Act required states to develop content standards for student learning across all grade levels (Bales, 2015), along with funding to support teaching the content standards to preservice and currently practicing educators. However, the funding for the Goals 2000: Educate America Act were insufficient for the significant changes required, and so these reforms were not enforced until the implementation of the 1994 reauthorization of the Elementary and Secondary Education Act (ESEA), which in addition to standardized curriculum also introduced alignment of teaching standards, use of student achievement data to monitor both student and teacher performances, and accountability measures that rewarded or sanctioned schools based on achievement scores (Hamilton et al., 2008- IN BALES). The 2001 reauthorization of the ESEA, also referred to as NCLB, tied state compliance of ESEA mandates to funding, and additionally mandated states had to set grade-level achievement standards, develop systems to measure the progress of students against identified achievement goals, and establish a definition of ‘adequate yearly progress’ (AYP) to determine the success level of each school district (U.S. Department of Education, 2004). However, as each state had their own measuring systems, it was argued that states could not be effectively compared against one another (Dotson & Foley, 2016). In 2009, the American Recovery and Reinvestment Act (ARRA) provided the funding for the Race to the Top Fund, which rewarded states for developing and implementing projects to advance teaching and learning in four areas: adoption of rigorous standards and assessments, recruiting, developing, retaining and rewarding effective teaching staff and administration, building comprehensive data systems to

measure student achievement while informing teachers how to improve, and improving the lowest-performing schools (U.S. Department of Education, 2009, as cited in Bales, 2015). As a part of the “rigorous standards and assessments” category, adoption of the Common Core State Standards (CCSS) and utilization of assessments produced by the SMARTER Balanced Assessment Consortium were recommended (Bales, 2015).

According to the Common Core State Standards Initiative (2025), the CCSS were designed to focus on core conceptual understandings and procedures while communicating what is expected that students should be able to do (i.e., have mastered) by the end of each grade and providing the means by which states could compare achievement. According to the NCES (2025), 44 states have implemented CCSS for English Language Arts and Mathematics for grades 3-12, with Alaska, Indiana, Nebraska, Oklahoma, South Carolina, Texas, and Virginia opting out. Currently, states continue to use their own sets of standards for other subjects, with individual districts having the option to choose individual curriculum and materials to meet those standards. While proponents of the CCSS see value in the data collected for driving educational decisions, critics vocalize concern that the high-stakes testing conducted to collect this data actively harm children both academically and emotionally (Horn, 2003; Popham, 2001) while not supporting learning or achievement (Dotson & Foley, 2016).

Achievement assessments may be used as the basis to accept, promote or retain students, as well as fund or defund schools, but often fail to speak to a holistic picture of a student as they cannot assess outside factors like ability, behavior, readiness to test and socioeconomic status (Brooks-Gunn & Duncan, 1997; Wiggins, 2012). Conley (2011)

and Ravitch (2013) identify concerns about the use of CCSS to create a system of hyper-accountability via curriculum that had not been fully vetted before implementation.

Tienken (2011) noted that while much of the research done that supported the CCSS at first glance, a more thorough review identifies that this research was not adequately empirical in nature and subject to significant bias. Other critics report that the standards are exceedingly vague (Schmoker & Graff, 2011), introduce concepts before they are developmentally appropriate (Carmichael et al., 2010), and that the CCSS create a scenario for a “one size fits all” curriculum counterintuitive to best teaching practices (Westervelt, 2014).

Since the implementation of NCLB in 2001, public education has seen a steady increase in the amount of required instructional time and testing for students in the core areas of literacy and math, often at the expense of “extracurricular” learning such as the arts and physical education as well as recess or other breaks (Taylor, 2021; Bershwinger & Brusseau, 2017). The Center for Disease Control and Prevention (CDC) defines recess as a regularly scheduled period in elementary school settings for unstructured physical activities and play time (CDC, 2013). It is professionally recommended that children and adolescents between the ages of 6-17 engage in at least 60 minutes of physical activity per day (CDC, 2017). Hanscom (2016) identifies that unstructured outdoor play provides a litany of benefits for children’s healthy development, both physically and socially. This unstructured period for play around peers likewise further supports a child’s cognitive development via the refinement of ‘cultural tools’ to support key processes and develop the capacity to self-regulate their own behaviors based on environmental feedback, which

in turn increases capacity for abstract thought and supports classroom learning (Bodrova & Leong, 2015; Lillard et al., 2013). A study conducted by Stapp and Karr (2018) found that recess supports the continuation of on-task behaviors in the classroom, while a study conducted by Shepard (1997) found that a reduction of 240 minutes of instructional time per week in favor of recess led to higher assessment scores in math. Yet Egan et al. (2019) reports that elementary school students spend approximately 63% of their school day in sedentary positions, with additional factors such as loss of play spaces and parent safety concerns further restricting opportunities for movement outside of the school day (Burriss & Burriss, 2011). According to the National Association of State Boards of Education (2024), 9 states currently require daily recess for students, while 14 have recommended amounts of recess time; 17 states have a non-codified policy for districts regarding recess time, and 13 states do not mention recess as a policy at all. Thus, some districts may be free to do a disservice to their students' physical, academic and mental wellbeing in the pursuit of higher assessment scores, counterintuitive to theories regarding child development and learning.

Additional and Alternative Education Options in the United States

In addition to typical public schools, the following K-12 educational options exist in the United States: charter schools, magnet schools, private schools, independent schools and homeschooling, each with their own benefits and drawbacks. In 1962, Milton Friedman postulated that there is no particular reason why a government should operate schooling and instead proposed that education be based on a free-market perspective in

order to drive competition and lead to higher quality educational outcomes (Levin, 2002). After *A Nation at Risk* was published in 1983, discourse regarding school reform centered around changes in student learning, the practice of teaching, and the organization and management of public schools (Louzano & Simielli, 2020). Elmore (1990) defined three structural remodels: the technical model, professional model, and client model, with the client model representing an education entity responsive to and driven by the needs and preferences of parents and their students (the clients) (Louzano & Simielli, 2020). Each of these options (charter schools, magnet schools, private schools and homeschooling) seek to accomplish just that. According to Nathan (1996), charter schools are public schools that are financed by the same per-pupil funds that traditional schools receive, making them public educational entities. However, charter schools operate under a contract (or ‘charter’) between whoever runs the school and the sponsoring entity, such as a public school district, university or state (Louzano & Simielli, 2020). In exchange for waivers from restrictions that govern traditional public schools, these institutions are held accountable for their educational results and may have their charter revoked without sufficient data to demonstrate effectiveness (Nathan, 1996). Magnet schools, meanwhile, are specialty schools within a public school district that emphasize a particular theme, such as Science, Technology, Engineering and Mathematics (STEM), or performing arts (Clayburn, 2023). According to the NSBA Center for Public Education (2017), at the time of their writing approximately 87% of all school-aged children attended public school, with 71% in a traditional public school, 4% in charter schools, 4% in magnet schools (specialized schools under jurisdiction of public-school districts) and 8% in inter-

and intra-district transfer schools. This data suggests that the majority of families continue to choose public options, despite over twenty years of school choice policies (Louzano & Simielli, 2020).

Another option for students are private schools or independent schools. Private schools are defined as schools not primarily supported by public funds, that provide classroom instruction for one or more grades kindergarten through 12th grade, and have one or more teachers (NCES, 2021). Independent schools are nonprofit, private institutions governed by boards of trustees, developed around individual philosophies, may belong to individual associations, and are accredited by state-approved governing bodies (National Association of Independent Schools [NAIS], 2025). Furthermore, both varieties of schools operate under state-based regulations, which define legal requirements for licensing and operation (U.S. Department of Education, 2009). Both private and independent schools may require specific criteria of applicants for admission and may charge tuition fees. Voucher programs, which are programs that allow students to attend private schools of their choosing by paying a portion (or entirety) of a school's tuition rates with state-financed funding, provide an opportunity for a greater pool of students to attend such institutions (Louzano & Simielli, 2020). However, such programs likewise come at the cost of siphoning funding away from public educational options. According to the NCES (2021), in the fall of 2019, approximately 66% of private schools had a religious-based orientation or purpose, and less than 10% featured Montessori programs, specialty programs, special education programs or alternative programs.

Furthermore, the largest number of private school students were enrolled in schools located in urban areas, followed by those in suburban areas, then rural, and finally towns.

The last option of note is homeschooling, which is comprised of education-at-home, either within families or small cooperatives led by parents. Parents may choose to structure their curriculum and school time as they see fit, with options to purchase pre-made curriculum or design it themselves. Much like private or independent schools, homeschooling operations are subject to state-based regulations, with varying degrees of restriction (Home School Legal Defense Association [HSLDA], 2024). Approximately 3.1 million (or 6%) of school-aged children in the United States identified as homeschooled in the 2021-2022 academic year (National Home Education Research Institute [NHERI], 2024).

Informal, at-home education has existed as long as there have been children and adolescents needing to learn. While the formal American education system originated with the intention to develop literacy to read the Protestant Bible and produce “civilized” members of society (Vinovskis, 2019), the formal American education system likewise began around the same time as formal education in Europe, which focused on developing students’ ability to read, write and do arithmetic required of many of the new careers at the time, such as merchants, lawyers, bankers and government officials (Crain, 2016). Over the next several centuries, the American education system continued to develop in tandem with economic advancements and experience both the implicit and explicit effects of complex social systems of privilege and oppression. Today’s public education

system is an interplay between developmental and pedagogical best practices at odds with businesslike administrative practices and an ongoing need to assess and ‘reform’ education, all while perpetuating conditions that are inherently unequal and inequitable for all learners. While additional options for K-12 education have developed with their benefits and drawbacks, the mission to create developmentally minded schools that are both equal and equitable continues.

Children’s Loss of Nature and the Subsequent Impact on Childhood

Wellness

Anyone who has ever taken a child outside to play has witnessed a special relationship. Nature, in its many iterations, holds a special fascination for young minds. According to Kahn (1997), there is extensive research into the relationship between children and nature. In general, it is believed that the utilization of intentional engagement with nature in a nonthreatening space serves to encourage positive views of self, develop self-efficacy, support the development of trusting relationships, improve interpersonal skills and learn complex cognitive tasks (Sempik, 2008; Schreuder et al., 2014). The following section describes: 1. general theories and frameworks supporting a human/nature connection; 2. benefits children receive by engaging with nature; and 3. the increase of negative physical and socioemotional consequences the loss of nature-based spaces have on children.

Ecological Psychology

J.J. Gibson and E.J. Gibson pioneered ecological psychology as an alternative theory to cognitive and behavioral approaches of cognitive development. Heft and Chawla (2006) note that this framework provides a different viewpoint from many other theories of psychology, which propose that a human's construction of the world is impacted by social structures, such as culture, class and ethnicity; or in other words, only rooted in mental constructs. According to Heft (2001), ecological psychology is grounded in evolutionary theory and provides an alternative to cognitivism and behaviorism for understanding human cognition (Lobo et al., 2018). In this theory, humans are considered to be akin to other creatures who experience the world through direct experiences. From birth, a constant reciprocal relationship exists between a human and its environment, which allows humans to interact with the world and its resources to behave adaptively (Chawla, 2007).

Ecological psychology emphasizes the importance of learning about the world through firsthand experiences, which provides opportunities for sensory-rich, meaningful engagement with the environment (Chawla, 2007). Edith Cobb, a social worker, expressed a belief that the 'genius of childhood' is a child's ability to use their five senses in a feedback process with their environment to create meaningful and intuitive neural networks (Schauman, 2013). Gibson and Gibson (1955) stated that an ecological perspective focuses on perceptual learning; on exploration, detection, selection and perception to help define learning with regards to a given environment. Chawla (2007) identifies that young children begin learning in their environment through informal joint perceptual learning; that is, attending and noticing that which an adult likewise notices,

with a strong likelihood of re-attending to stimuli in their environment that provide positive or pleasing feedback. In a reciprocal environment, relationships between organisms are contingent upon what Gibson (1979) calls *affordances*; that is, the interaction between two organisms relies on the characteristic of each and how they can accommodate one another. For instance, a child's ability to reach and enjoy berries from a berry bush is going to be contingent upon both the child's physical characteristics (such as height, arm length, etc.) as well as the bush's characteristics (such as location, if it has berries available, etc.). Kytä (2004) identified that environments vary in the types of *affordances* they provide, which then may be moderated by others (in this case, adults). The first is *fields of free action*, in which children can explore their world without rules or guidance from adults. The second is termed *promoted action*, which are environments wherein adults encourage the child to act in specific ways with their environment; and the third is *constrained action*, wherein adults limit what a child can do. Barker (1968) created the concept of *behavior settings*, which explains that particular events in specific places have expected behavior patterns. For instance, there are specific roles and expected behaviors at a children's after-school soccer game. Kytä (2002) notes that the more freedom a child has to move through their environment, the more likely they are to feel motivated to continue their exploration. Similarly, Kellert (2002) identifies that children may have direct, indirect and vicarious experiences with nature. Direct experiences involve actual free, spontaneous physical contact with the environment and nonhuman beings. Kellert uses the term *indirect experience* to refer to more restricted or managed experiences, such as viewing animals at an aquarium or a nature center. While

direct experiences provide the greatest level of engagement and are considered paramount in middle childhood for establishing an ecological identity, indirect experiences of nature such as through books or media are increasingly common.

Biophilia: Wilson & Fromm

Biophilia is a contraction of two words which descend from ancient Greek: “life” (*bio*) and “love” (*philia*). *Biophilia* literally translates to “love of life” (Barbiero & Berto, 2021). When talking about biophilia in a nature-based context, this term may refer to both “life”; as in, properties common to all living beings (Lenton et al., 2020), or “Life”, which recognizes the process of living organisms functioning in interaction with their environment (Barbiero, 2014). In other words, *biophilia* might mean love for living creatures, *or* a love for all-encompassing nature (Barbiero & Berto, 2021).

Both German psychologist Erich Fromm and American biologist E.O. Wilson used the word *biophilia* to describe their nature-based theories (Barbiero & Berto, 2021). Fromm defined *biophilia* as “the passionate love of life and of all that is alive” (Fromm, 1973, p. 406). Fromm believed that biophilia manifests in living organisms as a “wish to further growth, whether in a person, a plant, an idea, or a social group” (Fromm, 1973, p. 406). According to Fromm (1956), the four elements of biophilia include: care, responsibility, respect and knowledge. Fromm largely developed his concept of biophilia as it pertains to the interpersonal relationships between humans from a social justice perspective (Barbiero and Berto, 2021). Gunderson (2014) proposed a nature-focused adjustment to Fromm’s biophilia, suggesting that (1) a love of Nature means an active concern for its growth and prosperity, (2) an ability to respond to and satisfy the needs of

Nature, (3) respect for the autonomy and independence of Nature separate from human interests, and (4) having knowledge of Nature without feeling compelled to interfere or dominate it.

E.O. Wilson, however, defines *biophilia* as “our innate tendency to focus upon life and life-like forms and, in some instances, to affiliate with them emotionally” (Wilson, 2002, p. 134) like empathy. According to Kaplan (1995), nature provides a fascination for humans which triggers the involuntary/effortless modality of attention, which then becomes restive and restorative for both children (Barbiero et al., 2014) and adults (Berto, 2005). This attention can trigger an emotional state such as empathy. *Empathy* may be defined as “an emotional state triggered by another’s emotional state or situation, in which one feels what the other feels or would normally be expected to feel in his situation” (Hoffman, 2008). Like other mammals (Preston & de Waal, 2002), humans have the distinct ability to experience empathy, which includes towards other nonhuman beings, such as pets or other animals. This empathetic contact may support stress reduction (Ulrich et al., 1991). According to Capaldi et al. (2015), feelings of affiliation/empathy with nature depend on how an individual sees, treats and cares for animals, plants and natural resources, as well as familiarity and comfortability with natural environments (Korpela et al., 2018). Khan and Kellert (2002) suggest that regardless of which version of *biophilia* a reader ascribes to, an affiliation with nature develops early in childhood; in fact, the relationship between children and nature has been extensively studied (Tillmann et al., 2018). Wells and Lekies (2006) assert that children’s primary experiences with nature are fundamental to their wellbeing. According

to Hordyk et al. (2015), children require frequent contact with domestic forms of nature, and extensions out into increasingly more wild nature, in order to stimulate and maintain a strong sense of biophilia.

Benefits of Nature Spaces for Children

There is a significant body of evidence detailing the benefits of contact with nature for people of all ages (Menardo et al., 2021; McCurdy et al., 2010; Pretty et al., 2009; Ulrich et al., 1991; Kaplan, 1995). The relationship between children and nature, in particular, has been extensively studied (Khan, 1997) and existing studies identify numerous cognitive, physical and socioemotional benefits for children who are regularly engaged with a natural environment. From a philosophical, well-being perspective the philosopher Martha Nussbaum identified ten ‘Central Capabilities’ that define a flourishing, dignified life adapted for childhood based on Aristotle’s concept of *eudaimonia*, or ‘human flourishing’ (Nussbaum, 2011). Chawla (2015) further expanded on how children’s engagement with nature supports each of these Central Capabilities based on existing research. Each of these initial Central Capabilities, along with their nature connection identified by Chawla (2015), are listed in Table 2.2:

Table 2.2

Nussbaum’s Adapted Central Capabilities for Children and the Empirically-Based Impact of Nature Access on Each Capability

Nussbaum’s Capability	Definition of Each Capability	Associated Impact(s) of Nature Access
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Life	Being able to live to the end of a life of a normal length	● Increased birth weight ● Lower infant mortality
Bodily Health	Being able to have good health	● Lower rates of asthma and allergies ● Vitamin D production from sunlight ● Shade protection from excessive sun exposure ● Better motor coordination and balance ● More moderate to vigorous physical activity ● Healthier weight
Bodily Integrity	Being able to move freely from place to place	● More walking or cycling on green streets or near parks ● Free exploration and manipulation of the environment
Senses, Imagination & Thought	Being able to use the senses and have pleasurable experiences; to imagine, think and reason	● Better concentration, less inattention and impulsivity ● Imaginative play; resourceful use of nature's loose parts ● Rich multisensory experiences in the natural world

Emotions	Being able to have attachment to things and people outside of self; to feel a range of emotion; not having one's emotional development hampered by fear, anxiety or restricted experiences	● Development of place attachments ● Experiences of environmental competence ● Green retreats for emotional restoration ● Less depression, psychological distress, general stress; greater sense of energy
Practical Reason	Being able to form a conception of the good and engage in critical reflection about the planning of one's life	● Participation in evaluating and planning healthy environments
Affiliation	Being able to live with and toward others; to recognize and show concern for other humans	● Moore cooperative and creative social play
Other Species	Being able to live with concern for and in relation to animals, plants, and nature	● Direct exposure to the nature world ● Learning about nature through exploration and engagement ● Sense of affiliation and connection with nature ● Childhood play in nature forms a foundation for lifelong care for nature and adult recreation in green spaces

Play	Being able to laugh, play and enjoy recreational activities	● Moore outdoor play in green neighborhoods ● More creative play in natural settings
Control Over One's Environment	Being able to hold property and have property rights; having the right of political participation	● Freedom to appropriate undeveloped land that is not controlled by adults ● Inclusion in participatory planning and design

The Italian physician and educator, Maria Montessori, is credited with saying, “play is the work of the child” (Liu et al., 2017). Free, creative play, either alone or with peers, allows children to develop a sense of self, along with critical cognitive thinking skills (Collier, 1979; Piaget, 1974) and valuable social skills (Vygostky, 1967; Piaget, 1962). Historically, a majority of free play has occurred outdoors (Nabhan & Trimble, 1994). According to Gaster (1991), over the years, American children have made use of any outdoor places close to home that were not already “claimed” and utilized by adults, such as kitchen gardens, pastures, fields, woods, overgrown vacant lots, etc. Outdoor play allows children to actively discover how the world works and their personal abilities to influence it (Gittus, 1976). Ethnographic studies by Hart (1979), for instance, detailed the “microspheres” that children created using natural resources to manipulate and traverse through their immediate environment in increasingly complex ways. This sort of consistent engagement with a particular environment allows for *place attachment*. Drawing upon the work of Bowlby and Ainsworth (1991), place attachment is the

combined knowledge, beliefs, behaviors and actions that create an affiliation for a particular setting (Scannell & Gifford, 2010). According to Sobel (2002), place attachment supports a child's quest to explore self, as developing affinity and comfort with a place allows a child to construct a safe personal space in which to experiment with different identities and abilities. Nature likewise provides continuity through endless patterns, which allows people to revisit fond memories and experiences throughout their lifetime (Chawla, 2019). Furthermore, independent outdoor play provides opportunities to engage in age-appropriate social situations and try out different social roles, which serve as formative practice for skills they will need as adults (Hart, 1979). Engagement in the outdoors can help children re-regulate their bodies and refocus their attention (Pellegrini & Bjorkland, 1997). A study of children with Attention Deficit Hyperactivity Disorder (ADHD) conducted by Taylor et al. (2001) found that participants were better able to concentrate, follow instructions and complete tasks after playing in a "green environment". ADHD symptom reduction positively correlated to the level of "green" in a given play environment. While the literature often uses the term "green spaces" or similar "green" phrasing, Sugar (2021) does note that "green space" is not a universally defined term as of yet, and therefore does not have any accepted minimum standard.

In addition to the various physical, cognitive and socioemotional benefits, regular engagement with the outdoors creates opportunities for children to develop positive environmental attitudes. Barrable and Booth (2020) identify childhood, especially early childhood, as an ideal time to begin developing an ecological identity. According to Cheng and Monroe (2012), children and adolescents with higher measures of nature

connection show greater environmental knowledge, and subsequently a greater willingness to commit to conserving nature (Giusti, 2019). Clayton and Opatow (2003) refer to the concept of *environmental identity*, which considers the development of an individual's self-concept in relation to the natural world and includes the degree to which a person is willing to act for the environment. Green et al. (2016) propose a model of environmental identity development (EID) which extends Erikson's (1972) Psychosocial Theory of Identity Development, as shown in Table 2.3. For the purposes of this discussion, only the first four stages of Erikson's model are represented for comparison purposes. It is interesting to note that the EID model begins in infancy and, unlike Erikson's model, suggests that these developmental dilemmas may progress over the course of a lifetime:

Table 2.3

Erikson's Psychosocial Theory of Identity Development with an Environmental Identity Development Added

Erikson's Stage	Basic Conflict	Environmental Extension	Environmental Issue for Resolution
Infancy: 0-1 Year	Trust vs. Mistrust	Foundation: Trust in Nature vs. Mistrust in Nature	The encounters a caregiver provides to an infant will support either infants beginning to see themselves as part of the environment, or developing a mistrust/fear in their surroundings.

		(Birth-Adult)	
Early Childhood: 1-3 Years	Autonomy vs. Shame and Doubt	First Progression: Spatial Autonomy vs. Environmental Shame (1 Year-Adult)	Toddlers begin exploring and forming their own understanding of the natural environment. Caregivers can support this exploration by providing access to loose parts. Discouragement from adults may lead children towards feelings of shame or doubt with the natural environment.
Play Age: 3-6 Years	Initiative vs. Guilt	Second Progression: Environmental Competency vs. Environmental Disdain	Children gain a sense of environmental competency through positive experiences in nature, including free play and experimentation. If their opportunities are limited, children may develop feelings of environmental disdain, leading to contempt for non-human beings and aspects of nature.

		(3 Years-Adult)	
School Age: 7-11 Years	Industry vs. Inferiority	Third Progression: Environmental Action vs. Environmental Harm (4 years-Adult)	Children's play can shift towards the development of skills and tools that can be applied to real-world scenarios. Caregivers can play a significant role in modeling ecological values and behaviors while promoting inquiry and action in response to environmental challenges. Failure to do so may promote behaviors that result in environmental neglect.

An Ongoing Loss of Nature and Natural Spaces for Children

Since the beginning of the Industrial Revolution, the United States has seen an ever-growing social shift towards urbanization, which in turn affects the kinds of

environments accessible to children (Chawla, 2015). According to the United Nations (2018), global urbanization has increased rapidly since 1950, with nearly 82% of the population in North America living in an urban area in 2018 and a trajectory that is only projected to increase over the coming decades. Environmental pollution and an increase in urban sprawl are leading to extensive environmental loss and threatening biodiversity on a global scale (Kellert, 1996). Contact with nature has therefore become less frequent (Turner et al., 2004), and children progressively have fewer opportunities to be, let alone play in natural settings (Clements, 2004; Chawla, 2016). This loss is particularly worrisome for those in social minorities, who have been historically limited by discriminatory policies and therefore deprived of the health and wellness outcomes associated with nature (Byrne & Wolch, 2009). Khan (2002) describes the concept of *environmental generational amnesia*, wherein each generation identifies the kind of nature they encounter as the norm, without realizing the ongoing degradation of the environment over time. An increase in safety concerns for children being outside alone (Yates, 2024) has created an “extinction of experience” (Beery & Jørgensen, 2018). This contributes to a rise in “hyper-parenting” and “helicopter parenting” wherein parents overmanage or remain overly close to their children in pursuit of safety. Together, these factors have greatly reduced children's opportunities to go outdoors independently (Harber & Obee, 2021). This loss of environmental accessibility and ability to roam away from parents has created potential loss in the unique culture of childhood (Chawla, 2015; Hart, 1979). Furthermore, the rise of technology and “screen time” has increased the

tendencies for children to remain sedentary indoors (Larson et al., 2019); Chawla, 2020), and for play to be identified as a primarily indoor activity (Karsten, 2005).

Often, recess at school is seen as a key designated time for elementary children to engage in regular outdoor play. However, time for recess is not guaranteed by all 50 states (National Association of State Boards of Education, 2024), and time demands associated with present instructional time and testing often mean the loss of extracurricular learning as well as recess (Taylor, 2021; Bershwinger & Brusseau, 2017). Typical playgrounds in the United States feature schoolyards with asphalt and manufactured play equipment (Sobel, 2004), following an “outdoor gymnasium” model and are often bereft of any natural environmental features (Blizard & Schuster, 2004). These playgrounds also reduce the opportunities for “risky play”, which is defined as a behavior with the potential for both rewards and cost where the outcome is uncertain (Holton, 2004). Sandseter et al. (2017) identify modern Western society as culturally risk-averse; however, the lack of risky play (such as what you often find in natural settings) may contribute to developmental issues in children, such as increased difficulties in physical movement, spatial awareness (Hanscom, 2016) and reduced capacity for judgement, creativity and confidence (Brussoni et al., 2012).

Current Physical and Mental Health Concerns for Children in the United States

In his book, *Last Child in the Woods* (2008), Richard Louv coined the phrase *nature deficit disorder* to describe the apparent correlation between children’s loss of engagement in nature and increase in both mental and physical problems, including psychiatric disorders and obesity. According to the National Institute of Health (NIH),

nearly twenty percent of children and adolescents ages 3-17 in the United States have a mental, emotional, developmental or behavioral disorder (2022). Forty-eight point three percent of youth surveyed who identified as having one or more major depressive episodes stated they did not receive any mental health services in 2022 (Mental Health America, 2024). The Center for Disease Control and Prevention (CDC, 2024) noted that as the level of identified urbanization decreased, the percentage of children who received any mental health treatment increased. According to the CDC (2024), approximately one in five children nationwide experience obesity, which places them at higher risk for serious medical issues such as asthma, sleep apnea, type 2 diabetes, and bone and joint issues (2024). In general, the past several decades have seen a sharp increase in the prevalence of poor attention skills, difficulty controlling emotions, balance, decreased strength and endurance, and weakened immune systems, with many of these issues requiring professional intervention such as counseling and occupational therapy (Hanscom, 2016). Rosin (2014) notes a direct correlation between the loss of creative play outdoors, increase in objectively measured psychiatric disorders and decrease in creativity. This issue is particularly salient in children who live in more urbanized settings, reinforcing the clear environmental justice dilemma (Chawla, 2015). Therefore, it can be said that there appears to be an correlated relationship between children's collective access to nature and their overall wellness. *Wellness* may be defined as “a way of life oriented toward optimal health and well-being, in which body, mind and spirit are integrated by the individual to live life more fully within the human and natural community” (Myers et al., 2000, p. 252).

Research over the past several decades has provided ample evidence regarding the multitude of benefits for children to continue engaging in nature. Generally speaking, the promotion of outdoor play can significantly impact the level of a child's overall physical activity, thereby supporting the reduction and/or prevention of childhood obesity and mental illness (Harrington & Brussoni, 2015; Raustorp et al., 2012). Yet as society continues to grow, it increasingly leans towards an urbanized setting, reducing the typical child's access to nature, and the prevalence of childhood mental and physical concerns continue to increase dramatically. According to Blizard and Schuster (2004), one potential means of curbing childhood health issues is for children to find additional ways to experience nature. Donison and Halsall (2023) note that there is a clear opportunity for the incorporation of outdoor learning experiences within a child's school day, given the amount of time they spend within their given educational system. Therefore, further investigation into ways to incorporate nature into education is warranted.

Nature-Based Schools

Given the extensive amount of time children spend at school, there is a clear opportunity to integrate empirically researched outdoor experiences within the given curriculum. A significant body of research exists detailing the benefits of contact with nature (Menardo et al., 2021), including improved physical health (Harrington & Brussoni, 2015) and gains in interpersonal relationships, including an increase in leadership development and the reduction of antisocial behaviors (Fjørtoft, 2001; Pyle, 2002; Malone & Tranter, 2003), all goals that find connection within educational aims. Furthermore, childhood is considered a critical period for developing an ecological

identity (Barrable & Booth, 2020) and supporting the development of pro-environmental attitudes (Turtle et al., 2015). Historically, nature-based schools were developed to offer this blend of outdoor learning experiences during the school day. Other culturally-based options have likewise developed to offer children and families benefits on a continuum of engagement with the natural world. This section will discuss: 1. nature-based schools and learning models; 2. pedagogy of nature-based school and learning programs, 3. a discussion of currently available literature regarding nature-based learning, and 4. the purpose statement of this dissertation.

History of Nature-Based Schools

According to Chawla (2015), the nature-based school initiative can trace its origins to Scandinavia and Germany. The first known *forest school* was pioneered by Ella Flatau in Denmark in 1952, who adapted the Waldorf-Steiner educational pedagogy to establish a child-led and play-based “walking kindergarten” experience, wherein adults functioned as facilitators rather than teachers (Forest School Foundation, 2020). In Sweden, a military veteran named Gösta Frohm developed *Skogsmulle*, a school which centered around four fictional characters that taught children about nature; subsequent institutions based on this model are referred to as *I Ur Och Sku*, or “Rain or Shine Schools” (Cree & McCree, 2012). Some nations have seen individual, independent schools or organizations operate using nature-based methods for decades before seeing growth due to popularity. For instance, in Germany the first *Waldkindergartens* began to appear in the 1960s, but these schools were not recognized as state-supported institutions until 1993. As another example, the first forest school concept was implemented in the

United States in 1927, but the first official Forest School was not founded until 1996 in California (Forest School Foundation, 2020). Today, nature-based schooling initiatives are widespread through England and Wales, and are gaining traction in the United States along with several other countries including Japan, China, Italy, Australia, New Zealand, South Korea and Canada (Cordiano et al., 2019). After the publication of Richard Louv's *Last Child in the Woods* (2005), the United States in particular saw a dramatic increase in parent interest regarding environmental education. For instance, according to the Forest School Foundation (2020), there are over 240+ nature preschools operating in the United States. However, it is important to note that they are not operationally identical.

Terms and Definitions Associated with Nature-Based Schools

While nature is an essential ingredient for each of these programs' philosophies and methodologies (Cordiano et al., 2019), there is no universally accepted term or definition to describe the synthesis of nature into an educational context (Miller et al., 2021; Becker et al., 2017), creating a significant limitation within the available body of literature. According to MacQuarrie et al. (2015), the very meaning of nature itself is dependent on cultural and contextual factors, making a cross-cultural standardization impossible. This lack of communal terminology likewise presents the potential for limitations in replicating both programs and empirical studies to measure outcomes, creating further gaps in the available literature. However, the following terms in Table 2.4 are commonly seen within the current research and can be used to craft an operational definition for a study, depending on the articulated aims of the research:

Table 2.4

Common Terms and Definitions for Schools that Integrate Nature

Commonly Used Term	Definition or Meaning
<i>Environmental Education</i>	Nature-focused learning that, in elementary and middle schools in the United States often manifests as supplements to the main curriculum. In secondary schools settings, environmental education may be offered as an elective or not at all, considered ‘less important’ than other sciences (Ferreira et al., 2012; Hart, 2010). Palmer and Neal (1994, as cited in Jeronen et al., 2009) specifically state that according to the Finnish definition, environmental education specifically builds awareness, understanding and skills pertaining to nature conservation and sustainable development in a learning environment outside the typical classroom.
<i>Forest Kindergarten</i>	Also referred to as ‘Waldkindergartens’ or ‘Nature Kindergartens’ (Fritz et al., 2014), these are educational programs with limited or no indoor facilities in which the curriculum emerges from daily outdoor activities (Larimore, 2016)

<i>Forest School</i>	A mostly (if not entirely) outdoor-based program that is learner led with emphasis on play and engagement with the natural environment; due to their less structured or unstructured natures, Forest Schools are typically developed for younger learners, including early childhood (Cudworth & Lumber, 2021). Larimore (2016) adds that there is an additional goal for each student to develop a relationship with the particular environment over a period of multiple weeks, if not months. According to O’Brien (2009), a central aim of Forest School is to provide all participants (regardless of age) with regular opportunities to build confidence and self esteem through engagement with a woodland setting.
<i>Friluftsliv</i>	A Danish word translated into English as “fresh air life”; holds both pedagogical and political connotations as a result of the gradual emphasis placed on the outdoors for health, leisure and education (Cerino, 2023). This concept of nature inclusion into daily life is incorporated into curriculum, such as in physical education classes.
<i>I Ur Och Sku</i>	A Swedish phrase given to “Rain or Shine” nursery schools, based on Frohm’s Skogsmulle (Cree & McCree, 2012).

<i>Learning Outside the Classroom</i>	Learning which takes place in a non-traditional classroom space (Becker et al., 2017).
<i>Nature-Based Learning</i>	Learning facilitated by the natural environment, nature-based activities, and/or natural materials (Jordan & Chawla, 2019; Miller et al., 2021). Nature-based learning may be conducted on a continuum from informal to formal learning opportunities (Faber Taylor et al., 2022).
<i>Nature-Based Play</i>	Unstructured play within the natural environment using natural items (Haas & Ashman, 2014).
<i>Nature-Based Preschool</i>	A licensed program for 3–5-year-olds which features nature as a central organizing “thread” through the preschool’s philosophy, pedagogy, design, etc., that incorporates both best practices of early childhood education with environmental education and utilizes the natural world to support child development and the development of an ecological identity. Up to 50% of a child’s day might be spent outside learning (Larimore, 2016).

<i>Nature Pedagogy</i>	Learning and teaching, using nature inside or outside of the classroom (The International Association of Nature Pedagogy, 2016).
<i>Nature-Friendly Schools</i>	An ongoing project in the United Kingdom funded by the Department of Education, Department for Environment, Food and Rural Affairs, and Natural England that provides support for teachers in developing ‘greener’ outdoor classrooms and curriculum that allot students at least two hours outside weekly (Clark, 2022).
<i>Outdoor Adventure Education</i>	Teaching and/or learning and/or experiencing in an outdoor, possibly out of school environment (Becker et al., 2017).
<i>Udeskole</i>	A Danish word meaning “outdoor school”, udeskole refers to the practice of teachers regularly taking pupils aged 7-16 outside once or twice a week for curriculum-based learning opportunities in either natural or culturally appropriate settings (Bentsen & Søndergaard Jensen, 2012).

Pedagogy of Nature-Based Schools & Programs

While there are a multitude of culturally- and purpose-based definitions utilized to describe learning around nature, there are likewise a variety of ways in which each of the aforementioned terms might be transposed into actionable educational curricula, programs and activities. Boileau and Dabaja (2020) conducted a quantitative survey to assess the characteristics of Canadian Forest schools. Within their research was a litany of programs for all ages, including options for whole-family engagement; furthermore, they found program structures encompassed everything from full-time early childhood programs, to summer camps or afterschool programs, to programs operating as training facilities for current practitioners. Berg et al. (2021) states that, with a growing increase in interest regarding physical and environmental wellness, some national educational policies (such as those written in Canada) are beginning to specify that learning can take place anywhere, supporting outdoor initiatives. Additionally, theorists such as Kytä (2004) and Kellert (2005) have noted that children can have three different kinds of contact with nature: direct, indirect, and vicarious experiences, with varying levels of affordances depending on the environment. Thus, the actual learning that occurs within any given program is going to vary based on not only the aims of the specific nature-based program, but also the target population, curriculum goals (if any), setting in which the program takes place, and level of engagement or structure from adults (Becker et al., 2017).

According to Borsos et al. (2018), the philosopher Comenius proposed that nature is best studied in nature. However, for present-day programming, nature-based learning

may be broadly categorized into several varieties: nature elements incorporated into indoor learning experiences, a walk in a nature-based setting, a visit to a specific place, or an in-depth extended experience. Much of the available literature references similar educational theories when discussing the development of various nature-based learning. Cerino (2023) states that the work of Piaget, Montessori, Vygotsky and Steiner are frequently incorporated into the Danish Forest School approach. Barrable and Arvanitis (2019) identify the contributions of Froebel and Dewey to nature-based approaches while noting the importance of Self-Determination Theory (Deci et al., 2013), which states that individuals should be supported in ways that facilitate the expression of their internal selves and personal motivations to learn rather than be controlled through the use of external rules, rewards and punishments. Place theory is another widely referenced concept through the existing literature. Place theory is the notion that a person may develop and strengthen a personally symbolic meaning to a specific geographic location through direct experiences, which serves to facilitate and promote a sense of belonging (Davenport & Anderson, 2005). In a nature-centered education context, Harwood et al. (2022) suggests this concept of place theory lends itself to a paradigm shift towards an emergent, child-focused curriculum, instead of formal activities led by a teacher. The following program structures broadly describe multiple theoretical constructs, curriculum, and specific pedagogy.

Comprehensive Educational Programs

This category refers to wholly inclusive educational programs that are primarily focused on engaging with nature and include large periods of time spent outdoors, such

as full-day Forest Schools and their derivatives. Barrable and Arvanitis (2019) describes traditional pedagogy for traditional Forest Schools as emergent, self-determined and thus appropriate for all ages, which stands out in contrast to traditional educational systems featuring educator-determined learning objectives and curriculum. Furthermore, the authors specify that true Forest Schools are meant as a vehicle for curriculum and not a curriculum in and of itself. This principle may cause inherent tension if the selected curriculum and activities are at odds with the principles and ethos of Forest School. In other words, educators wishing to adopt a Forest School approach would need to choose to adopt a learning theory and curriculum that complements an emergent, self-determined learning style and select outdoor spaces that naturally lend themselves to the types of learning and inquiry they would like their students to engage in.

Supplementary or Standalone Educational Programs

This umbrella term refers to specific educational courses or programs that are separate from the general education curriculum (such as a special week-long outdoor day camp experience for 6th graders), *or* specific educational programs that are included in a course as supplementary to general education curriculum (such as a visit to a creek to look for tadpoles after learning about the lifecycle of a frog), wherein the learning is *reinforced* by the outdoor experience. Perhaps one of the best-known examples of a supplementary program would be Danish *udeskole*, which features weekly or biweekly “outdoor school” days for students in both natural and culturally relevant settings (Bentsen & Søndergaard Jensen, 2012). *Udeskole* operationalizes the philosophy that

learning and teaching occur within a specific social, political and geographical context, and that learning becomes both personalized and meaningful when it can occur within real-world experiences (Jordet, 2008). *Udeskole* or comparable experiences are theoretically meant to be aligned with school curriculum and carefully planned (Jordet, 2003). Similar experiences identified within the literature included a modified Forest School program focusing on behavior management (Cumming & Nash, 2015), and a program caring for chickens in a high needs urban elementary school aimed at supporting socioemotional learning (Gilligan and Downes, 2022).

Curriculum-Based Educational Activities

This category includes individual nature-based lessons or activities that are specifically tied to curriculum goals. Maller (2009) notes that nature-based activities may be structured or unstructured and subsequently provide different benefits. For instance, unstructured activities allow for students to develop a connection with nature, sense of place, and agency to investigate their world. Structured activities, meanwhile, may provide a meaningful learning experience, physical/kinesthetic movement, student empowerment, opportunities for multiple learning styles, and engagement within a specific place or identified community (Maller, 2009, p. 531). Some curriculum based activities identified within the literature include: a nature-based Writer's Workshop (Kinberg, 2020), nature-based mathematics lessons (Baker et al., 2021), and an Environmental Science, Technology, Engineering and Mathematics (ESTEM) K-12 science curriculum (Gupta et al., 2018).

Multipurpose/Multi-Use Educational Initiatives

This final term and curricular category refers to spaces or programs adjacent to the school that serve multiple purposes. For example, Corveleyn et al. (2020) describe the development, implementation and utility of a hydroponic garden system within their school. The authors note that this system is multifunctional, as that it serves for both informal and formal learning within the classroom, but the produce from both their hydroponic garden and school garden then supplements meals in the cafeteria weekly, allowing children to see and experience the full process of vegetable production. Dyg and Wistoft (2017) explored the Gardens for Bellies school garden program in Denmark and its potential impact on student wellbeing. Specifically, the researchers noted that the gardens served as sites for structured educational activities, as well as spaces to work on other curricular pursuits (for example, writing poetry while sitting in the garden), or unstructured play time. Ferreira et al. (2012) identified a similar program operating in Detroit, Michigan, and describe a partnership between a Detroit public school district, a local university and the nonprofit The Greening of Detroit to create multi-use school gardens.

Integration of Nature-Based Learning and School Counseling

Over the past several decades, there has been a shift within the education community to develop and implement a Whole Child approach to learning, with the objective of nurturing the academic, physical and socioemotional well-being of all

students (Lewallen et al., 2015). In response, the American Association of School Counselors (ASCA) has developed a national model based on three domains: academic, career and personal/social, with a comprehensive methodology to address management, delivery and accountability for school counselors (ASCA, 2012). Flom et al. (2011) state that nature can be infused into each of the four essential tasks of a school counselor: developmentally appropriate guidance curriculum, responsive counseling services, individual student planning and systemic support. Reese (2019) developed the concept of EcoWellness, which includes seven factors: physical access, sensory access, connection, protection, preservation, spirituality and community connectedness. Based on Wilson's (1984) *biophilia* hypothesis, Reese's EcoWellness model assists both school and community mental health counselors in accurately assessing a student or client's individual needs, and conceptualizing opportunities for nature-based intervention. Similar to nature-based education, counseling interventions may include options that are fully immersed in nature, such as therapy groups in outdoor settings; partially engaged in nature, such as individual walk and talk therapy on the school grounds, or use nature as a focus point, such as nature-based therapeutic journaling (Flom et al., 2011). Greenleaf and Reese (2024) suggest prospective school counselors conduct comprehensive needs assessments, seek administrative support and develop ongoing monitoring and evaluation systems to create programs tailored to school needs and demonstrate potential benefits to respective stakeholders.

Current Studies

Description of Finding Relevant Articles and the Elimination Process

To seek out articles appropriate to the scope of this literature review, I consulted the online databases at Oakland University. Specifically, I searched ERIC, PsychArticles and PsychInfo, utilizing the following search phrases: “K-8 nature-based schools”, “nature-based schools”, and “outdoor education AND nature school”. I narrowed the search years to 2009-2024 and specified that I was looking for primary and/or secondary education. In ERIC, I was able to specify all grades I wanted included (K-8); within the PsychArticles and PsychInfo databases, I was able to specify I was interested in Childhood (birth-12 years), Preschool Age (2-5 years), School Age (6-12 years), and Adolescence (13-17 years). Table 2.5 (below) describes the number of hits based on key phrases entered, along with the number of articles determined to be initially relevant to this literature review based on both the title of the article and the abstract provided.

Table 2.5

Database Search Results

Database	Key Phrase	Number of Hits	Number of Relevant Articles
ERIC	K-8 nature-based schools	1	1
	Nature-based	56	34

	schools		
	Outdoor education AND nature school	212	76
PsychArticles	K-8 nature-based schools	1	0
	Nature-based schools	15	4
	Outdoor education AND nature school	0	0
PsychInfo	K-8 nature-based schools	0	0
	Nature-based schools	45	11
	Outdoor education AND nature school	98	29
Totals		428	155

Each article was added to a master spreadsheet by author name, year of publication, title and abstract. Once all articles were added, and duplicate articles removed, each article

was reviewed a second time based on their abstracts to determine relevance for inclusion.

Articles had to adhere to the following guidelines:

1. A focus on children and adolescents between kindergarten and eighth grade; articles were included if the population studied included some students one or two years younger or older than the traditional ages for kindergarten (five years old) up to eighth grade (14 years old). Programs identified as “preschools” were included if there were children older than five years included in the sample.
2. The article had to describe or investigate a program or concept that was integrated into the school curriculum; programs that were a one-time event were not included.
3. The article had to describe a program or concept specific to school; for instance, summer programs or therapy services outside of the school day were not included.

Table 2.5 describes the number of articles by type. In total, 138 articles were identified as potentially relevant and worth a closer review based on the database search. 27 articles were quantitative in nature, while 50 were qualitative. 11 articles identified as mixed-methods studies. 13 articles were literature reviews. Finally, there were an additional 37 related articles; some were conceptual in nature, while others personal reflections or articles describing specific pedagogical or curriculum-based practices. This last category is identified as Conceptual/Miscellaneous articles in Table 2.6.

Table 2.6

Included Articles by Category

Quantitative Articles	Qualitative Articles	Mixed- Method Articles	Literature Reviews	Conceptual/Misc Articles
27	50	11	13	37
Total:				138

Discussion of Relevant Articles

The search for relevant literature yielded dozens of articles describing interactions between children and nature in educational settings. However, due to the wide variety of terms and programming, the articles likewise widely varied in terms of relatedness to the identified topic. The following section describes sample articles that are centered on pre-kindergarten-eighth grade students who regularly engage with nature-based learning, and the effects of their experiences on their socioemotional development.

Literature Reviews. The search for articles provided multiple systematic literature reviews across a variety of nature-based topics. Sella et al. (2023), Miller (2021), and Mann et al. (2021) specifically focused on nature-based education. Sella et al. (2023) sought to assess the psychological benefits for preschool-age children attending a forest preschool. The researchers identified 16 quantitative articles that met their criteria; eleven were quasi-experimental and five were cross-sectional in design. Outcomes assessed in

these studies included cognitive functioning, creativity, behavior and “other subjective outcomes” (Sella et al., 2023, p. 16), suggesting current research is investigating multiple potential benefits of nature-based education. This review concluded generally positive benefits across these identified domains, with the exception of cognitive functioning which was identified as having “controversial results” (Sella et al., 2019, p. 24). This review utilized the Joanna Briggs Institute (JBI) Critical Appraisal Checklist to assess each study for its rigor. Unfortunately, the general quality of the studies were found to be poor, with nine studies identified as having a “high” risk of bias, and the other seven a “moderate level” (Sella et al., 2023, p. 18). The second example literature review is by Miller et al. (2021). This article sought to review quantitative research aimed at assessing outcomes of nature-based learning for school aged children (ages 4-12). The researchers pared down their search to twenty articles, and appraised them using a modified McMaster Critical Review Form (Miller et al., 2021, p. 1118). One concern that was identified was the lack of common language surrounding nature-based education. The article notes over a dozen different terms to identify learning in the outdoors. The researchers note that this wide variance of language hinders the creation of research-based recommendations for change (Miller et al., 2021, p. 1121). Each article assessed a different nature-based intervention. While reviewing, the authors identified the lack of justification for sample size among the majority of the articles, limited discussion regarding the sample population, limited use of valid and reliable outcome measures, and concerns in relation to the use of appropriate statistical analyses (Miller et al., 2021, p. 1129). The final example literature review is by Becker et al. (2017), and seeks to review

the effects of regular classes occurring in an outdoor education setting through the domains of education, social health and physical health. This review included both quantitative and qualitative studies on children between 5-18, with regular classes conducted in a natural environment. The authors note that, after their selection process, thirteen articles met their search criteria (Becker et al., 2017, p. 490). These articles included nine case studies, three quasi-experimental designs, and one with a cross-sectional design. Data instruments included questionnaires, interviews, learning assessments, drawings, and accelerometry. Once again, these researchers identified the included studies as either ‘poor’ or ‘moderate’ in their ratings, due to poor descriptions, non-random sampling, insufficient descriptions of the math involved, etc.

Quantitative Articles. Three quantitative studies identified for in-depth examination were Harvey et al. (2020), Lanza et al. (2023) and Pircho et al. (2021). First, Harvey et al. (2020) investigated the effects of children participating in two distinct outdoor education programs; one was a Biodiversity Project, where students spent an hour a week outside for 21 weeks exploring their school grounds, and the other a one-time BioBlitz activity wherein children spent only one hour looking at species around their school grounds. The Biodiversity program was developed as an all-class in-school activity for elementary children, and as an afterschool program for children aged 11-18. The BioBlitz activity was an activity for both primary and secondary schools which sought to have children use an app to identify as much flora and fauna around them as possible within one hours’ time. During both of these activities, children and adolescents were asked to complete a KIDSCREEN-27 quality of life measure to assess for

subjective well-being, as well as a Positive and Negative Affective Scale for Children (PANAS-C), to assess for mood. 298 participants ages 6-18 were measured in total during the Biodiversity Project, and 105 participants ages 5-14 during the BioBlitz. Researchers identified that the surveys taken suggested a statistically significant improvement in mood after each activity was completed, as well as an increase in identification in biodiversity. This article lacks a discussion regarding strengths and limitations of the study design, as well as an acknowledgement of the ability to generalize the data to other populations. Based on this article, a reader cannot strongly conclude that spending an hour in nature leads to significant wellness outcomes for students.

Second, Lanza et al. (2023) sought to measure the relationship between a child's connection to nature and their socio-emotional learning (SEL) skills, such as self-awareness, self-management, social awareness, relationship skills and responsible decision-making. The study included 138 children between the ages of eight and ten from economically disadvantaged, majority Latino households with relatively low access to nature in Austin, Texas. Children attended one of three elementary schools, considered either 'low', 'medium' or 'high' in their green access for children. SEL skills were measured using a 10-item student climate survey administered annually by Austin Independent School district, which featured Likert-style items. The level of connection to nature was assessed via the Connection to Nature Index and Inclusion of Nature in Self scale. Assessments were analyzed utilizing ordinary least squares regression models, including the Shapiro-Wilk test and Spearman's rank-order correlation to determine the strength and direction of relationship between the two variables. The study found a weak-

to-moderate correlation between the SEL assessment and the two nature scales, but reported the positive association as possibly suggesting that connection with nature helps nurture the SEL skills of autonomy, competence and relatedness.. The researchers thought that their results may have been impacted by challenges in the participants fully understanding how to complete all assessments. This study self-identifies multiple limitations in its lack of generalizability, small sample size and use of assessments that may not be adequately reliable/valid, nor appropriately developed for children.

Finally, Pircho et al. (2021) sought to measure the effects of contact with nature on students' wellbeing, connectedness to nature and pro-sociality during an outdoor environmental education program. This quasi-experimental study consisted of two cohorts, the first with 154 participants, and the second with 170 participants. Both cohorts completed the 4-session outdoor education program while their control groups (253 participants and 168 participants, respectively) did not. Children were all between the ages of 9-11, and attended one of six schools. Participants completed surveys prior to and after the education program. Surveys were analyzed using both correlation analysis as well as a repeated measures ANOVA. The research team concluded that participation in the outdoor program was associated with higher levels of nature connectedness, psychosocial wellbeing and prosocial behavior, in addition to higher levels of pro-environmental attitudes. While this study offered information regarding the outdoor education program such that replication may be possible, this study lacks significant information regarding the validity and reliability of its assessment instrument. Furthermore, despite purporting to run the same outdoor education program, the

researchers note that the second program had a ‘somehow less salient focus’ on the relationship between humans and nature, which impacted the data (Pircho et al., 2021, p. 7).

Qualitative Articles. Three qualitative studies identified for review were Maller (2009), Harris (2021), and Gilligan and Downes (2022). First, Maller (2009) conducted a phenomenological study to assess educator perceptions regarding the benefits of contact with children for children’s mental, social and emotional health. To do so, she interviewed 30 teachers and principals from 11 primary schools in Melbourne, Australia over a period of six months. Major identified themes included student sense of achievement, self-confidence, self-esteem, acknowledgement of differentiated learning styles, sensory engagement, school engagement, care and nurturing skills, connectedness to others, freedom/creativity, and stress relief. However, this article lacks any significant detail regarding the types of programs the participants were referencing. Furthermore, the article lacks any substantive information regarding the author’s analysis process, or attempts to build credibility, transferability, dependability or confirmability within the study.

Second, Harris (2021) conducted a qualitative study before, during and after the implementation of a 12-month nature-based pilot program at six primary, one secondary and two “special” schools, all located within urban settings. The pilot program varied in the scope of implementation between schools in order to create further variety between schools for comparison purposes. The researcher notes using observational data, as well as meeting notes, focus groups and interviews to capture the thoughts of students,

teachers and intervention providers during the program, and then semi-structured interviews at the conclusion of the program. Harris (2021) employed a thematic analysis approach to assess the data collected. While a number of positive themes emerged, such as positive affect, strong engagement and excitement, participants likewise identified logistics, access to natural spaces, teacher support and trainings/resources as areas of concern. This study lacked a comprehensive discussion of the pilot program, such that replication would not be possible. Furthermore, this study lacked a discussion on attempts to build credibility, transferability, dependability or confirmability.

Finally, Gilligan and Downes (2021) utilized qualitative focus groups to explore the perceived impact of caring for hens as part of the school day on children's socioemotional wellness. The study included three focus groups of six children each between the ages of five and nine, many with a wide range of learning and emotional issues, such as Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), English as an Additional Language (EAL), and assorted emotional challenges. The children's teachers were also interviewed. Gilligan and Downes (2021) describe the care of the two chickens, which involved all children from both classes on a daily rotating schedule over a five week period and included feeding, watering, egg washing and selling. Major identified themes for this study included responsibility, relational empathy, cooperation, trust and connection, adaptive behavior, relaxation, empathy/respect for the natural world, motivation, planning, and learning strategies. While this study identifies future directions in research, such as studies including other animals or care processes, like the other studies mentioned, it fails to incorporate a

thorough discussion of data analysis or procedures to support credibility, transferability, dependability or confirmability.

Mixed-Method Articles. Two mixed-methods articles were of particular interest: Angostini et al. (2018) and McCree et al. (2018). Angostini et al. (2018) sought to investigate the effects of outdoor education (OE) on different aspects of child development, including cognition, social skills and physical development. The study took place over two years' time and reviewed an OE kindergarten as compared to a more traditional kindergarten, both located in Italy. The study sample included ninety three children between the ages of three and five, and 20 teachers; 13 of these teachers were from a traditional classroom background, and seven were from an OE kindergarten. Teachers were asked to complete the Kuno Beller Developmental Tables (Mantovani, 1995) four times over the two year period to describe student development, as well as complete a qualitative "Outdoor Activities/Trips Diary" each time they took their classes outside. A Mixed-Model Repeated Measures ANOVA was used to analyze changes in children's development across the timespan, considering both the gender of the child as well as the format of the child's schooling experience. Results suggested that the outdoor education teachers were significantly more positive than the traditional teachers' perceptions, but only at the first two time intervals. One significant limitation of the study was that the research team did not identify participants' developmental level prior to the start of the study in order to secure a baseline of measurement. Another limitation to the study was that teachers did not have equal access or 'buy-in' to their engagement with the outdoors; several had already been advocates for outdoor education for a number of

years, which may have impacted how they worked with the students and choices within their classroom. Another limitation seems to be that the two groups did not have equal access to the outdoors; the outdoor education group had a schoolyard, while the traditional kindergarten did not. As such, the type of activities and frequency of outdoor engagement may not have been comparable.

The second article by McCree et al. (2018) is identified as a longitudinal study that follows 11 children who are identified as having multiple social, behavioral and economic disadvantages through three years of weekly Forest school and outdoor learning sessions. Each child is between the ages of five-seven at the outset of the study. Each child was interviewed yearly, with two cases randomly selected for in-depth exploration. Each child's parents were interviewed utilizing semi-structured focus groups at the halfway point and conclusion of the study; however, the researchers noted that parents were 'hard to reach' for additional questionnaires. Questionnaires were distributed to children, parents and staff at the beginning and end of their experience. Furthermore, Leuven scales to identify student wellbeing and involvement were used each "session". The researchers likewise used the Connection to Nature Index at the end of the study. This data was reviewed utilizing a Grounded Theory approach, which the researchers purport allowed for triangulation, improved validity and reduced the potential for bias. The researchers noted the qualitative analysis themes changing from year to year, shifting towards a more student-led view with new perspectives and "whole school culture change". The researchers identified "self-regulation and resilience through emotional space" as a meta-theme; in other words, the children's Forest School

experience allowed them space and place for the children to be themselves and self-express, which contributes to greater self-regulation and resilience. However, the article fails to detail the structure of the particular Forest School, as well as any details regarding how the children attend (once per week, three times, etc.), nor is there any specific description provided of the childrens' environment or how the childrens' specific circumstances may influence their developmental trajectory while in Forest School. The quantitative portion is limited without any clear media describing changes in measures over time. The article concludes while lacking a section discussing potential limitations or any directions for future research.

Conceptual or Miscellaneous Articles. In addition to articles featuring formal quantitative and/or qualitative research, there are a litany of articles I would identify as conceptual or miscellaneous in nature. Articles under this broad umbrella category seem to fall within several themes: 1. narratives regarding the development of specific programs, 2. discussion of specific nature-based lessons or interventions within the classroom, 3. discussion of applying specific frameworks or theoretical concepts to nature-based learning, and 4. general discussion of nature-based schools and nature-based pedagogy. First, articles such as Ashmann (2018), Corveleyn et al. (2020), Elliott and Krusekopf (2017), and Sobel (2020) highlight narratives of the personal experiences of the authors in regards to developing and implementing nature-based interventions or programs. For example, Ashmann (2018) details the development and current implementation of a nature-based kindergarten program, with reflection on the program's progress and future development. The second subcategory of articles discussing nature-

based interventions is similar; the article is generally written in a narrative style with personal anecdotes regarding implementation. Baker et al. (2021) is a good example of this subcategory; the authors discuss how they have personally implemented nature within a third grade unit on multiplication. The third subcategory of articles is largely theoretical in nature; for example, Barrable and Arvanitis (2019) wrote a conceptual article offering a detailed description of Self-Determination Theory and its application as a framework to guide the creation of Forest Schools. Finally, my search found articles such as Cerino (2023), Larimore (2016) and Hunter-Doniger (2021) that offer a more general discussion of Forest School models and relevant pedagogy. While all of these articles are interesting contributions to the literature, none offer concrete research or original empirical evidence.

Conclusions. Thus, the following have been identified as concerns within the available literature:

1. While nature is culturally defined, and multiple terms utilized to accurately describe an activity or intervention, the use of multiple terms creates limitations in study replication, generalization and recommendations.
2. Current studies do not adequately account for the multitude of variation in nature-based learning opportunities.
3. The majority of studies regarding more immersive or comprehensive programs typically feature early childhood education students, with less empirical discussion afforded to upper elementary or secondary students.

4. Multiple studies do not identify their limitations, discuss attempts to support rigor within the research, or include significant biases or flaws in their assessments.
5. Current studies do not offer longitudinal data to adequately capture the potential impact or long-term effects of nature-based opportunities on students through their education and into their adult lives.

Purpose of the Current Study

The purpose of this qualitative phenomenological study will be to explore the perceptions and lived experiences of current students, parents, staff and alumni of K-8 schools that integrate nature and the perceived effect of this style of education on students' and alumnus' emotional wellness and ability to self-regulate through their lifespan.

CHAPTER THREE

METHODOLOGY

This chapter focuses on the theoretical and methodological frameworks used for this dissertation study. A restatement of the purpose and rationale for the study will be included to support clarity for the reader. The rationale for qualitative research will additionally be discussed. This chapter will include 1. a description of the researcher and their role, 2. study procedures, 3. data analysis procedures, and 4. steps taken to ensure the study's trustworthiness and credibility.

Purpose and Rationale for the Study

A significant body of research details the benefits of contact with nature for all ages, but especially children (Menardo et al., 2021). Incorporating nature-based curriculum and experiences into a child's school day appears to be a clear opportunity to access these benefits for children (Donison & Halsall, 2023). However, there are multiple flaws identified within the current research:

1. While nature is culturally defined, and multiple terms utilized to accurately describe an activity or intervention, the use of multiple terms creates limitations in study replication, generalization and recommendations.
2. Current studies do not adequately account for the multitude of variation in nature-based learning opportunities.

3. The majority of studies regarding more immersive or comprehensive programs typically feature early childhood education students, with less empirical discussion afforded to upper elementary or secondary students.
4. Multiple studies do not identify their limitations, discuss attempts to support rigor within the research, or include significant biases or flaws in their assessments.
5. Current studies do not offer longitudinal data to adequately capture the potential impact or long-term effects of nature-based opportunities on students through their education and into their adult lives.

Therefore, the purpose of this qualitative phenomenological study will be to explore the perceptions and lived experiences of current students, parents, staff and alumni of K-8 schools that integrate nature and the perceived effect of this style of education on students' and alumnus' emotional wellness and ability to self-regulate through the lifespan. A qualitative design was selected in order to explore this culturally-specific phenomenon in further depth and detail prior to seeking quantitative data. For the purposes of this investigation, the term 'nature-based school' is used herein to describe school systems that purposefully integrate the surrounding environment into their instruction and incorporate regularly extended outdoor time (more than 30 minutes) for students daily.

Researcher Description and Reflexivity Statement

Qualitative research is, in essence, interpretive in nature; it seeks to collect a variety of audio, written and/or visual media from participants which is then

systematically analyzed by a researcher or team of researchers to extrapolate meanings (Heppner & Heppner, 2004). Therefore, the multicultural identities and biases of the researcher(s) are of significance, as the researcher is considered the primary assessment instrument (Creswell & Creswell, 2018). The research team needs to be aware of how their identities and biases may shape the development of the study and interpretations of the data, while readers need to be mindful of the ways in which researcher identities, interests and biases may affect the results and therefore limitations of the study.

The potential for such influences is even higher with a research team of one, as is the case for this dissertation. Thus, it is important for the reader to understand my relevant personal and professional identities, along with potential biases. I identify as a White cisgender female, with professional training, applicable licensing and careers in K-12 education, clinical mental health counseling and school counseling for the state of Michigan. I recognize that my personal identities have allowed me unique privileges and perspectives regarding the intersection of mental health, education and the natural world. I have maintained a lifelong interest in nature and its inhabitants, enjoying the company of animals and being outdoors. I began my journey working with children and teens at a summer day camp on a farm when I was fourteen and continued that position through my undergraduate studies. I presently maintain my affiliation with that farm as my own children begin attending summer camp. I have previously taught Spanish at a nature-based school and then later in a public school district. The comparisons noted between my personal experiences in both teaching assignments fueled my curiosity to understand the intentional choice to include nature within the school day beyond a traditional recess.

I am currently employed as a therapist in private practice, with training and interest in holistic wellness modalities including animal-assisted therapy and ecotherapy. As a doctoral candidate, my personal curiosities are now the subject of this study and general line of inquiry, as my experiences lead me to believe there may be significant mental wellness benefits to integrating nature within both teaching and therapy.

Research Philosophy

All research is conducted by humans, who create studies which inevitably incorporate their philosophical worldviews, or *ontology*; it is this set of beliefs that ultimately guides action (Guba, 1990). Therefore, understanding a researcher's individual philosophy adds richness to the review of their given study. Creswell and Creswell (2018) identify four such worldviews: postpositivism, constructivism, transformative worldview and pragmatism. Of the four worldviews identified, I believe I most closely align with a blend of social constructivism and pragmatism. A social constructivist worldview seeks to gather input from as many participants as possible to triangulate meaning and generate theory from varied perspectives (Creswell & Creswell, 2018). Additionally, due to my personal and professional background, I am always thinking about my research in terms of sociopolitical contexts and how what I learn may be applied to current social issues and policies. A pragmatic worldview, meanwhile, seeks to implement both quantitative and qualitative research approaches based on the needs of a particular study; in other words, doing "what works best" to address the research question at hand (Creswell & Creswell, 2018). Furthermore, pragmatic researchers acknowledge

research is culturally bound and therefore reflective of social justice or political concerns, which likewise complements social constructivism.

Description of Research Paradigm and Design

A researcher or research team's ontological standings will inform a study's particular research paradigm and overall design. In this case, based on my own worldview and research focus, a phenomenological approach was selected. Phenomenological design focuses on the collection of experiences garnered from participants with the intention to capture the "essence" of an identified phenomenon, with a particular emphasis on gaining understanding through thorough, rich descriptions (Creswell, 2007). Specifically, this study will utilize the descriptive method of transcendental phenomenology, which aims to describe and interpret experiences with as minimal researcher influence and bias as possible, as if the phenomenon was being discovered and understood "...freshly, as if for the first time" (Eddles-Hirsch, 2015; Moustakas, 1994, p. 34). While a grounded theory methodology was considered for this study (Creswell & Creswell, 2018), it was ultimately not selected at this time due to first seeking to understand the lived experiences from participants rather than develop a specific theory regarding their experiences. Additionally, based on the limitations identified in Chapter Two of this dissertation, there is interest in understanding the lived experiences of both students and alumni of nature-based school across the lifespan prior to developing a theory about what they are experiencing. As this study seeks to

understand a microculture (McCurdy et al., 2005), an ethnographic approach was also considered yet ultimately rejected due to time constraints.

Proposed Research Questions

Based on the sum of my research presented within the Literature Review (Chapter Two) of this dissertation, my overarching research question is as follows:

What are the lived experiences of K-8 students, alumni, staff and stakeholders in nature-based nontraditional schools?

More specifically, the individual questions embedded in my data collection sources seek to better understand the following concepts:

1. The lived experiences of participants at the identified nature-based school
2. Student, parent, staff and alumni perception of current and former students' abilities to self-regulate in multiple contexts
3. Observations of nature-based education with regards to self-regulation and wellness

Please see Appendices D and E for specific research questions embedded in each data collection method. It is important to note that this study seeks to expand on the original

research collected within the pilot study, which focused on the perceptions of professional staff members at nature-based schools utilizing the same interview protocol for current and former professional staff members. Due to the protocols for staff remaining the same, data collected from the pilot study in 2023 is included within the data for this study and the implications of its inclusion is discussed within Chapters 4 and 5.

Participants:

Studies are designed to explore specific populations of people, either as individuals or as a collective group (Creswell & Guetterman, 2019). In addition to creating standards to refine the possible candidate pool for the current project, identifying ideal participants allows the researcher to consider trends and possible limitations within the study as well as readers to better understand the study itself and how the findings may or may not apply to other individuals or groups. Therefore, the following section addresses details regarding the participants I sought out to engage in my study.

Selection and Selection Procedures:

For the purposes of convenience and accessibility, I requested to conduct this study with a local nature-based school in Southeast Michigan with whom I have connections and had previously engaged with for a pilot study. I contacted the director of the school via email and in two follow-up phone meetings to secure a partnership and

discuss the proposed details of the study. Participants were identified through a combination of convenience and purposive sampling known as snowball sampling via both email (please see Appendix B). I contacted my own acquaintances who met criteria via social media, with the request that they forward the recruitment email to other adults who meet criteria and may be interested. In partnership with the school, the school administration sent a general email to current parents using the school's contact system, and another general email to any alumni email addresses the school has maintained on file for the purposes of outreach and continued community connection. Additional participants self-identified and/or provided consent for their students to participate as they saw me on campus and inquired about my presence and work.

Identified Characteristics of Participants:

I sought to find and engage participants who met one or more of the following criteria:

1. Current students at the nature-based school
2. Parents of current students or alumni at the nature-based school
3. Alumni of the nature-based school
4. Current or former professional staff, such as teachers, directors, etc.

While the exact number of participants required is unknown prior to conducting research, Ahmed (2025) suggests phenomenological studies required between 5-25 participants, ideally incorporating a variety of perspectives from both students, alumni, parents and faculty. However, it was acknowledged that individual populations may be unincluded from the study if it becomes too difficult to find participants from a particular category. The study continued based on the available participants until saturation was achieved. Charmaz (2006) defines *saturation* as the point at which fresh data no longer sparks new analytical insights or reveals new elements. While several types of saturation exist, this study focused on *data saturation*, which is identified as the point at which no new patterns or categories emerge during analysis (Rahimi & Khatooni, 2024), as well as *code saturation*, which refers to the point at which no new codes are required to fully describe the data (Hennick & Kaiser, 2022). At the point saturation was determined in my study, I had collected data from multiple participants in each category (please see table 3.1).

Table 3.1

Participant Identification

<i>Participant Criteria</i>	<i>Number of Participants</i>
Current students at the nature-based school	30

Parents of current students or alumni at the nature-based school	9
Alumni of the nature-based school	6
Current or former professional staff, such as teachers, directors, etc.	7
Participants who hold multiple primary identifications for criteria	9
Total Number of Participants	42

The following tables (3.2 and 3.3) share specific demographic data pertaining to both current students and alumni/adult participants.

Table 3.2

Student Participant Demographics

Demographic Categories	Participant Identification
Total Number of Participants	30 Students

Identified Genders	Male- 15 Students Female- 15 Students
Identified Ages	5-6 years old – 3 students 7-8 years old – 5 students 9-10 years old- 11 students 11-13 years old-11 students
Identified Race/Ethnicity	White-26 Black or African American-2 Middle Eastern/North African- 2

My research collection sought to gain perspectives from all ages within the school for the purposes of developmental comparisons of lived experience. While the study includes observational data from every group in the school, school staff collaborated with the researcher to determine that the youngest students (4/5 years old) would be exempt from participation in individual interviews due to developmental appropriateness and likelihood of meaningful data. Therefore, the student sample for individual interviews includes participants from each of the other six groups, while the youngest group was only observed.

Table 3.3*Alumni/Adult Participant Demographics*

Demographic Categories	Participant Identification
Total Number of Participants	12 participants
Identified Genders	Male- 6 participants Female- 6 participants
Identified Ages	14-18 years- 1 participant 18-29 years- 1 participant 30-39 years-n/a 40-49 years- 2 participants 50-59 years- 5 participants 60-69 years- n/a 70-79 years- 1 participant 80-89 years- 1 participant

Identified Race/Ethnicity	White-11 participants Asian- 1 participant
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The original pilot study conducted in 2023 focused on the perceptions of the staff of nature-based schools. It is important to note that two of the adult participants engaged in the pilot study *only*, whereas every other participant engaged in either both the pilot and the current study, or the current study.

Procedures

The Researcher's Role

Creswell and Creswell (2018) identify the researcher as a primary instrument in a qualitative study. This suggests that the researcher must continue an active role throughout the course of the research, as they develop the topic to be studied, as well as create the study's design and interpret its results through comprehensive data analysis (Sanjari et al., 2014; Golafshani, 2003). During the study, I identified the topic to be studied, developed an appropriate primary research question, designed the study, developed survey and interview protocols, operated as both the primary interviewer for surveys and interviews, as well as functioned as an observer during field experiences. After data was sufficiently collected and saturation achieved, I additionally served as the data analyst for the study. Due to my personal connection with the topic, it was

imperative to remain aware of my own thoughts, feelings and biases during the study and separate these from the research by utilizing reflective journaling both during the data collection and analysis process.

Data Sources and Collection Methods

After receiving appropriate signed consent forms from participants, data for this study was collected using the following methods:

1. Online Surveys – Surveys were via email to parents and alumni via Qualtrics software. These surveys included an open-ended questionnaire, as well as items that allowed the survey participant to accept or decline the opportunity to participate in an individual interview and/or focus group. These surveys additionally included questions that included demographic information and a way for families to identify if they were willing to let their minor children participate in the study, if the children are also willing to do so. Families were additionally allowed to bypass completing an online survey and provide consent forms for their children to participate in individual interviews during the school day via an email sent by the school administration. The names of these families and their identified student(s) were provided by the school administration via a Google Sheet accessible to only the researcher and administration.

2. Individual Interviews – Individual interviews were offered to any willing participant, with parental consent required for minors as appropriate and relevant. Interviews for older children and adults were conducted in a semi-structured format to allow for additional questions or exploration into topics that may not have been previously considered by the researcher. Interviews with young children under the age of 10 employed a Mosaic Approach (Tan, 2019) which flexibly allows children a combination of speaking, drawing, role plays and/or photography in order to communicate their thoughts, as is developmentally appropriate. Individual interviews for students were conducted during the school day, scheduled in collaboration with the child's teacher so as to minimize disruption to learning. Adult interviews were conducted both during the school day, as well as on evenings/weekends as convenient to the participant.

3. Focus Groups – Focus groups were offered as an alternative or addition to Individual Interviews, with parental consent required for minors as appropriate and relevant. Focus groups were also designed to follow a semi-structured format. A focus group was ultimately only conducted during the pilot study.

4. Observations – Naturalistic observations were conducted onsite at the school with the intention of further understanding the current lived experience of students and staff, in both the form of handwritten notes and photographs of

the school that did not include any people. Observations were scheduled and approved by the current school administration on four separate dates in both October and November 2025. The administration sent an email blast out to families letting them know observations were taking place, with the option to identify if they did *not* want their child(ren) observed. Additionally, teaching staff each signed individual consent forms to allow the researcher to observe their class(es), and scheduled observations based on their convenience and availability. Photographs were collected during observation days at times when staff and students were not occupying the identified spaces.

Collection Procedures & Ethical Considerations

The following data collection procedures were used during this study:

1. Online Surveys conducted via Qualtrics software (please see Appendix B). Qualtrics can be configured so as to be HIPAA-compliant and therefore confidential.
2. Individual Interviews and Focus Groups were held online via the HIPAA-compliant Zoom platform offered by Oakland University or live in person at a convenient location with audio recording (please see Appendix C and D). Any participants who wished to engage in a group received additional consent forms outlining procedures and expectations for participating in a group

format to support confidentiality. For students, interviews were conducted during the school day and the format (semi-structured interview, drawing, child-led photography, etc.) pre-approved with appropriate consent forms by the child, child's parent/guardian and teacher. While the nature of the semi-structured interview questions were not intended to invoke a strong emotional response or distress, appropriate time was made within interviews and focus groups for the researcher to assist in the processing of any emotional reactions arising from the content.

3. Observations were conducted during school hours and recorded via continuous written recording within the researcher's notebook. The researcher engaged in overt, naturalistic participant observation, with the intention to capture moments, events and interpersonal interactions within the school setting that aid in research. The written observations were transcribed digitally via a Microsoft Excel document, and the initial paper notes shredded to maintain confidentiality.

All digital data collection methods, including survey outcomes, audio files, video files and written transcriptions were saved in files via cloud storage, and only accessible through the researcher's personal computer which has firewall protections and requires multiple step authorization (passwords and passkeys) to use. Participant names and consent documents were housed in a separate digital folder than the data. All participant data was saved using a participant code name, rather than their full legal names to protect

participant confidentiality. Any paper documentation containing notes or participant-created information were copied over into a digital file format to be placed in a folder on the researcher's secure computer, with the original destroyed. All data will be destroyed upon completion of the investigation and dissertation process.

Data Analysis Procedures

A transcendental phenomenological approach to research includes specific steps: bracketing reactions during data collection, horizontalization, clustering into meaning making, developing themes, and synthesis of the identified themes (Moustakas, 1995). Throughout the data collection process, I engaged in bracketing via reflective journaling. Once data was collected and transcribed onto my computer, data was analyzed using content analysis and constant comparison methods in the horizontalization process. Content analysis refers to the process of 'breaking down' data into conceptual 'chunks' which are then coded. The two types of content analysis are *conceptual*, which allows the researcher to make inferences based on the coding, and *relational*, which involves the researcher to make additional inferences regarding the relationships between emergent themes (Wilson, 2016). To support the reliability and trustworthiness of the study, conceptual content analysis was implemented. Individual transcripts were broken down into single sentences, then conceptual phrases, then individual codes, creating a list of codes to correspond with each interview or observation. This list of codes was shared with adult interviewees in a process called *member checking*, to strengthen the *confirmability* and *transferability* of the study (Lincoln & Guba, 1985). The choice was

made to refrain from asking students to engage in member-checking due to concerns regarding conceptual understanding of the abstract task. *Constant comparison* is an analysis method that refers to comparing specific datum within and between documents (Glaser & Strauss, 1967), which then allows for grouping, categorizing and theming. These codes were cross-compared among lists of other interviews and observations among participants with similar identification (students, alumni, parents and/or staff), and later as one set of data, with repeated codes noted. This process allowed for an analysis between age/identity with the intention of noting potential changes in perception due to age/identity while also allowing for identification of important categories and themes relevant to this microculture. As one data set, similar codes will be grouped to define categories, and categories compared to derive major themes. To aid in the process of analysis, a combination of Microsoft Excel spreadsheets was used. Peer debriefing, as well as ongoing bracketing of the researcher's thoughts and perspectives assisted in identifying and limiting potential biases, thereby strengthening the *transferability* and *confirmability* of the study (Lincoln & Guba, 1985).

Trustworthiness

Trustworthiness refers to the researcher's attempts to make the research both qualitatively valid via specific regimented procedures and reliable across multiple researchers and/or projects (Cresswell & Creswell, 2018). According to Lincoln and Guba (1985), the four primary ways to establish trustworthiness within qualitative research are: credibility, transferability, dependability and confirmability.

Credibility

Credibility speaks to the degree to which research findings align with reality (Stahl & King, 2020). Some such ways to develop credibility are prolonged engagement, triangulation, peer debriefing, persistent observation, negative case analysis and member checking (Lincoln & Guba, 1985). For this study, prolonged engagement, triangulation, peer-debriefing and member-checking were utilized. The research process took place over a span of three months' time, which allowed for repeated visits and engagement with various staff and students. The study sought multiple data collection formats across a spectrum of individuals in order to improve the triangulation of the study. All data collected from adult participants was sent back to the individuals for member-checking; three participants responded to confirm and approve their data. Finally, a de-identified version of the data was sent to two of the researcher's colleagues familiar with qualitative research to review.

Transferability

Transferability references the ability to shift and apply findings from one study sample to another population. According to Stahl & King (2020), transferability is only possible when the researcher has provided a description of the phenomenon that is 'thick' enough for a reader to understand the context and circumstances. In other words, a 'thick' description goes beyond what is observed or stated to identify the meanings and values that the phenomenon holds for participants. In order to increase transferability, while

conducting research through surveys and interviews I asked follow-up questions to assist in participants identifying their own meaning and values. A participant's ability to verbalize their meaning and values may be contingent on age and developmental capacity; hence, I gathered input from a wide age pool. I kept detailed notes, including as many contextual notes and bracketing regarding my own thinking and biases as possible both during the data collection and analysis process. Furthermore, I utilized member-checking to validate the accuracy of my understanding of context and meaning.

Dependability

According to Creswell (1998), dependability refers to the consistency of data over time and across researchers. In order to support dependability, I requested the assistance of two colleagues familiar with qualitative research to serve in the role of peer debriefers and outside auditors to review de-identified notes and data as analysis was completed.

Confirmability

Finally, according to Stahl & King (2020), confirmability pertains to getting as close to objectively accurate information about a phenomenon as possible. Confirmability may be supported through reflexive methodology, triangulation and reflexivity. This study employed all three methods to support confirmability.

CHAPTER FOUR

RESULTS

This chapter provides an in-depth review of the results of my dissertation study. First, I will review the processes by which I developed codes, categories and themes based on the collected data. Pseudonyms based on flora and fauna native to the school were given to all participants in order to provide anonymity and used throughout this chapter. Participant thoughts, views and experiences will be provided in the form of direct quotes. For the purposes of clarity, some identified quotes may be amended to remove filler words, such as “uhm” or “like”, and include additional words or phrases added by the researcher for clarification via the use of square brackets.

The Coding Process

In total, the data collection period lasted approximately three months’ time. As mentioned, transcendental phenomenology requires the following processes: bracketing reactions during data collection, horizontalization, clustering into meaning making, developing themes, and synthesis of the identified themes (Moustakas, 1995). During observations, immediately after individual interviews, and throughout the coding process I engaged in bracketing personal reactions in both my notebook and Excel sheets, with the intention of identifying potential biases and engaging in reflective critical thinking regarding the information I observed or heard. The second step within the process is horizontalization (Moustakas, 1995). After each observation, photo, survey or interview

was completed, I transcribed the data verbatim before proceeding to break each statement or text chunk into sample meaning units, and then further into individual codes. An excerpt could have multiple codes, depending on the length of the excerpt and the intended meanings interpreted therein. Table 4.1 provides examples of this process below.

Table 4.1

Sample Coding Process

Sample Excerpt	Sample Meaning Unit	Sample Codes
Instructors modeled their thinking aloud for students regarding getting ready for music class, including what to wear outside to get to the theatre for class	Teacher-led modeling of self-regulatory behaviors	1. Teacher-led modeling 2. Self-regulation via appropriate dress
The instructor mentioned meditation/calming strategies to address self-regulation in the event	Explicit instruction and reminder of self-regulatory strategies	1. Mindfulness strategies 2. Whole-group instruction

students were experiencing high levels of stress on the upcoming test.		
And it was super attractive, you know, because I knew that a child who would otherwise be identified as being ADHD could be sitting in a classroom here next to a friend who would not sort of require, in a different environment, any kind of identification, and they were both just kids at a school. And that's what I'd kind of been looking for, and really what drew me here.	Description of personal attraction to this nature-based school	1. Professional journey 2. Inclusive education 3. Equitable education approach 4. Attraction to school
So if we are going to show the universe down to scale,	Example of demonstrating a learning concept in nature	1. Integration of nature into

we are not doing it in here, we're going to [name's] field with 9 balls, right, a sun and 8 planets. Pluto out there on the end and then we're out in nature, but we're doing this work.		academics
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In total, 2,149 individual codes were identified, and given equal weight per the prescribed horizontalization process (Eddles-Hirsch, 2015). Once each individual survey, photo, observation or interview was completed, I utilized the process of constant comparative analysis (Glaser & Strauss, 1967) between each data set to identify similarities and differences between codes, as well as further my reflexive journaling regarding potential meanings and implications of all the data collected thus far. In particular, I was interested in the comparisons between individual groups (this school is divided into groups, rather than classes), as I hoped to gather how nature was integrated into the school day based on each group and the potential effects this integration has on students as they progress through the program. I was additionally interested in comparisons between student experiences and adult experiences of the school, as I was curious to know if the identified key benefits of the school's structure developed and implemented by staff were felt and lived by the students. Once all codes were created, I color-coded them by data source and added them to a master list, wherein I removed redundant codes while notating the

number of times each code had been identified. Removing redundancies created a list of 1,125 unique codes, which were then ready for categorization.

Identification of Categories

The next step within the data analysis process was to sort individual codes into unique categories, from which then major themes could be derived. As I worked on processing the data and creating individual codes, I began to form specific additional questions regarding individual choices and processes, which were included in my reflexive journaling process. While my overarching research question sought to understand the lived experiences of students, alumni, parents and professionals in a K-8 nature-based school, I began to mentally categorize different aspects of a professional teaching and learning experience based on my own personal experiences (for instance, classroom management, school organization/philosophy, curriculum development, etc.), as well as apply the information found within my literature review to the codes collected in order to create an organizational system. In looking at my codes and reflexive journaling entries, it appears I developed several specific sub-questions to complement my main research question. These sub-questions appeared in some of the follow-up conversation recorded within the semi-structured interview protocols:

1. Were there any overlapping or defining characteristics of my professional participants? In other words, were certain types of people drawn to a nature-based school?

2. How did the physical and organizational structures of nature-based schools compare to traditional models? How did they intentionally incorporate nature?
3. How were curriculum chosen and developed, and what roles did nature play in intentional learning experiences?
4. What effects did teachers personally notice that nature integration had on children, whether positive or negative?
5. How did staff and students perceive self-regulatory behaviors to emerge and develop throughout the duration of the school program?

Once I had all my master code list completed, I returned to the list to divide the codes up into cohesive categories. In total, I generated fourteen categories, as described in Table 4.2.

Table 4.2

Identified Categories Based on Codes

Identified Categories Based on Codes	Sample Codes in the Category
Child & Adolescent Development	● Adolescent priorities shift

	● Experiences as a student ● Shifts in play
Tradition/Ongoing Connection to School	● Ancestral connection ● Connection to former staff ● Feeling of belonging
School Philosophy & Mission	● Belief in school paradigm ● Children as central purpose ● Defend and nurture innocence
Resiliency & Self-Regulation	● Ability to self-regulate ● Anti-fragility ● Extending comfort zone
Journeys	● Describing career ● Background in counseling ● Parent as teacher
School Environment & Elements	● Age-based outdoor time ● Performing arts space ● Student-centered classroom design
School Community & Culture	● Collaborative culture

	● Community development ● Empowerment
Comparisons to Former and/or ‘Typical’ Schools & Educational Experiences	● Alignment of personal values with education ● Comparing schools ● Cultural differences
Integration of Nature & Academics	● Conceptual understandings to facilitate learning ● Experiential learning ● Incorporation of nature into academics
Academic Learning & Assessment	● Child-led learning ● Creative play ● Curriculum design
Socioemotional Development & Whole-Person Development	● Acceptance of limitations ● Collective conflict resolution ● Mindfulness practices
Perceived Benefits and Connection to Incorporation of Nature at School and Home	● Environmental stewardship ● Loose parts play ● Nature as grounding experience

Perceived Detriments to Integration of Nature	● Drawback of going outside ● Identification of allergies ● Perceived negatives to outdoor play
Communication Notations	● Identified limitations ● Identified example ● Expressing beliefs

Thirteen of these categories encompass content derived from the data collection. The last category, *Communication Notations*, was reserved for coding that captured the additional side comments or self-expression that participants made during the semi-structured interview process. Generally speaking, if I felt a code fit into more than one category, I placed it into the category I thought was the best fit and then created a comment notation to record my thinking regarding the connection to the additional category. Once the categories were created, I was able to engage in further reflexive journaling to sort these categories into major themes.

Identification of Major Themes

According to Moustakas (1995), the last step in the transcendental phenomenological data process is to develop and synthesize key themes based on the information collected, and then organize the themes into general clusters. From the

fourteen categories identified, six major themes were developed, which can be loosely grouped into two clusters: school culture and the perceived effects of nature integration on whole person development. These themes, presented in the form of statements, are outlined in Table 4.3, while table 4.4 organizes these themes into clusters.

Table 4.3

Identified Themes of the Study and Their Descriptions Derived From Categories

Identified Themes of the Study Derived from Categories	Description of Theme
Nature is a unifying thread.	<i>Nature integration is a thread uniting school mission, structure, staff, students and community.</i>
This school attracts and retains a strong teaching and learning community with similar values.	<i>Staff are drawn to the school by community ties, personal values, personal ways of being and educational interests for their own children. Furthermore, alumni, families of alumni and former staff appear to maintain strong ongoing ties with the school community.</i>

Time in nature facilitates awareness and self-regulation.	<i>In addition to ecological awareness, extended time in nature allows ample opportunity to develop awareness of self and others, thereby supporting self-regulatory behaviors.</i>
Time in nature supports a wide range of skill development.	<i>Nature allows for development of self regulation, understanding of self and resiliency, which fuels development of interpersonal relationships and academic skills.</i>
This school's culture promotes protective factors and resiliency.	<i>This school's structures, policies and procedures allow for enhanced interpersonal connections, ongoing mentorship and community connections which further support whole-person development, individualized academic development, continuation of traditions and alumni engagement, thereby increasing individual protective factors and resiliency.</i>

Widespread implementation of such a school model would require a major paradigm shift in education.	<i>There appears to be a collective belief that the benefits of nature integration into student learning and this school's educational model far outweigh potential drawbacks but widespread implementation of such a model would require a significant shift in public or 'typical' education systems.</i>
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Table 4.4

Themes Organized by Clusters

Cluster	Themes Within the Cluster
School Culture	• Nature is a unifying thread. • This school attracts and retains a strong teaching and learning community with similar values. • This school's culture promotes protective factors and resiliency. • Widespread implementation of such a school model would require

	a major paradigm shift in education.
The Perceived Effects of Nature Integration on Whole Person Development	• Time in nature facilitates awareness and self-regulation. • Time in nature supports a wide range of skill development.

As the data is viewed from a broader lens in creation of themes and clusters, it is important to note that multiple categories overlap and synthesize together to support a singular theme. Examples of such overlap may be found in Table 4.5.

Table 4.5

Sample Category Synthesis Within Themes

Identified Theme	Synthesized Categories that Support the Theme
<i>Nature is a unifying thread.</i>	• School Philosophy & Mission • School Environment & Elements • School Community & Culture • Tradition/Ongoing Connection to School

	● Journeys ● Academic Learning & Assessment ● Socioemotional Development & Whole Person Development ● Perceived Benefits and Connection to the Incorporation of Nature at School and Home
<i>This school attracts and retains a strong teaching and learning community with similar values.</i>	● School Philosophy & Mission ● School Environment & Elements ● School Community & Culture ● Tradition/Ongoing Connection to School ● Comparisons to Former and/or 'Typical' Schools & Educational Experiences ● Journeys ● Academic Learning & Assessment ● Socioemotional Development & Whole Person Development ● Perceived Benefits and Connection to the Incorporation of Nature at

	School and Home
<i>Time in nature facilitates awareness and self-regulation.</i>	● Child & Adolescent Development ● School Philosophy & Mission ● Resiliency & Self-Regulation ● School Environment & Elements ● School Community & Culture ● Academic Learning & Nature Integration ● Socioemotional Development & Whole Person Development ● Perceived Benefits and Connection to Incorporation of Nature at School and Home ● Perceived Detriments to Nature Integration
<i>Time in nature supports a wide range of skill development.</i>	● Child & Adolescent Development ● School Philosophy & Mission ● Resiliency & Self-Regulation ● School Environment & Elements ● School Community & Culture ● Academic Learning & Nature

	Integration ● Academic Learning & Assessment ● Socioemotional Development & Whole Person Development ● Perceived Benefits and Connection to Incorporation of Nature at School and Home ● Perceived Detriments to Nature Integration
<i>This school's culture promotes protective factors and resiliency.</i>	● Child & Adolescent Development ● School Philosophy & Mission ● Tradition & Ongoing Connection ● Resiliency & Self-Regulation ● School Environment & Elements ● School Community & Culture ● Academic Learning & Nature Integration ● Academic Learning & Assessment ● Socioemotional Development & Whole Person Development ● Perceived Benefits and Connection

	to Incorporation of Nature at School and Home
<i>Widespread implementation of such a school model would require a major paradigm shift in education.</i>	● School Philosophy & Mission ● Resiliency & Self-Regulation ● Journeys ● School Environment & Elements ● School Community & Culture ● Comparisons to Former and/or ‘Typical’ Schools & Educational Experiences ● Academic & Nature Integration ● Academic Learning & Assessment ● Socioemotional Development & Whole-Person Development ● Perceived Benefits and Connection to Incorporation of Nature at School and Home ● Perceived Detriments to Nature Integration

As noted in Table 4.4, the multiple overlaps between categories serve to highlight the complexity of the topic and the interrelatedness of the concepts being studied. An in-depth discussion of each of these themes, supported by participant excerpts, researcher-

created descriptions of photographs and reflections of researcher observation, is featured in the following section. The specific photographs collected and referenced may be found within Appendix F. Additionally, the following section includes researcher-derived propositions about relationships presented within the data. As previously mentioned, all participants will be referenced using pseudonyms based on the local flora and fauna of the region in order to protect confidentiality. Discussion of materials available to the public, such as websites, will remain without citation to likewise support confidentiality.

Review of Major Themes via Excerpts and Propositions About Relationships

Theme One: Nature is a Unifying Thread

Nature integration is a thread uniting school mission, structure, staff, students and community.

Yeah, that's actually a really beautiful way to put it, and because we are such a unique setting, you know, people are like, well, what is [this school]? Is it [another nature-based school]? Is it Montessori? You know, is it Waldorf? And it's, like, you know, there's touches of Waldorf, there's touches of Montessori, but it's truly our own space and place, and I think the fact that nature is our greatest teacher is what draws you in. (*Black Eyed Susan*)

The nature-based school featured within this study was founded in 1971 as an independent educational option for preschool-eighth grade students focused on discovering and respecting the uniqueness and individual gifts of every child. It is tucked well away from the main road on twelve acres of forest, neighbored by farmland, the school-owned Ecological Awareness Center (EAC) and a state recreation park, sitting squarely in the middle of largely untouched forests and meadows. The school itself is composed of a main building, which features space for seven classrooms visually divided into a lower and upper school, in addition to a central gathering room (“the Big Room”), an office, a library, a small kitchen and restrooms. The youngest group calls the EAC its classroom. Additional school outbuildings include an art dome, a theatre space, and a permanently lodged food truck which prepares freshly made snacks, lunches and occasional dinner options daily for students and their families. In lieu of traditional class organizational systems based on chronological age, the school features relatively small classes of children (the largest group during the data collection period being a group of thirteen students) that are referred to within the school nomenclature as groups and organized by both academic as well as sociodevelopmental factors. Children may spend one or two years in a group depending on their level of readiness to proceed to the next group. Each group is led by one or more instructors referred to as morning meeting teachers, with additional teachers in supporting roles to address both content areas and specific student needs. For example, there are several teachers who explicitly teach math and science courses, while other staff function as paraprofessionals for individual groups.

Differentiation in classes based on student need is common at the upper levels, as students are placed in classes based on their individual learning trajectories.

Per the available school literature and in conversation with participants, the founders of the school sought to nurture student and staff relationships with nature via what staff refer to as a love-based education. Included in both the school's vision and mission statements on their website are explicit language regarding developing student capacity to connect with themselves and their natural environment via intentional, developmentally appropriate experiences that seek to protect, defend and nurture the innocence of childhood. Throughout multiple discussions with staff, nature was conceptualized as a thread running through every element of the school day:

[Nature is like] a thread you can't pull out. It's in everything. (*Spicebush*)

There is no not being in nature here. It is interwoven into everything we do.
(*White Oak Tree*)

So, you know, no matter what we're doing, we're doing it outside, we're doing it in nature. And it's, you know... I appreciate... you're approaching this from an academic perspective, but it's a very natural perspective for us of just this is just what we do and this is the best way to do it so we should do it this way. And it's, it's something that I've really grown to appreciate as a...staff member and a former student for sure. (*Blue Jay*)

...Another thing I absolutely love about the culture. So it's like, how do we work within nature? How does nature work on us and how does nature, you know, shape our experience, our day to day experience and then how does nature shape our community and as a community [what] we hold close? Or, like, [as an example] what you wear depending on the weather . It's not, "how do I want to look today"? It's, "how warm is it"? "How cool is it"? "How many hours am I going to be outside on this particular day"? And what that does for children is I would say or as my mother would say it puts the emphasis on the right syllable. So...it upholds our guiding principles to protect, nurture and defend the innocence of childhood. We're not asking them to be little adults who are very concerned about, you know, looking just so, we're asking them to wear what is appropriate for the weather that we're all going to be in for several hours. (*Spicebush*)

The above excerpts highlight the collective belief that nature is a central thread through the school, emphasized in everything from the architectural features of the school buildings to the school culture and academic curriculum. For instance, every classroom features a door to the outside, natural building materials and large, curtainless windows which facilitate continuous observation of the surrounding woods. Each morning meeting teacher opts for natural or soft lighting, and decorates their classroom with naturally-made materials. Furthermore, each space is organized with students in mind. During my observation, students in various classrooms were often provided the option to work in various spaces in the room itself, or choose a spot outdoors connected to their classroom.

For example, several students opted to complete their independent math homework out on the group's covered porch.

Every participant interviewed had multiple examples of how nature appears in their daily school experience, noting that the amount of time spent in nature tends to be inversely proportional to a child's age. This was supported by personal observation, as I accompanied the youngest students outdoors for several hours on a woods walk and loose parts playtime with pumpkins one morning, while the older students stayed (mostly) indoors for morning work. Participants identified engaging in unstructured free time, group activities, and experiences in nature which complement classroom learning:

[A positive is] the entire school...having so much access to nature. We learn a lot more about it, and not just, like, the basics in a science classroom, where we actually get to go out and interact a lot. And...it's fun, yeah. (*Hazelnut Tree*)

Ah, I love this setting. Like, it's outside in the middle of nowhere. It makes me feel...more safe? Uh, just like guarded by nature, you know?
(*Mountain Mint*)

I think it [nature] shows up a lot more in the littler groups, like, for the littler kids. We don't have a lot of stuff to do with nature and, like, just our everyday learning. in my class, but, um, I mean... when I was, like, in the

last group, [morning meeting teacher's] group, um... We went outside a lot and we would, like... choose, like, we would have to find... Like, something that is the shape of what we were, like. studying or something, so... But, I mean... You can also choose, like, afternoon classes that have a lot to do with nature, where you, like, learn about nature and stuff. But not just a lot in, like. morning meeting stuff, like language arts and stuff. We don't do a lot with nature. (*Culver's Root*)

We are in nature in the morning, and after lunchtime sometimes, and we have afternoon classes, which is...and, well, people call it afternoon classes... and that's like, where you can pick classes, and there's outside classes and inside classes. And then on Mondays and Thursdays, we have no afternoon program, so we just get free time outside, so yeah, and then at the end of the day when our parents are picking us up, we get to play outside. I kind of like [all the classes]. Right now I have Acorn Academy. That class, we learned about trees and stuff, and how they grow, and then I have Market Day, which is room stuff, and you kind of just get to go wherever you want, and I always pick outside stuff. (*Rose Mallow*)

The above student excerpts identify that students expect nature to be a part of their day, interwoven into their academic learning. As one excerpt identifies, the amount of time spent in nature expected during the school day tends to vary with age, as older students begin to work on more complex coursework that is more

conducive to teaching indoors in a more formal, traditional way. However, afternoon electives for all ages tend to offer a variety of creative activities, many of which feature engagement with peers and staff outdoors. Staff participants discussed the intentionality of regular interactions with nature in both curriculum and daily procedures:

Well, [a benefit of nature integration is] certainly the ability to to cherish the natural world, and to want to stay connected to it. And use it as a classroom. In the afternoon, Woods Walk [class]. “Wow, what is that”? The things you can discover. Going down to the farm, oh man. And staying connected to the farm, because that's actually where the school started. So, still be connected to them. That's wonderful. (*Monarch Butterfly*)

We meet outdoors every morning no matter the weather. We eat snack and lunch outside every day. We end our days outside around our campfire. We make paths through our area to diminish the effect of our feet on the soil. We practice good stewardship by mitigating invasive plants. We learn about the movement of the earth around the sun and then observe that ourselves - noting just where the sun comes up over Grasshopper Hill in the fall, where it is in the winter, and then again in the late spring. (*Spicebush*)

It is easy to infuse nature into my personal experience with my students. Most of our class projects are centered around the natural world. This week we planted garlic. Last week we harvested potatoes. We passed a beekeeper on our way to our school farm and learned about honey production. My curriculum integrates the changing seasons and what we see in the world around us. My math lessons incorporate counting acorns and sticks. My love of nature coupled with my school surroundings create a seamless infusion of nature into the classroom community. (*Black Eyed Susan*)

These excerpts from three teaching professionals highlight the staff's intention and daily efforts to incorporate nature as hands-on context for academic learning, as well as infuse nature into their daily group routines. A few participants noted structured group activities outdoors together. These excerpts highlight individual groups regularly engaging in collective, organized activities in nature for both academic and recreational purposes, such as going on group hikes or planting seeds together to later harvest and use in a cooking class:

Sometimes we go on a walk, and we see lots of nature, like, frogs, snakes. (*Wild Ginger*)

Today we just went on a...like, a hike thing. We walked to Prince Lake before this. And we go on woods walks every single Thursday, and sometimes we just play. (*Riddell's Goldenrod*)

Other participants focused on the daily unstructured time each child and staff member has outdoors:

Yeah, I mean, certainly, you know, the expectation from [the director] and from the entire school is that we do things outside. You know, there we have fresh air time at least once a day depending on what group you're in. Hey, when you're doing that, you're going outside. And that's to the... kids definitely, but you know as a teacher if we're gonna tell the kids to be outside we have to be outside as well. (*Blue Jay*)

Well, you get more time outside when you're little. Honestly, it doesn't really change. Except for the time you get outside. And when I was in the...younger groups, you didn't really have an option to stay inside at Fresh Air. You, you...go outside unless it's like, really cold or the weather's really bad. But in the older group...do you want to stay in or go out? (*Opossum*)

Yeah, but, I mean, it was really...Especially, like, the first few years I was outside playing with my friends pretty much the whole time. And, and then, like, that's a lot better than just being inside. (*Cardinal Flower*)

Yeah, I think the strongest thing to change is boundaries, definitely and so we talk about boundaries there, like it's a very common thing to be walking around to have a teacher say, hey, you're out of bounds, come back. And so, you know, it starts in the front of the school in the playground and then it balances out into the field and then it bounces into that valley over there. And then that valley and that valley behind. And by the time you're in the upper school, it's the entire school. With limits. You know, there's certain areas you're too far. (*Blue Jay*)

There is also, you know, the ability to climb higher in the trees when you take the tree test. You can shimmy up the big pine trees and it's marked with a spot if you can make it up the tree and [teacher] says that you pass the test then up you go when you get to be a certain age. (*Spicebush*)

There is a schoolwide expectation that all staff and students will go outside for at least some portion of their day. In fact, the entire school pauses academic work midmorning to engage in an all-school “Fresh Air Break”, wherein the school collectively takes time to eat snack and go outside to engage with one another. The length of this break and general engagement with the outdoors is contingent

on a child's age; younger children tend to get proportionately longer breaks with greater periods of unstructured, child-led playtime. Unstructured play is contained by each group's individual boundaries; that is, an imaginary perimeter is designated for each group via natural geographic landmarks and manmade recreational spaces such as climbing toys and soccer fields. Older students are allowed increased boundaries in which to play. The following excerpts highlight the activity shifts in unstructured outdoor time as students grow older:

Yeah, Birch Woods is my group's special spot. (*Wild Onion*)

I like to build my forts with my friends. It's down there in the place behind our porch. We are probably like four weeks [away from finishing it]. We work on it every day. (*Muskrat*)

What I love is Woodville. That's my group. So when children are 9 to 11 years old, puberty's kind of off, you know, the play with toys and imaginative play at home becomes less. And what Woodville does, they imagine that it's the little city in the woods that the children create themselves, without any input from me and is governed by the Woodville Council. Which is the second year children in our group and has a system of currency which is bark or what they call gold because there's a downed tree up there that's kind of a gold looking tree and they make their houses and they make their shops and the imaginative play then extends well into

their eleventh year when Legos and Barbies and all of that is being set down. There is still Woodville. And because where they are developmentally it has a written record in their newspaper the Woodville Weekly. (*Spicebush*)

It's definitely just, like, cause you're out there, so you can kind of do...I feel like, and we would, like, build forts, and build snowmen and stuff like that, and then you just...have fun with your friends, like, being out in nature, and then...You're just kind of, like, free, instead of [stuck]...Which is really great, because then you can feel like you can kind of do whatever you want, and just...and run around and play games, and that's really fun. That's probably the biggest benefit, just...that time, because it's like... and then when you get in the older groups, then you still get lots of time, like, outside. (*Cardinal Flower*)

Yeah, I have a lot of memories of... of...You know, coming up with games with my friends, or... Creating, like. stories, and, like, within our games, and, you know, character arcs, and plot lines, and we would have these, like. we would... we would just... we would pretend we were characters, and... play with each other, and it's like... I don't know, it was so...You know, then we didn't think about it much, but, like, looking back on it, those... the way we played was so intricate, and, like, some of the stories got so deep, and some of the characters we created were...The

same way, and, like, yeah, just, just...Because we were put in that environment, we had to...Come up with something to do, and oftentimes it was something... Inventive and creative, and...It was... I took it for granted then. (*Painted Turtle*)

Though all school members engage with nature daily as a unifying school thread, the ways and means by which students engage with nature change with their age as well as their interests. The above excerpts speak to individual groups having special spaces or features within their geographic outdoor boundary that they take pride in; it is often discussed among students and staff as a rite of passage, and other groups are not to play within these spaces. The opportunity for regular, prolonged contact with nature through the child's time at school provides numerous opportunities for unstructured, multiaged play that shifts and matures over time while extending playfulness longer into adolescent years than perhaps it would otherwise. The preceding excerpts illuminate some of the play an observer might see with older students, supporting the notion that unstructured time in nature facilitates the continuation of creative, imaginative play.

Theme Two: This School Attracts and Retains a Strong Teaching and Learning Community with Similar Values.

Families and staff are drawn to the school by community ties, personal values, personal ways of being and educational interests for their own children. Furthermore,

*alumni, families of alumni and former staff appear to maintain strong ongoing ties
with the school community.*

Throughout interviews documenting the individual stories of parents and staff at the school, it was apparent that every participant held strong personal beliefs regarding the school and maintained personal values which align with one or more key points of the school's mission and vision. For example, adult participants described ways in which they make time spent in nature a priority in their personal lives:

Yeah. I go for walks. Go to [name of] Park, one of my favorite places. And sometimes they have work days, and I try to be a part of the work dailies. And, especially when it's connected to [park]. And I, you know, I try to just do this every day, just like, boom. Just look out the window. And, see, you use my senses. What do you see? What do you hear? What do you smell? What's the feeling? (*Monarch Butterfly*)

I love to run, hike, camp, and do all sorts of things in the natural world. More than that, I believe that to be an effective teacher at [the school], every teacher needs a strong pull towards and an understanding of the natural world, our place in it as a species, and ultimately a loving respect of nature and our planet. (*Blue Jay*)

As a nanny to 2 young children, it's imperative that we get outside every day, rain or shine. Always boost moods and attitudes. This applies to myself as well. I've created a space outside where I can read, be with my animals and also feel connected to my community. (*American Red Squirrel*)

Of the eleven adult participants interviewed, every one held one or more connections to the school, either as an alumni, parent of a current student or alumni, and/or a professional teaching role. This overlap in roles appears to be indicative of the positive perception of the school and alignment of personal values with the school's education paradigm:

I went there as a student [due] to public schools lacking support for learning challenges in the 80s. I found the school to be quite helpful so I am sending my child there as well. (*Sandhill Crane*)

I was seeking this type of education for my children. After enrolling my first born child in school, it made sense for me to transition to a role on staff. I was a trained teacher and I was inspired by the environment. Since this is/was a tuition based school, it was also helpful and necessary to teach at the school as a means of tuition reimbursement. (*Black Eyed Susan*)

My child went to school there and I am an outdoorsy person who has always felt happiest in the outdoors. I value time outside, time with nature, and unstructured (not adult led) play time. (*Spicebush*)

Furthermore, the following excerpt identifies the cultural value of relatedness within the school and its larger community, which supports the ongoing connection between current and former staff and students.

Yep, very... oh, I'm glad you picked up on that. Yeah, that is how it is. Yeah, I think because... How we... value, relatedness, and relationship. Whether it's with another person, or the work that you're doing. That gives it... It gives the person...related... I think it's important to feel related to what it is you're doing. And I think they feel connected, too. The relationship they [the students] have with this facility, this place. The people that were here. So... And they know they are. They know they're always welcome. (*Monarch Butterfly*)

One participant described a multi-generational connection with the school despite needing to travel a significant distance each day:

So, it's funny, actually, I have...kind of a unique experience when it comes to [the school] and, like, how I got there, and my kind of relationship with it. So... you might know [staff member]. She's a teacher

there. She's my grandma. Right, so that's kind of how I got into that, and like, my dad went there for a year, and my mom went there for maybe 2 or 3 years, so it's...kind of became, like, a family tradition, almost. After they went, they... it just... to them, it seemed like the right place to send... send me and my little brother. So... Yeah, that's kind of how I got into [the school], was just through family connections...[It] was a whole logistical thing for my parents. My parents sacrificed a lot to allow me to go there, like... We lived in [city] at the time, so...every day, they basically had... between the two of them, they had to drive about 3 hours just to get me to and from school. But it was worth it to them, so I think that speaks to, like, how valuable that school is. (*Painted Turtle*)

Several other current students noted similar long commutes to and from school, suggesting that this institution held special alignment with their caregiver's value system to make such a trek feel worthwhile.

In speaking with the professional teaching staff, participants identified that the school's mission and vision aligned with their personal career interests and values regarding education:

And that [ability to be a creative school counselor] really set the tone for a lot of what came later, which was a really strong interest in outdoor

education, place-based learning, experiential, strength-based kind of education, and teaching and learning. (*Wild Black Cherry Tree*)

I know and [other morning meeting teacher] saying like I was, before I was in this class, I was in, over the EAC and doing an early language lesson, some [of the] students who came into the lesson carrying their Waldorf dollies and the Waldorf dollies all got to sit in a line and see the Montessori lesson. Now, what [other morning meeting teacher] and I noted is if it was a Montessori school, the dollies would not be there. If it was a Waldorf school, the Montessori materials [would] not be here. And that is why neither one of us has ever any intention of going back into the environment from which we came. The environments which were so rich and wonderful in learning for us, but. This is better. This is better.

(*Spicebush*)

And I think it was really just my first real authentic experience with, this I don't think this is a strictly academic term, but it's what is what I call it of public schooling of large amounts of kids in, you know these large buildings that move from class to class, I would call it industrial schooling. It was really my first experience being a teacher in that environment and wrapping my head around what it takes to be a teacher in a school like that. And I did not like it at all and disagreed very strongly with that. (*Blue Jay*)

And what I was coming to in that time was there was still an otherness about those two schools, right? Like, you went to [name of different school] because you had some kind of, you know, what is still called a learning disability. We had different terms for it, but I realized [that] when you do school in this way, a lot of times, what are seen as disabilities don't rise to, like, the threshold of being diagnosed or even identified, because the environment is much more suitable to a broader range of learners...And it was super attractive, you know, because I knew that a child who would otherwise be identified as being ADHD could be sitting in a classroom here next to a friend who would not sort of require, in a different environment, any kind of identification, and they were both just kids at a school. And that's what I'd kind of been looking for, and really what drew me here. (*Wild Black Cherry Tree*)

Throughout my time in observing at the school and through interviews, it appeared that many of the teaching staff had engaged in a conscious decision-making process to move towards the educational model the school provides. While nearly every teacher and administrator had a formal professional background in education, each appeared to have experienced a critical self-reflection of what they had been taught in preparation programs or experienced at other educational systems at some point in their careers, and had made a purposeful choice to opt for a way of being and teaching that better aligned with their personal values:

And I did not like [teaching in public school] at all and disagreed very strongly with how things were done but also had, you know, basically no power to change anything, and realized that the needs of my students were so far from my desires as a professional teacher that, and realize that I just, I couldn't do it. (*Blue Jay*)

...For example, in the school I student-taught at. There wasn't even really a playground. I mean, you know, at our school, we have, like, nature as our playground, and we're surrounded by woods, but...in this particular school, it wasn't just the fact that we didn't have nature around us. And... feeling like, gosh, they don't really get to...like... I just... it was sad, like, you know, to have to play in a parking lot. Now, again, they're [children are] still going to find wonder and joy, and that's the amazing thing about children. They can play anywhere, but I think in seeing...like... I just... it was sad, like, you know, to have to play in a parking lot. Now, again, they're still gonna find wonder and joy, and that's the amazing thing about children. They can play anywhere, but I think in seeing...just certain... I remember, computer time for little kids that was...not really very meaningful, and so I think as I moved through, it was more...Always connecting with the kids, but not connecting with some of these things in place. That didn't make sense, in my mind, for children. (*Black Eyed Susan*)

As I completed my observations, the value of incorporating nature into education was apparent through each element of the school, from its design and decor to the daily learning flow. During my time there, I observed parents of current students engaged in supporting roles, such as managing the library. I additionally observed both alumni and retired teaching staff purposefully return to spend time engaging with students or mentorship with the current staff. The presence of these helpers suggest the feeling of strong cultural ties to the school.

Theme Three: Time in Nature Facilitates Awareness and Self-Regulation

In addition to ecological awareness, extended time in nature allows ample opportunity to develop awareness of self and others, thereby supporting self-regulatory behaviors.

Every student participant interviewed identified the amount of outdoor time provided as a key benefit of attending the school, with multiple anecdotes regarding favorite activities with friends outside. Some older students additionally advised me to be aware of certain hazards, such as mosquitoes or prickly bushes, or conceptualized foreseeable concerns going into the winter, such as snow falling into snowboots. These discussions highlighted a gradual increase in self-awareness, including awareness of needs. The following excerpts demonstrate this development of self-awareness:

I'd say...when I went to school there, I probably spent 2-3 hours of my 6-hour school day outside. And yeah, you know, it's like, it's turning

winter right now, and there's definitely... There were definitely moments where it's like, oh man. I wish I didn't have to be outside right now, it's so cold, and I have to put on all my snow pants and coat and gloves and whatnot, and that's a lot of work, and it's annoying, but... I feel like... kids... you know, like, Gen Alpha, the new generation, I feel like they're really missing out on... That aspect of life, of just being outdoors, and, you know. Being uncomfortable with things, but being okay with being uncomfortable, like... It was kind of cold, and... You have an hour to do whatever you want to do outside, and so you kind of have to... Use your imagination and your creativity to entertain yourself and your friends for that hour... (*Painted Turtle*)

Well, sometimes it can get... really rainy, and since it's outside, you can get, like... we call it a soaker, where if you step in the water and the water, like, floods your boot. Yeah, that's like my least favorite thing. Yeah, then you just deal with wet socks for the rest of the day. (*Redbud Tree*)

I feel like being a part of a nature-based school gave me a strong sense of empathy. There was a big focus on equity, equality, exploration, emotion, history, and sense-of-self. Because of my experiences at [school], I feel like I have a strong understanding and connection to our world and the life it supports. (*Sandhill Crane*)

During my observations, I noticed multiple co-regulating interactions between students and staff in outdoor spaces. For instance, a preschool-age child fell down as we were walking outside on a path, and another student attempted to help the child up. As this situation unfolded, a staff member was nearby to check that the student was okay, validate their emotional response and thank the second student for trying to help. Engaging with various terrain and flora outdoors provide a unique opportunity for students to develop a mind-body connection, as well as cultivate empathy for others. In the older classes, student participants identified that their classes had additional spaces and options to practice self-regulation, further encouraging both awareness of self and self-advocacy:

Just...like, if you feel you're gonna get upset, we normally just, like, go sit by ourselves, and then in our classroom, we have, like, a corner that you can sit in if you get frustrated. It has a bunch of fidgets and stuff.

(Muskrat)

I feel like this place is more, like, has a little more freedom, where you can move around. Like, I realized that in my old school, it was like...I felt glued to my seat, but at this point, if you'd like, you can walk out of the school, get some fresh air then, or walk around. Uhm, and I realize that's a really good thing of like, being able to move around. And not feel like you can't do all of them, except what's in front of you. Yeah, being able to get up and move, um, can be really helpful. *(Deer Mouse)*

Well, you're always able to just take a walk outside if you really need it.

Yeah. Like, especially in the older groups. (*Prairie Dock*)

Within their interviews, several of the teaching staff made explicit reference to nature as being a primary teacher, expressing the view that nature becomes a reflective vehicle for cultivating understanding and empathy for self and others:

The children are so excited and inspired by the natural world. Finding a caterpillar or watching a bird come to our feeder fills the whole room with delight. Spending time outdoors, and often doing vigorous activities, like carrying wood, or digging in the dirt, provides the child with a mind-body connection that enhances their development. A child's appreciation, understanding, and respect for the natural world, transfers to a sense of appreciation for themselves. (*Black Eyed Susan*)

At [our school], we start with nature. Our first connection is outside and then our next connection is our neighbors, our friends, our community, right? So and for me it's like if you can't connect with nature first. I don't know if you can connect outside of that. Nature is our primary teacher.

...And I think about the classes that I teach, you know like a Woods Walk class sounds pretty simple; we're just walking in the woods but what we're doing also is creating a community of, you know, as we walk out, okay, but they're also testing themselves. "Oh, I'm jumping on this tree!" And I

let them test themselves in nature. And what a safe place to test them...I had just the other day this little girl sitting two or three feet off the ground and a tree fell out, and boom! [She] hit the ground. Looks at me, big tears...and I'm like, "okay, let's breathe"...Oh, you know, I said, "hey, when we sit up high, this can happen, right?" Like there's some risk there. There's an element of risk, but it's managed risk. It's safe because you're in nature. So you fell on the ground, skinned your knee. But if we fast forward that in 10 years, what kind of risk are we taking then? It's a much more, there's a lot more risk to it. And if you've never pushed yourself as a kid, man, how do we know as an adult or a young adult or as a team? Man, where's your comfort zone? I got to step out of it. "Oh man, this feels awesome. This feels awkward." So I think for me that nature piece is that first connection. (*White Oak Tree*)

What I've noticed here is, with extended time in nature comes an increased ability for the child to regulate themselves. An internal check grows much more exponentially with exposure and time and nature. The ability to expend big energy and then wind down into academic work is much more possible with an extended time or nature...I think that the recess times [at participant's educational field placements] were twenty minutes. Yeah. And so triple that, is what our fresh air break is. Yes, and then add another hour, two or three depending on the age of the child five days a week right and and that's, and then add another half an hour for time outside at lunch

and then another half an hour for reading time outside at lunch and what it gives you is is is a regulated child. And I think that's a Montessori term that applies. They don't have that frenetic, nervous thing going on with extended time in nature. And the school attracts children, for whom certain systems have not worked because those systems didn't allow for them to expand that energy. (*Spicebush*)

I think as [staff member] uses the term anti-fragility to, describe what we're talking about where it's not necessarily the resilience that everything, you know, brushes off you, you don't even notice it. This is anti fragility of you take this stuff but it doesn't break you. It might knock you down a peg but you have the ability to get to get yourself back up. So I love joking around with kids whenever they like fall down or something. I like help them stand up and it'll be like, help them stand up. It'll be like, you know, "[Do you know] why we fall down?" And they're like, "no, why?" "Because you learn to get back up and look at you. You've done it. Awesome." And then send them on their way. (*Blue Jay*)

And ultimately, for me, the most important thing that I don't want a kid to come out of my class or [the school] is the sense of self. Not so much what your skill base is because, like I said, everybody's got a different skill though. Everybody's gonna enter that school. I mean, I know kids that could knock out tests, it's easy, but they didn't give an [expletive]. So, you

know, it meant nothing to them. And there were kids, it meant everything [to]...maybe I feel so good about myself because I did this paper...So there's...different types of kids and different types of learners, but ultimately it all comes back to who they are. And do they know themselves? And are they comfortable with that person? And can they go out in the world and be themselves in an authentic way and are they open to others and are others going to be open to them and can they move through those spaces in those different places with resilience, with empathy, with love, with wonder, with curiosity? (*White Oak Tree*)

When children are with trees and can see the leaves move with the wind and hear the sound that movement makes and then look at the veins in the leaf and the veins in their hands a connection is made that opens the door to wonder and respect for the natural world. That awareness can become a foundation for kindness and compassion for each other and our world. (*Black Eyed Susan*)

So, you know, as we're talking, kids are filtering out to run and play and be in the natural world. So they might choose the field and play an organized game of soccer or something, frisbee or something like that. Or they might be building forts. And their forts, what we see them, we look at them like, oh, they're building a fort? Well, they're building their restaurant. That they're gonna serve all of, you know, the acorns and the

mud pies, like, all the things that they're gonna do. And so...I think that experience of, like, purely the experience of being in an unstructured, imaginative, free-play environment that's also, like, a natural environment itself, that's a beautiful, wooded...area that is... barely... unperturbed by humans. You know, like, part of our...campus was an old apple orchard, you know, so that's not exactly, like, old-growth forest, you know, but other parts are original old-growth forest. And I think all of those different environments, regardless, offer what we know are really strong, like, cognitive and physical and emotional benefits that are less tangible. We're not actually even trying to measure them, we just know that they exist. But there are a lot of ways, too, we're looking at how do we structure our programs so [they are] intentionally offering opportunities to teach and learn about emotional regulation behavior, you know, intra- and interpersonal regulation and intelligence and growth. And those exist in, like, a lot of the mixed-aged activities that we do, so there's opportunity to be the older, be accountable to being with younger students, and the modeling, and the expectations that can come with that. (*Wild Black Cherry Tree*)

In each classroom, there are collections of photographs, maps and realia of plant and animal species. Direct engagement with the subjects of this learning material would seem to additionally support an ecological awareness and interest in engaging with the natural world:

I think it's good that we get a lot of chances to be in the wilderness a lot, and I think it's especially good for my sister because she's interested in zoology...I think it's good we get to see a lot of animals. I've seen a bunch of birds, which are in the category of my favorite animal. And a bunch of squirrels, that I think are really cute. We have seen deer before, but I was really young and I can't quite remember. (*Wild Onion*)

When I entered the school for the first observation day, I immediately noticed multiple student-made signs noting the detrimental effects of invasive plant species and encouraging the student body to destroy them. Much like the nature-centric realia in classrooms, these handmade public service announcements suggest emerging student awareness and concern for their environment. The following excerpt describes a student's learning process:

I've realized all the invasive plants that can... Like, they came and took over. And... Like, the bittersweet that's been tangling the roots. I realized that needs to end. Yeah, okay, so a lot more awareness of, like, I guess the negative... environmental impacts we've been having. I guess... I've kind of just thought about... I can help with making that stop, like, I can pull out the bittersweet... There's a bunch of ways that humans can get rid of invasives. (*Deer Mouse*)

Theme Four: Time in Nature Supports a Wide Range of Skill Development

Nature allows for development of self regulation, understanding of self and resiliency, which fuels development of interpersonal relationships and academic skills.

Prior to the start of the school day, I observed children both in and outdoors engaged in play or creative pursuits. One participant stressed the importance of extended outdoor play for students:

And so really, the connection I see between nature and whole child development is that we are enacting our roots in a way that is nearly impossible to do in the modern world. Of giving children a space to be outside and to play as they're all their authentic selves with other kids being their authentic selves in nature, which is an inherently authentic place. You know, there's no limit to what a child can do with something like that. (*Blue Jay*)

Each group completes a large majority of their academic work during the morning, with Fresh Air Break in between subjects. In conversation with staff participants, the view was expressed that time outside helped students take a cognitive break and re-center to engage in academic thinking longer:

...I think that that's what allows for the depth and quality of our work time, is that they spend so much time out in nature that they can come in and be ready to set with a written piece for a while, like the warmth feels good. "Oh, we get to come in and work now, because I'm freezing". You know, it is restorative and allows for, you know, for good work...I think

it's important to learn how to be able to be uncomfortable...I tell the kids, learning is often uncomfortable, especially math. If you accept that, that you're gonna be wrestling with this, and that it can't bite you. You know? And being out of nature is like that. And oh, you got a soaker. What were you doing when you got your soaker? What do you think you should do different next time? I'm not here to solve it for you. I'm just here to help you walk, you know, work through the choices that you're making.

(Spicebush)

Well, we have mints that help us wake up, so we can...and if we have a cognitive load, which that's what [morning meeting teacher] calls it, we just go to the hallway and walk and then come back in, and that's really usually pretty easy. *(Bumblebee)*

In older groups, staff were observed asking children what they felt they needed to sustain attention on their work. In one class, the morning meeting teacher offered ginger snap cookies to the group during math, citing ginger's capacity to support concentration. In another class, the morning meeting teacher was observed to lead the class in a mindful moment and asked students to check in with their physical selves prior to engaging in a test, suggesting that the students were actively fine-tuning their self-regulatory skills.

As noted, each group generally spends their morning work time focused on academic learning, such as math, reading, writing, etc. Within these subjects,

staff reported incorporating nature-based learning activities to contextualize student learning and enhance understanding:

So, if we talk about growing food, which is the part of what we're doing, and a part of what we want to do a lot more. There's the obvious, like, earth science and physical science and all of that, meteorology, you know, like, all the fun, kind of, elementary school sciences are in there, as well as math, you know, which... which I really love, because a lot of what we're doing in those much more experiential type of class options is that I think what we're doing is helping them form, like, conceptual understanding of like, the more straightforward academic stuff. So, like, if you're in math, at whatever level. You know, a really good strategy to have. And a lot of math that you'll encounter in the middle school and elementary school ages is being able to predict what's probably about the right answer here. based and place-based learning that is a big part of what we do. And, you know, even, I mean, you can write about all of that, you know, and I'm just picking, like, the...CSA and the agriculture stuff and the farming, but it can be all kinds of things, like...kids were... some kids were just writing about, their favorite thing, which is to do what we call a lake and back, which is to hike down to [name of] Lake and enjoy being down there, because it's so beautiful and serene, and all the animals that we see, and so that becomes, like a microfiction, creative writing assignment. or, you

know, there's just a million ways you can go with it, so that's kind of how we're doing that. I think. (*Wild Black Cherry Tree*)

Additionally, staff identified that the school's incorporation of nature and experiential classes allowed students to find what teachers called their 'genius', and utilize it to support their resiliency when working on academic content they find challenging:

...At a time when learning concentration is a difficult task. Like you're asking a six-year-old to concentrate on something and learn something new that's totally foreign to them. "Hey, okay, now I'm gonna give you a set of symbols and we're gonna put a bunch of sounds on them and then we're gonna push them together and I expect you to know what that word is". Well, for some kids it's, "oh, those symbols are simple". Some kids, "I don't know what you're asking me to do. That's crazy. But man, I can go catch a frog. I'm the best of that". "Okay, well why don't you go catch a frog, feel really good about yourself, then come in and let's deal with those symbols". (*White Oak Tree*)

Each afternoon, students either engage in more experiential activities with their groups, such as a high ropes course or arts classes, or else choose what the school calls 'Afternoon Programming', which are trimester-long elective courses led by morning meeting teachers on a variety of topics and flex based on student interest in order to honor the innate genius of the child:

Childhood is just filled with an innate sense of wonder to begin with. So...To continue that, and again, with, you know, the whole...basis of the school, every child's a genius. It's allowing them...To let that genius continue to grow, and honoring, you know, what our... what our founding fathers of the school did, our founding group and keeping that magic alive, and it's... and it's keeping those traditions alive. I mean, something as simple as the fact, like, I teach a class called Fall Fairies every fall trimester. (*Black Eyed Susan*)

And we've done bookmarks, so they can sew buttons onto the bookmark. Okay. Yep. And it's amazing how...How comfortable they get with it [a needle], and how quickly that, ouch kind of goes away, because they know it's sharp, and they know what to do. The hardest thing they have to do that's kind of stayed in there for all of them is threading the needle. Well, that's because the thread is round, and see, the needle has that space there, so sometimes if we bite the chair just a little bit with our front feet, we can flatten it, and you can go in and keep it very, very short, as if it's long, and you try to push it there, it just collapses. There's lots of little subtle lessons to learn in and of itself. It's fun. (*Monarch Butterfly*)

Many afternoon programming classes engage students in their immediate environment using all of their senses, which further helps develop awareness of self, others and an appreciation for the natural world:

Last year, Weather Wonders was my favorite class and Geology; they were on the same day. (*Wild Strawberry*)

Oh, my favorite class is called ASG. It stands for All School Games. And it's where we go out into the big field over there by, uh, [staff member's] house, and we play a game that like, almost like Capture the Flag. But there's, like, a box, and that's the Safe Zone on either side, and the ball is in there, and you have to get it, and then the rest is just, like, your flag. (*Redbud Tree*)

Also helping build structures at the school, like, there's a treehouse there that I helped build, and also the greenhouse I also helped build. They had a greenhouse when I was there, but...It was kind of deteriorating, so we took it down, and we put up a new one, and...Yeah, being able to... Basically, you know, learn construction at the basic... very basic level. Just being able to... Be a part of that experience, and... and... Spending, you know, months creating this... this structure, and then... and then growing vegetables in it and stuff, and eating them. It was like...that meant so much to me. (*Painted Turtle*)

So, a high ropes course is... logically incredibly safe. You know, we... there's...All kinds of redundancy around safety, and...[staff member] and I, who run the course, are highly trained in all of these things, all the safety measures are there. But yet, you know, climbing thirty feet off the ground,

and climbing around on ropes, and things, it's scary, right? It's at least...adrenaline-inducing. You know, either it's exciting, it's somewhere between super exciting and extremely scary. And that you move along that continuum, depending on what you're trying to do up there. And so, you know, it's an opportunity for kids to find like, the outer edges of where they can tolerate uncertainty, stress, fear, and learn to deal with it where there isn't going to be a genuine, huge negative consequence, right? So, in that way, it's very prescribed and intentional how we do that, yet the effect is really strong. And there's no...no one can win ropes course, and no one can lose it. It's just... How we're all gonna...choose to engage with it, and everybody's going to do that to the best of their ability, and to encourage and support their friends doing it to the best of their ability...Because that very same example on the ropes course is true in the sandbox. Or when you see the little kids working so hard to master the monkey bars, it's the same thing. You're at the outer edges of what you're able to do. It's pushing you physically, mentally, and emotionally. And you get repeated, positive, supportive practice. And over time, you're just building a foundation for how you move through the world. (*Wild Black Cherry Tree*)

Theme Five: This School's Culture Promotes Protective Factors and Resiliency

This school's structures, policies and procedures allow for enhanced interpersonal connections, ongoing mentorship and community connections which further support whole-person development, individualized academic development, continuation of traditions, alumni engagement and place attachment, thereby increasing individual protective factors and resiliency.

As in every educational institution, the culture of the school plays an important role in the day-to-day experiences and learning processes of both students and staff. Many students I interviewed had been attending the school since they were four or five years old, which would create continuity of cultural practices. One participant describes how the practice of a multi-year classroom additionally supports this stability, lending itself to feelings of safety and therefore readiness in learning:

...And the children who have been here from the very start in [the youngest] group and have acculturated, hold the culture for the ones who are new, hold the culture for the whole school. And that's the beautiful part about a multi age classroom. Then your culture is much more stable....Right. Slide in, leadership year that second year...they know the lexicon, their boots are on the ground, you don't have to rebuild a culture before because that's also hierarchy, right? [And] safety. If they're not safe and steady, it's harder to get to learning. So they already know and then they're ready to jump into the learning piece so much faster. It's pretty great. (*Spicebush*)

Participants noted that the school does not participate in formal social-emotional learning lessons. Rather, it is embedded within the school's culture and teaching practices:

But it doesn't have to be... I guess my point in bringing up that example is I don't think it needs...: I have a very strong personal bias against, like, school-wide SEL programs. Like, I don't believe in the idea of, we're going to insert social-emotional learning into the curriculum for 20 minutes a day or a week, and call that proper or legitimate education around self-regulation, emotional learning. I just don't think that's how it works. I think it needs to be just a part of what going to school is for you.
(Wild Black Cherry Tree)

I was rarely by myself at the school.and... When, yeah, if somebody is...struggling to manage their emotions, or, you know, they're expressing anger or sadness or whatever, having some sort of emotional outbursts, like definitely, there's an instinct that these students have because of what they are taught, and because of the experiences there, there's definitely an instinct that students have to...go to those people who are struggling, and to help them however they can, you know, ask what's going on, or what can I do, or...Yeah, I think that... I think that the students there are definitely taught to...support each other emotionally, and that...if they themselves are struggling in some way, that it's important to reach out to somebody and share that. You're never the first or only person to

experience the things you're experiencing, especially when it comes to... emotions. And also that, you know, you're never alone in your struggles.

(Painted Turtle)

I naturally observed social-emotional learning each day of my observations. Staff appeared to have engaged in ongoing professional development and discussion to cultivate cohesive language and practices in addressing student concerns. For example, during one morning, a morning meeting teacher collected her group to discuss an apparent conflict that was occurring with another group; according to the younger students, valuable items had gone missing from their special spot outside, called Birch Woods, and the younger students could see them within this group's boundaries. The morning meeting teacher engaged all students in reflective discussion without judgment or blame, seeking collective input from each student and scaffolding the development of conflict resolution, which was then shared with the younger group. The items in question were returned without further conflict. In each class I observed, staff were tuned into each individual student and their needs, validating their concerns while assisting in emotional co-regulation and problem solving.

Another theme that appeared in multiple participant interviews was the concept that children are at the heart of the school's mission, and therefore come first and foremost in all decision-making processes:

...At school at [name of school], we light a candle when we do staff meetings often. And it was just something that has been done for a long time and I didn't think of it and it was early this year or late last year I think someone said that, you know, reference the candle as the children and my understanding is we light a candle that represents the children in the heart of our circle. And so when we are meeting together, when we are formulating what is our school, we have our purpose right in front of us of the children who are here is why we are here. (*Blue Jay*)

One participant described how the school was intentionally built to maintain small groups of students, thereby supporting an individualized approach to education, focus on each child and increased connectivity between staff:

You know, the schools stay small intentionally because it allows you to be limber and allows for those conversations to happen [between staff] without it being a huge thing, right? I was told that these rooms were kept small, essentially, because they did not want anybody to ever succumb to a temptation in making the class sizes too big. (*Spicebush*)

Some participants described the benefit of being able to give each student individualized attention, which supports learning and creates conditions for a highly connected atmosphere:

...Someone outside of yourself is paying attention to what you're saying and showing me. Sometimes there's a big change in their behavior.

Something's going on. Can you tell me, you know, are you feeling okay?

Did you get enough rest? Did you have breakfast this morning? You know, kind of pick it apart, and then find out that... and they're carrying around a hurt, you know, that may have happened at home or happened at school the other day, and it didn't get resolved. (*Monarch Butterfly*)

Another participant reported that her child, now a high school student, actively expresses missing key elements of the school's culture as she finds them lacking in her new environment:

...That's what she referred to as public school, the grindstone. So, yeah, it's interesting now, she's readjusting, and she is doing well, but she's able to really verbalize how she misses being able to be around the younger age kids, that whole, like, multi-age connection. She misses being able to go outside. And also just that it's almost like a family atmosphere. It's just comfortable and free-flowing, and now, you know, it's much more regimented. And... and she's really, again, she's doing well, but she misses it terribly. (*Black Eyed Susan*)

In order to support the school's culture, new staff are involved in a comprehensive mentoring process. This participant describes an unlearning and relearning process to adjust to the school's unique ways of being and doing:

Coming on board here was really, like, two years long, which was an incredible help, to be able to understand a place that had been under the

same leadership for forty-two years since the founding of the school.

There was so much I needed to understand and learn, and so much history, and all the people I needed to know about...that really isn't, like, feasible to do, like, every time, I know. But we definitely saw the benefit of the mentoring process, so a lot of us who came in around that time, not to the extent I did, but most, like, all but one had, some...what would be called, in most circumstances, a pretty intense level of mentorship coming in.

And that really helps with culture. So that idea of, like, letting go of habits or perceptions or ways of needing to be a teacher or needing to be in school as the professional, it really helped not just to let go of that, but to know why and what was in replace of it, right? Like, okay, if I'm not going to be doing what feels like six hours of core academics all day, then how is it going to work? How are they going to get enough? So to have a veteran teacher who taught that same age and that same group for 20 to 30 years say, "Oh, this is how I've seen it work", was incredibly valuable, and I think it really sped up that process. And then, in the last few years, we have some teachers here who didn't have the benefit of that long-term mentoring, so we've been doing it, like, by committee, sort of as a little community up as they're here. (*Wild Black Cherry Tree*)

Staff discussed the cultural importance placed on equalizing the power differential between staff and students as much as possible, and seeing themselves as creative, growing learners. For instance, students call staff by their first names. One

participant describes his appreciation for bidirectional learning between staff and students, which cultivates a culture of curiosity and learning:

...And our kids, when they move to the next system, whatever it be, usually what we hear mostly about up and kids and they just talk to [the] teacher and focus [on the] normal person. ...Because in our educational experience here, I'm [first name] and not [formal name]. I'm no more important than anyone else here. It's a circle. Like and I think by showing them that you can be vulnerable that you're not always right that you say, "I'm sorry. Hey, I didn't see that that was wrong or man, today I messed up or you know this isn't, I'm not very good at this, you know, and let's learn together". And sometimes I'll be teaching a class that I don't know much about. Then let's, yeah, let's learn it together. Maybe you'll teach me. Thank you. I'll learn it from you. And then curious, like, adults learning...I think we do a nice job of staying curious, showing it, hey, even [though] I'm [age], I still am learning every day. And I love it. Thank you. You know, I'm looking forward to it. Teach me something new. Oh, this is the new thing. Whatever. Awesome, show it to me. I wanna hear it. I wanna see it. And I think they feel that. (*White Oak Tree*)

Yeah, that's one thing that I think as the adults here, we absolutely love and relish the opportunity to be in an environment that is modeled on... on...creativity and growth. So there's... and at the same time, there are so many things here that are long-held traditions and practices, right? So you

have that, and that's sort of, I think of it as the foundation upon which you can be creative, you know, so we are always looking for new things. Like, in the last 5 years, our... we have a middle school cross-country team, and that's never... the school never had that before, so we... so we kind of came up with the idea. We were like, that's a very good idea. We asked the kids, they were into it. So we started a cross-country team, and now we're competing, you know, at regionals and county championships and all that kind of thing. that's something I really... we... I think we all, I could speak for everybody, really love about being... about being here, a part of being here. (*Wild Black Cherry Tree*)

On one wall of the school, outside the office, there is a photo montage that encompasses staff and students from nearly every year in the school's history, an implicit nod to the importance of connection through the generations of the school's community. Every non-student participant that I spoke to held multiple connections to the school, and noted that school functions were regularly attended by alumni, drawn by the ongoing feeling of connection:

Yeah, I think they come... people come back because they feel so comfortable here. They feel known. They feel seen and heard. Like, they belong here, and they do. They do belong here... I know they remember things that they... they were told, or that they felt. Because when they come back, I've had kids come up to me, and they say, you know, Holly, when I was here, and this was going on, and you said this to me, I just

want you to know that that was really important to me. Thank you. Its like...wow. You don't...you don't realize sometimes the...the impact something you say or do has on somebody else. (*Monarch Butterfly*)

But, yeah, those guys [friends] mean a lot to me still, and...Another big one is the teachers, like, anytime I go back and visit, I probably go back to [the school] once or twice a year. And attend their, like, fundraiser events and stuff, and...Yeah, all the teachers at that school, I see them as mentors, and...Their advice and their opinions really matter a lot to me. And they're always so supportive, and so interested, and they... yeah, they're just super invested in all of their students, like...I can tell with me and other alumni, they are... they truly care about, you know, how we're doing, and that we're succeeding, or struggling, or whatever. (*Painted Turtle*)

In addition to a feeling of interpersonal connection, participants expressed a deep feeling of connection to the physical place itself:

...I don't know if I'm the best to talk it for academic[ally speaking] because I go into poetry a little often I think but I do think that there's a an artful and poetic and human understanding of, this is a place that has existed and will exist, and you are a being that is existing in this place, and being able to, you know, touch that time and place of, you know, putting your feet in the same ground that other people before you have and just

having that sense of, I don't know, ancestral connection and stuff. (*Blue Jay*)

...Just the land itself is so sacred, so it goes... it goes so much deeper, and I have to remind myself that, like, I mean, we're in this beautiful setting every day. Sometimes it's like, I really need to stop and still even... even breathe it in and take it in even more, because it's... it is truly special, just on so many levels beyond the fact that it's like, wow, this is such a cool school, and all kids should have this. It's like, yes, but also just the connection to the land, and what it means. (*Black Eyed Susan*)

Yeah. You know, and when the community teaches them, they feel safe. They feel seen and they feel like, "Oh, I have a voice. And because I'm part of this thing". And, once again, it really starts with the trees and the grass and the mud, like, man if I'm a part of that, I'm a part of everything. And, you know, that's where that nature based...I always come back to, to my growing up here. And I always knew in the times that I was not doing well my first go to was, I've got to get outside. I mean, I gotta go either grab a basketball, shoot some hoops or go for a walk or just mow my lawn or whatever it is be outside. It's my first go to and you know, I think that once again that nature-based learning started that. And I still say we still have kids, from twenty, thirty years ago still come here. Why do they come here? What is it about this place that holds magic in it? Because when they come back they feel that, "Oh, yeah, that's what I felt when I

was six. That's what I thought when I was twelve". This connection to a certain thing, you know. And I think that goes with, we always say, once you're a [name of school] kid, you always are, okay, you can always, yeah, you carry it. (*White Oak Tree*)

Theme Six: Widespread Implementation of Such a School Model Would Require a Major Paradigm Shift in Education.

There appears to be a collective belief that the benefits of nature integration into student learning and this school's educational model far outweigh potential drawbacks but widespread implementation of such a model would require a significant shift in public or 'typical' education systems.

During the individual interview process, I deliberately chose to ask each student participant what they saw were the positives and negatives of so much outside time. The only perceived negatives were general outdoor hazards, such as insects or poky plants, as well as management of allergies. No child expressed the view that there should be *less* time in nature, and every child said they would recommend the school to others. Staff concurred with this sentiment. In comparing their experience in public school to this one, one participant described the inherent additional value of being able to watch their students engaged in unstructured play outdoors to better inform their understanding of who each child is and thereby better support their learning:

You know, like when I was a teacher in [name of city], the kids had I think like forty five minutes, if that of free time, of outside time throughout the

day and us as teachers were expected to stay away during that time. That was time that we could, you know, do our own thing, which was nice because, you know, we needed that time, and but there was the disciplinarians that were overseeing them and, you know, they, they could get in, in trouble if they did something outside of what they, you know, quote unquote should be doing. And so, you know, I, I've yet to come across a school that values that outside play and observation that comes from that the way that that [this school] does. (*Blue Jay*)

Yet while staff collectively noted they strongly believe in their educational model, they identified that this school's structure would face multiple challenges in being recreated:

And you know, I have all the respect in the world, teachers who go to school each day in those systems where the soil perhaps is not as fertile. The work is so hard. We feel very very fortunate to be in and working within this particular love based educational system. (*Spicebush*)

And it's just, again, we're never going to recreate our exact school, but a similar model, you know, if there's ever that revolution in education that I'm hoping for. All children deserve just a more playful and fresh and meaningful learning environment. And I do believe with...certainty that, you know, obviously some public schools are much better than others, and within those public schools, there are teachers that are stronger than others, and there are teachers that have figured out a little bit how to, like,

beat the system, so to speak, and get their kids outside a little more, and you know, bend the rules and squeeze in some projects. I think it's getting harder and harder for them, because there's so many stipulations coming down from the top. But, yeah, it's, I would love to see a ginormous amount of money gifted to the most underserved communities, and they really need to have the best schools. Because it's...it's just unfair. For a lack of a more glamorous way to put it, it's just not fair. (*Black Eyed Susan*)

CHAPTER FIVE

DISCUSSION

Prior research into nature-based education and its potential benefits have been limited in scope due to the wide variability within nature-based learning and further hampered by a general lack of methodological rigor. This qualitative research study explored the perceptions and lived experiences of current students, parents, staff and alumni of K-8 schools that integrate nature and the perceived effects of this style of education on students' and alumni, particularly in regard to their emotional wellness and ability to self-regulate through their lifespan. This study is a unique contribution to the existing literature due to the deliberate collection of data from both current students, staff and alumni across a wide range of ages; it also sought to begin to understand the perception of the impact of nature-based education on self-regulatory processes which in turn has broad implications for education, school counseling and mental health counseling. This chapter discusses the results of this dissertation study, as well as theoretical and practical implications. Furthermore, this chapter identifies future directions for research. Finally, this chapter concludes with a discussion of the strengths and limitations of this study.

Discussion of Results of The Study

The dissertation study specifically sought to collect information regarding the perceptions and lived experiences of students, staff, alumni and parents at a K-8 nature-

based school. The bulk of the research was conducted over a three-month period at the end of 2025, and obtained through surveys, interviews, observations and photographs. However, it is important to note that data from the researcher's 2023 pilot study which focused on staff perspectives of K-8 nature-based schools was also incorporated into this study. After careful reflection, I opted to include the pilot data within this current study for several reasons. The interview protocols for staff were the same between the two studies, with the questions themselves not contingent on time-related factors. All but two of the participants from the pilot study were again present for the current study in one or more capacities (observations, interviews, etc.). Additionally, I re-analyzed pilot data in the data analysis process, making sure to carefully consider any changes I made to the data via reflexive journaling to support the credibility and trustworthiness of the study.

From all the data collected, six primary themes were identified:

- 1) Nature integration is a thread uniting school mission, structure, staff, students and community.
- 2) Families and staff are drawn to the school by community ties, personal values, personal ways of being and educational interests for their own children.

Furthermore, alumni, families of alumni and former staff appear to maintain strong ties to the school community.
- 3) In addition to ecological awareness, extended time in nature allows ample opportunity to develop awareness of self and others, thereby supporting self-regulatory behaviors.

- 4) Nature allows for development of self-regulation, understanding of self and resiliency, which fuels development of interpersonal relationships and academic skills.
- 5) This school's structures allow for enhanced interpersonal connections, ongoing mentorship and community connections which further support whole-person development, individualized academic development, continuation of traditions and alumni engagement and place attachment, thereby increasing individual protective factors and overall resiliency.
- 6) There appears to be a collective belief that the benefits of nature integration into student learning and this school's educational model far outweigh potential drawbacks but widespread implementation of such a model would require a significant shift in public or 'typical' education systems.

These six themes can then be grouped into two clusters: school culture and the perceived effects of nature integration on whole person development. Discussion of the results of the study will be organized utilizing each theme cluster.

School Culture

Since the school's inception in the early 1970s, participants reported that nature has been viewed as a key component of the school's design, influencing buildings, school procedures, and academics. The value placed on nature within this educational system can be seen reflected in the school's mission and vision statements. The school's

geographic location is relatively isolated, placed well away from a main road. The physical main buildings (main school, theatre, and EAC) were built to have an eco-friendly footprint and designed to highlight the natural surroundings while supporting student function. For example, every room within the main building features large, curtainless windows, and doors that open directly outside. The floors have been updated to be heated, which supports the school procedure of taking shoes off while inside. Student groups (classes) are organized using a more organic, whole-child method than typical public school systems, as a child's cognitive and emotional level of development are considered as well as their chronological age. All students are expected to spend at least part of their day outdoors, with each student's net time outside contingent upon their ages, academic requirements and individual activities for the day. Student participants referred to engaging in a variety of both structured and unstructured learning experiences outside each day, regardless of the weather. Preparing to dress adequately for the weather is seen as a student responsibility and learning opportunity which develops resiliency. Staff participants noted that it is regular practice to integrate nature into daily learning and activities wherever possible, and that they are given the creative autonomy to do so. For example, I accompanied the youngest group on a tractor ride and Woods Walk hike one day; on another, a morning meeting group teacher spoke with me about taking their students out to chop wood for a neighbor. These are both overt examples of including nature in the daily schedule. And yet at other times, the integration is more covert. For instance, during a music class, students were playing hand drums and attempting to copy the noises and patterns they heard in the forest as a means of learning drumming

techniques. Staff participants seemed to emphasize that adding the natural world into their students' learning experiences was a "no-brainer" process; that whenever it can be added, it is and should be.

The school proudly highlights its connection and emphasis on the natural world, paired with a unique educational model. Both of these elements appear to set the school apart from other educational options which in turn appear to attract families and staff who also share those values. Each adult participant I spoke to reported opting to spend time regularly in nature themselves and finding it a source of restoration, suggesting a collective value among participants. Several staff participants expressed feeling uncomfortable in their original professional career environments and deliberately seeking out a school that aligned with their beliefs surrounding teaching and learning. Several participants noted that their families make significant sacrifices to attend the school, either in terms of financial sacrifice, long commutes, etc. And nearly every adult participant I spoke to had multiple connections to the school, as parent, alumni, staff member and so forth, again suggesting that families find this school's educational model to be of high value. Adult staff participants spoke about the intentionality of creating a "limber" school system fueled by close staff collaboration in which there is a strong emphasis on knowing, honoring and celebrating each individual student. This appears to be a value that drives the culture and energy within the school. Staff consistently refer to their school paradigm as a "love-based educational model", which sets the tone for curricular decisions, staff mentorship, staff engagement with students and cultural expectations. For example, several staff members talked about how they sought to

“follow the child” within their elective afternoon programs, and regularly adjust the class based on their students’ identified interests. Several student participants spoke about their teachers adjusting their workloads or extending their available time on tasks as needed, making learning both flexible and individualized while reducing student stress. Multiple observations between staff and students suggested that staff seek to engage in reflective listening and modeling of empathic responses, taking the time to fully hear the issue at hand and address it together. Multiple staff members reflected on the importance of learning and embodying this educational model through close, ongoing mentorship with both current and former staff. Another staff participant discussed how the school culture is expected to be a peaceful, loving environment, and that students are taught to model this for each other. For example, she shared a narrative about teaching students new to the school that there are no weapons allowed at school; therefore, sticks are for building, digging, etc., *not* pretend guns. The participant noted that multi-age learning supports the continuity of culture, which in turn supports academic learning.

Through my conversations with participants and review of available school materials, there appear to be multiple barriers in making this school system a widespread model. First, many participants discussed the impact of the founding teachers and described a thorough process of mentorship in this way of teaching; such a close, detailed mentorship experience would not be possible on a broad scale. Next, the costly tuition-based structure would be a significant financial burden for many families. While the school’s deliberately small structure and location allow for individualized learning, it creates exclusivity while limiting the potential for the same kinds of varied support

services currently offered in public schools. It is the school's philosophy that all children can be equitably successful without stigmatization, yet there may be certain student needs, disabilities or limitations that would not be best served in this school environment. Finally, the pedagogy that the school espouses is radically different from traditional public school models, which may be perceived by parents as an inferior education or one that will not favorably compare to the current educational norm.

The Perceived Effects of Nature Integration on Whole-Person Development

Through nearly sixty years of education, this school has valued individual connection with the natural world and enacted its philosophy regarding the benefits of regular engagement with the outdoors for all ages. Staff participants expressed the belief that knowledge of self starts in nature. In other words, staff participants believed that spending time outside daily allows children the opportunity to explore the environment, thereby satisfying and encouraging their natural curiosity. Daily outside time also supports students learning about their own physical and emotional selves, which then sets the stage for learning to engage with others. Furthermore, staff believed that extended time in nature helps children remain regulated and sustain attention through academic coursework. Staff reported that this unstructured time outside changes as students mature to reflect individual development; while young children might play in the sandbox or look for caterpillars, older students are building forts and creating complex working communities complete with currency. Staff described multiple instances in which students test their personal boundaries through engagement with both nature-based

objects and manmade objects (such as sandboxes and monkey bars), which then cultivates both understanding of self and resiliency. For example, one participant described a child falling a short distance out of a tree; the participant helped the child back up, validated they were okay and reframed the experience as a learning opportunity. Another participant described that her students meet outside daily, regardless of the weather, and if they find themselves cold or uncomfortable, the conversation focuses on what the child needs to do next time to reduce (or find comfort in) discomfort. Several adult participants noted that this development of resiliency is noticeable in their now high-school age children, as they engage in sports or challenging work environments. This development of resiliency was noticeable in current student participants as well. For example, in describing activities outdoors several older students expressed the dislike of wet socks or snow in their boots but described how they would try to mitigate the risk or just accept the discomfort for the day.

The school's approach to academics supports the integration of the natural world which thereby facilitates whole-person development and the development of resiliency. As previously mentioned, staff repeatedly affirmed the infusion of nature into their daily routines and learning wherever possible. In developing course offerings and planning activities, staff appear to integrate children's physical stage development as well as their cognitive development, thereby supporting skill building on a global level. For example, one staff member described how she almost exclusively focused on offering handwork opportunities to her young students, such as needlework or clay, during afternoon classes to support the development of fine motor skills. Afternoon programming is often multi-

aged, with older students taking on a mentorship/leadership role for the younger students. One student participant described how she deliberately sought out classes, such as cooking, where she could be that support for the younger students because she enjoyed mentorship so much. Experiential classes additionally offer the opportunity to develop resiliency on a global scale. For instance, one participant described that the high ropes course creates excitement and adrenaline for students as they grapple with progressing through the course at their own pace. Staff participants then expressed that this incremental development of whole-body resiliency taught via unstructured time in nature and experiential learning can translate into cognitive resiliency when attempting the kind of abstract learning found in academics.

Theoretical Implications

Chapter Two of this dissertation study included a comprehensive overview of key information pertaining to this study: major psychological and developmental theories, a brief history on the education of children in the United States, children's loss of nature and the subsequent impact on childhood wellness, and currently available literature pertaining to nature-based schools. The following section provides a discussion regarding how my dissertation study's results inform key theoretical and practical constructs described within Chapter Two.

Cognitive and Socioemotional Development.

As this study was conducted in an independent nature-based school, there was significant discussion regarding cognitive and socioemotional development of students. From a pedagogical perspective, several staff participants noted incorporating professional training in theory-focused educational approaches into their work, such as Waldorf, Reggio-Emilia or Montessori methods. Each of these theorists are attributed to the Progressive Era of education which emphasized child development and child-led learning (Paterson, 2021). All staff participants described an intentional focus on constructivist, experiential learning which is based in part on the work of Jean Piaget (Baştürk, 2016; Paparozzi, 1998) and emphasizes the active role of the student in the learning process, support for student engagement with others and the environment, and the view of student mistakes as learning opportunities. Participants noted that learning within the younger groups is designed to be significantly more hands-on and concrete, with abstract academic concepts becoming more paper-and-pencil centered when students entered the upper school (middle school) groups. This approach is in step with Piaget's Cognitive Developmental Theory (Crain, 2016), which suggests that elementary age children begin school in a stage of cognitive development he referred to as *preoperational*, characterized by the beginnings of symbolic thought but a lack of capacity to engage in logical thinking and a tendency towards egocentrism (Ciccarelli & Whith, 2012). By the middle groups, children would be in Piaget's *concrete operational* stage, wherein they would be able to begin taking the perspectives of others and working towards the ability to solve complex problems (Babakr et al., 2019). This nod towards cognitive development can be seen at the school via more complex learning tasks as well

the ways in which morning meeting teachers scaffold emotional regulation. For instance, morning meeting teachers of the middle groups offer “peace corners” for students to independently practice self-regulation and appear to encourage students to try to solve their own interpersonal issues with teachers serving as mediators if needed, whereas teachers within the younger groups tend to provide further scaffolding and support. According to Piaget, individuals achieve the *formal operational* stage around age 11 (Franzoi, 2011); Piaget believed this was about the time that individuals were capable of their full range of thought, including using multiple perspectives and in abstraction. The work of the upper school students would appear to be aligned with this stage; these students work on more complex subjects like algebra, world history and natural sciences.

Participants reported the incorporation of extended unstructured play outdoors and multi-age learning as foundational academic tenets in their school program, consistent with the work of Vygotsky (Crain, 2016), Bandura’s Social Cognitive Learning Theory (Gibson, 2004), and Bloom’s Taxonomy (Bigge, 1982). Bodrova and Leong (2015) describe that Vygotsky’s developmental theory involves cognitive processes, biological processes, environmental processes and social context. As children grow, their engagement with a *More Knowledgeable Other* (MKO) serves to facilitate the co-construction of both knowledge and appropriate social development via reciprocal social interactions with peers and adults (Vygotsky, 1962). Vygotsky believed that the act of imaginative, pretend play was essential for successful cognitive development, as it allowed children to learn that the meaning of an object may change based on context rather than its literal properties, thereby supporting the development of abstract thought

(Lillard et al., 2013; Vygotsky, 1967, 1978). As we have discussed, the structure of the nature-based school is rooted in multiage learning and interactions and features extended, unstructured playtime outdoors. Therefore, the school is naturally designed to facilitate the key concepts of Vygotsky's theory. Observations of students' outdoor play does indeed become increasingly complex over time. For example, when I visited with the youngest group, they were engaged in loose parts play with pumpkins and sand, busy creating rivers and moats out of the sand while experimenting with the properties of the pumpkin vines as digging tools while the pumpkins themselves served as barriers. Meanwhile, I was invited to come into the 'shop' of older students during another observation. The students quickly fashioned me a bowl out of clay so that I could partake in their 'campfire' and talk about the economics of gathering 'gold' from a nearby downed tree. These interactions highlight the development of complexity of unstructured student play outdoors, as well as the increase in social awareness. Vygotsky also championed the concept of the *Zone of Proximal Development*, which postulates that learning happens via a teacher (or MKO) intentionally scaffolding a learning process so that the student can learn to do it gradually without support over time (Lawrence, 2023). The opportunity to engage in the ZPD in both academic and non-academic learning was evident at this school. For instance, I observed students at the upper school engage in a math lesson regarding greatest common factors. Their morning meeting teacher introduced the concept in a whole-group format, then provided both whole-group practice as well as partnered or independent practice depending on what each student needed. Meanwhile, several staff and students talked about their enjoyment of the high ropes

course. This afternoon class provides a whole-body ZPD learning experience as students push themselves to their physical and psychological limits with varying degrees of adult and classmate support. Bandura's Social Cognitive Learning Theory, meanwhile, suggests that learning can occur through observation, which makes learning a cognitive process (Hergenhahn & Olson, 1997). Bandura suggests that observational learning can be broken down into attentional processes, retentional processes, motor reproduction processes, and reinforcement/motivational processes. An example of this theory in action at the school would be with regards to the maintenance of school culture. Staff participants discussed how the culture of the school is taught by the staff, but maintained and upheld by the students who actively "police" one another and seek to model appropriate behaviors for younger students or students new to the school. Finally, Bloom's Taxonomy is a widely used model for scaffolding increasingly meaningful learning experiences. Learning tasks at the bottom, such as 'Remembering', require less cognitive efforts than those at the top, such as 'Create'. Much of the school's intentional experiential learning would fall into the more complex categories of learning, such as 'Applying', 'Analyzing' and 'Evaluating', suggesting students may learn lessons at a deeper, more meaningful level than if they were simply completing worksheets.

As a complement to experiential academic learning, participants discussed at length the importance of maintaining a school culture that seamlessly integrates socioemotional learning, which includes self-regulatory processes (Senler, 2022). Eisenberg et al. (2010) suggest that children who have the capacity to self-regulate prior to entering kindergarten are more engaged in the classroom, experience more positive

peer relationships and demonstrate higher achievement in both math and literacy. This belief fits with Maslow's Hierarchy of Needs (Maslow, 1943, 1954), as he believed that learning could not occur until an individual had their basic (physiological and safety needs) met, and that learning was accelerated if students also felt a sense of love/belonging, had their self-esteem needs met and were actively working towards self-actualization at the apex of his needs model. The nature-based school emphasizes the educational paradigm of a 'love-based education', which would imply that the school seeks to meet all prerequisite student needs. Furthermore, the practice of teaching students to become comfortable with both physical and cognitive discomfort would support the development of resilience to maintain relatively managed needs, thereby supporting learning despite a challenging circumstance (such as sitting with a wet sock). Gialamas et al. (2014) report that childcare is both structural and procedural in nature; that is, structural processes such as staff-to-student ratios, as well as the nature of the relationships between staff and students combine to shape a child's experience at school. Research has found that a child's physical environment (Cicchetti & Toth, 1995) has significant effects on both socioemotional and behavioral development. Iznardo et al. (2023) additionally found that a strong, positive student-teacher relationship serves as a protective factor to support resilience in the classroom. The nature-based school placed significant emphasis on warm, responsive student-teacher relationships and is structured in a way that students have access to many adults. For example, each student has a morning meeting teacher and then may have multiple teachers for afternoon programming. These teachers remain available to the student as they progress through the

entirety of the school's program, allowing for the extended development of meaningful relationships. Administratively, there was emphasis placed on staff retention and comprehensive teacher mentorship to facilitate the love-based educational paradigm and create strong, supportive connections between staff members which in turn facilitate strong student-staff relationships. Alumni participants spoke fondly of their former teachers, noting that they continue to seek them out, suggesting support for the school's model.

Attachment & Place Theory.

Repeatedly throughout the dissertation study, participants referred to the importance of close connections with each other, as well as a sense of connection to the school and its ancestral land. Bowlby's Attachment Theory (Bowlby, 1982; Langlois, 2017) explicitly describes the developmental importance of connection between a child and caregiver to support healthy attachment and emotional growth. Lawrence (2022) further suggests that positive attachment to caregivers in academic settings, such as teachers or coaches, can support the development of a more secure attachment style and facilitate greater levels of personal resilience, essential for both academic and interpersonal relationships. Study participants discussed both intentional school structures, such as small classes and multi-age classes, as well as cultural components such as emphasizing relationships and focusing on individual student needs. All of these elements would support the development of multiple, healthy attachments between school community members.

Further drawing upon the work of Bowlby and Ainsworth, *place attachment* is the combined knowledge, beliefs, behaviors and actions that create an affiliation for a particular setting (Scannell & Gifford, 2010). According to Sobel (2002), place attachment supports a child's central task of exploring and learning about themselves while developing an affinity with a specific environment. Place attachment was evident in student participants' discussions of individual spaces within their group's boundaries; for instance, the space one group calls Woodville is a well-established, fondly discussed community seen as a rite of passage for students to participate in. Both alumni and staff participants actively identified the school as a special place to be, and a space in which alumni regularly return to visit. Each alumni participant also noted opting to spend time outdoors, finding it restorative; this supports the notion that because nature provides endless patterns, place attachment to outdoor spaces allows people to revisit fond memories and experiences through their lives (Chawla, 2019).

Wellness.

Myers et al. (2000) defines wellness as "a way of life oriented toward optimal health and well-being, in which body, mind and spirit are integrated by the individual to live life more fully within the human and natural community". Based on participant interviews and individual observations, the data suggests that for students, a nature-based school more strongly aligns with a more balanced approach to living which increases individual wellness. Participants alluded to the culture of the school emphasizing individual needs and prioritizing relationships, both which may contribute to an increased

sense of wellbeing in all community members. Furthermore, the school's structure affords both children and adults a significant amount of time in nature, which may further support an individual's sense of wellness (Chawla, 2015). It was interesting that this school does not have any social work or counseling program. Initially, I attributed this to the small size of the school; however, based on my data I now wonder if this is better explained by the integration of socioemotional learning and close interpersonal relationships embedded within this school serving similar functions to a school counseling program.

Engagement with Nature.

This study featured extensive conversation about the perceived benefits and detriments of both children and adults engaging with the natural world. The results described herein continue to support existing research describing the numerous cognitive, physical and socioemotional benefits for all ages (Khan, 1997; Menardo et al., 2021). The descriptions of students' various activities and experiences in nature within the study provide exemplary models of children using their senses in a feedback process to create meaningful neural networks (Schauman, 2013) and engage in perceptual learning (Gibson & Gibson, 1955). Student and adult participants actively described the various affordances students encountered in nature around their school (Kytä, 2002) as vehicles for the development of self-awareness and resiliency, which can then be applied towards the challenges of academic learning. Student participants described their personal enjoyment and awareness of environmental needs, suggesting the development of an

ecological identity (Barrable & Booth, 2020; Green et al., 2016). Additionally, participants described the restorative benefits of spending time outdoors in between learning tasks, which anecdotally supports Ulrich's Stress Reduction Theory (1991) and Kaplan's (1995) Attention Restoration Theory.

Practical Implications

School-Based Implications.

In comparing this nature-based school to traditional public school models, there are a glaring number of differences. According to the National Center for Education Statistics (2025), the average elementary school class size in public schools is 23.7 students. In comparison, the groups at the nature-based school ranged from 7-13 students, respectively. According to the American Federation of Teachers (AFT) (2010), research supports that small class sizes have a positive effect for student achievement and a particularly strong impact on the education of disadvantaged children. Therefore, this organization recommends elementary classes are capped between 15-19 students. Smaller class sizes, such as described within this study, would naturally support greater individualization of learning and support the development and nurturance of stronger student/teacher relationships (Bradley & Vandell, 2007; Cryer, 1999). This suggestion is supported by the evidence provided within this dissertation.

This study highlights the perceived significant impacts of a school's culture on daily staff and student experiences. In considering the development of school culture, based on the data within this study it is recommended that school administrators carefully consider the ways of being, doing and interacting they would like their staff to emulate towards one another as well as the student body. School administrators should also consider how to develop a strong measure of continuity between staff over time. Participants repeatedly described the need for individualized education, and for teachers to "follow the child". This tenet may be lost in educational systems that have to prioritize achievement on standardized testing, especially when these systems are not physically or financially designed to accommodate the number of students they have. This study also called into question best practices for students to engage in socioemotional learning; should it be an explicit period of instruction, as many public school districts often adopt, or a more implicit practice infused into the school culture? And if the latter, how do schools within the same district strive to develop and maintain complementary cultures?

Finally, much of the discussion surrounding the nature-based school's academics included an emphasis on experiential learning, multi-age learning and significant amounts of unstructured playtime outdoors, all of which were purported to support whole-child development including leadership skills and resiliency. Unstructured time outdoors in particular was identified through the study as a key factor in assisting students in sustaining focus and on-task behaviors for academic work. However, current curricular mandates and funding limitations would prevent the implementation of experiential learning and significant amounts of unstructured playtime in public schools

on the same scale. Many schools lack the type of access to untouched nature that is featured within the nature-based school, with access instead to man-made playgrounds or menial outdoor spaces. This glaring deficiency is particularly evident in urban communities, making student access to nature and its associated benefits a social justice concern (Chawla, 2015). Furthermore, the current public school system of organizing children based on chronological age complicates significant student integration for the same sort of multi-age learning as featured within the nature-based school. However, the case can be made that educational systems derived from the business practices of the Industrial Revolution (Braster & del Pozo Andrés, 2020) could and should be explored, challenged and updated to reflect best practices in education.

School Counseling & Mental Health Counseling Implications.

While the nature-based school did not have a formal school counselor nor counseling program due to the apparent lack of need for one, the collected data nevertheless has implications for the counseling profession. Given the ample research regarding the benefits of nature on children's mental health (Kahn, 1997), it stands to reason that both school and community mental health counselors should incorporate the natural world into their work with children and adolescents.

Firstly, along similar lines to the recommended reduction in class sizes for teachers, so too would school counselors benefit from smaller caseloads to support the development of rapport with students/clients and increase individualization of services.

Flom et al. (2011) identify the four essential tasks of a school counselor as follows: defining a counseling program aligned with the school's mission and vision, managing organizational assessments and tools, delivering direct services to students, and then assessing data to analyze outcomes. Elements of nature could be incorporated into each of these tasks. For example, school counselors first need to conduct needs assessments of students to define the scope of their program. If a school counselor chose to utilize ASCA's Mindsets & Behaviors: Program Planning Tool (ASCA, 2020) to assess student functioning, nature could be included into each of the four subcategories (mindsets, learning strategies, self-management skills, and social skills) as either an integrated element or a means to achieve a mindset or behavior. For instance, the *M3* standard reads, "Sense of belonging in school environment" (ASCA, 2020); this could be amended to "Sense of belonging in school environment and natural world", adjusting the focus to include a broader sense of student connection. Other standards, meanwhile, could be left defined as is, yet achieved via the incorporation of nature-based interventions. For example, as this dissertation suggests, the *B-SMS 2* standard on the Program Planning Tool refers to development of self-discipline and self-control. Nature-based activities that facilitate a mind/body connection and require students to manage their responses, such as caring for an animal, going on a nature walk, etc., would support growth towards this standard. School counselors could adopt additional comprehensive wellness assessment measures, such as Reese's (2019) EcoWellness assessment, to conceptualize student functioning based on their access to environments in a more standardized way and utilize the data to develop outdoor interventions suitable to their school environment and student

need. This study's data suggests additional counselor inquiry and assessment regarding the meaningful relationships the student holds, their perceived academic experiences and their ability to self-regulate would provide significant insight regarding a student's physical, cognitive and emotional states. Assessments focusing on whole-person development and the subsequent data analysis would support the school counselor's tasks of evaluating counseling program effectiveness, as well as informing adjustments to curriculum and the development of data-driven action plans. School counselors could also use this data in part when advocating for changes within the school; for example, if a school counselor wanted to encourage administration to add additional recess, justify the addition of school gardens or add natural playscapes to the playground. The fourth task of a school counselor focuses on direct and indirect services for students, including instruction, counseling, consultation, and referrals (Flom et al., 2011). Especially for younger children, both unstructured and structured activities in nature, including free play, could be incorporated into direct school counseling services for students based on student interest and identified need for skill development. As observed within this dissertation, older students may also benefit from the opportunity to simply spend some unstructured time outside, either independently or with peers, to reset from the pressures of academic work. School counselors could facilitate outdoor-based skills groups centered on supporting the school's local ecology, nature-based service projects, school gardens, etc., or simply swap out activities within currently utilized curriculum for a nature-based activity to support students spending time outside. Conversely, nature-based activities held indoors (such as hydroponic gardening, live plants, class pets, etc.), could

also support the facilitation of wellness and serve as vehicles to teach skills such as self-regulation and collaboration for students of all ages in both individual and group formats, thereby improving mental health outcomes.

Meanwhile, a community mental health counselor's tasks are generally composed of a comprehensive client intake, assessment and diagnosis of client concerns, and then delivery of tailored interventions to support a client's treatment goals. Much like school counselors, some community agencies may benefit from an adjustment in caseloads to support a counselor's ability to focus on each individual client. Mental health counselors could certainly incorporate discussion of nature into each stage of the counseling process. To start, these counselors could include specific questions in a client intake regarding a client's level of interest and engagement with nature. Such questions would function as part of a comprehensive wellness assessment and interest inventory to support the development of individualized interventions. As mentioned previously, counselors could also choose to include nature-specific assessments into their intake process. Once treatment goals have been identified for a client, mental health counselors could opt to utilize a variety of green interventions to support client growth contingent on the space and resources available to them. Sempik et al. (2014) describe a variety of ecotherapeutic activities on a continuum; therapy interventions can occur *in* nature (such as green exercise, mindful meditation, artmaking, etc.), or therapy interventions could occur in direct contact *with* nature, such as gardening, animal-assisted therapy, etc. It is worth noting that many nature-focused interventions can be adapted to fit any counseling environment while still allowing clients to develop a supportive relationship with their

counselor, explore positive change and develop key tools for self-regulation, resiliency and overall wellness.

Future Directions for Research

Given the relatively sparse literature available in this area, multiple directions for future research can be identified. This study could be replicated with other similar programs, utilizing the same research protocol, to allow for comparison in experiences. Or, the same research protocol could be implemented in various kinds of nature-based programs, with the intention of understanding if the same kinds of benefits are perceived to be achieved. Furthermore, additional research featuring quantitative or mixed methods methodology to measure student's emotional wellness and/or self-regulatory behaviors within nature-based schools and compare nature-based schools to other school models should be explored.

Strengths & Limitations of the Study

Identified Strengths of this Dissertation

I believe that there are several strengths to this research study's design and implementation. Firstly, this study accurately sought to address a major gap in the literature by seeking to learn about the perspectives of students, staff and alumni in nature-based schools; while engaging in my literature review I did not encounter many

articles featuring comprehensive nature-based educational programs for elementary and secondary students, and I did find *any* articles featuring alumni of nature-based programs. This study sought to explore the perceived impact of nature-based education on individual student self-regulation and wellness, a unique topic with substantial implications for our understanding of best practices in education. This study also sought to create a more operational definition of nature-based school that allows for cultural variability, which may support creating a more common language for future research endeavors. I purposely designed a qualitative protocol that could be replicated in other school settings, to support further data collection and the creation of a broader picture of nature-based education which is currently lacking in the available literature. With regards to data analysis, I employed multiple measures to support the trustworthiness and credibility of the data.

Identified Limitations of this Dissertation

As with any study, it is important to recognize the potential limitations of the research, both to contextualize the study's significance and identify future directions for research. This study was conducted within one unique school and with one specific population of children. Therefore, the results will not be broadly generalizable to other nature-based schools or other student populations. However, this study's methodology could be replicated elsewhere and the results between schools compared. While the study continued until saturation was achieved, all participants were actively engaged with the school and viewed the school favorably; it may be that there are families who have had a

negative experience with this type of education that the study does *not* include, which then creates bias in the data. Despite the reported positive perception of integrating nature into the school day, the reader cannot definitively conclude that access to nature is the exclusive component to improved self-regulatory behaviors. Another set of limitations may be reflected in the data analysis process. In being a dissertation, the research and analysis team is a party of one; a qualitative study's trustworthiness is inherently enhanced with a multi-person research team (Lincoln & Guba, 1985). I attempted to mitigate the effects of personal bias and potential errors via bracketing, reflexive journaling and the use of outside auditors to review my analyses. I additionally offered adult participants to engage in member-checking their data, but only received three responses. Therefore, it could be that there are errors in my interpretations. Furthermore, since I did choose to include data from the pilot study conducted two years prior, it is possible that some of this data may be wholly accurate to those participants' lived experiences now, and/or the pilot data could have influenced my own thinking and interpretations of the current data.

Conclusive Summary

My dissertation research study sought to explore the lived experiences of current students, alumni, parents and staff of K-8 nature-based schools while addressing some of the current gaps within the existing literature. The results revealed two central significant theme clusters with six central themes. Nature was perceived to be an essential ingredient in whole-person development, functioning as a primary source of learning about self and

facilitating the development of resiliency. This foundational learning then scaffolds interpersonal relationships with others, as well as facilitates key skills for academic learning. The school itself is structurally developed to support the seamless integration of nature into academics, while featuring additional cultural norms to facilitate close teacher/student relationships and individualized learning.

These results reinforce current research regarding educational theory and the benefits of nature on children's cognitive and social development. While a multitude of educational models exist that incorporate nature in some capacity, this study allowed for an in-depth exploration of a fully integrated K-8 nature-based school experience and the perceived implication of including nature on a fundamental level within a school setting. My dissertation strengthens the case to increase, not reduce, the amount of unstructured outdoor play afforded to students in a variety of educational settings. Furthermore, it also suggests that the culture of a school should strive to be individualized and child-led, rather than mass manufactured. This dissertation study has multiple implications for educators and mental health professionals, policy makers, and any individual invested in comprehensive whole-person development.

APPENDIX A
INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL



Date: September 16, 2025

Study #: IRB-FY2026-18

Study Title: The Natural Roots of Regulation: A Qualitative Phenomenological Study of Kindergarten-Eighth Grade Nature-Based Schools and Their Perceived Effects on Self-Regulation and Wellness

Submission Type: Initial

IRB Decision: Approved

Research Team:

Kaitlin Farver

Lisa Hawley

Based on applicable federal regulations, the above referenced study has been determined to involve no more than minimal risk to participants and to be Approved, with the following expedited categories:

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

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. [45 CFR 46.101\(b\)\(2\)](#) and (b)(3).

This listing refers only to research that is not exempt.)

This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Notes for Researcher(s):

This submission includes the following approved documents:

- Recruitment Email

Consent Documents:

- Observation Consent Form for Research V. 9/16/2026
- Observation Consent Letter V. 9/16/2026
- Oral Consent Script for Children V. 9/16/2026
- Adult Consent Form for Research V. 9/16/2026
- Parent Consent Form for Research V. 9/16/2026

Data Collection Instruments:

- Survey
- Individual and Group Interview Questions
- Observation Protocol
- Permission Letter from School
- Research Risk Table

Letter and Consent Document:

This letter along with the IRB approved (date-stamped) consent document can be found in Cayuse in the [Submission Details](#) page under [Letters](#) and [Attachments](#), respectively.

The IRB approved version of the consent document must be used in consenting participants. Federal regulations require that each participant receive a copy of the consent document unless a waiver is granted by the IRB. Signed consent forms must be retained for a minimum of three years after the completion of the project. Please remember that informed consent is a process that continues throughout the project, starting with recruitment and assurance of participant understanding of the project, and followed by a signed consent form when applicable.

Permission from Research Sites:

Please note the following:

- This IRB approval letter means that the research has met the federal criteria for approval per 45 CFR 46.111 Criteria for IRB Approval of Research.
- Before the research is initiated, permission to conduct research at a given site must be obtained from all research locations listed in the IRB submission. You must keep copies of all such permission letters for your records.
- It is the responsibility of each researcher to follow all applicable policies and procedures of any outside institution where the research will be conducted.

Modifications:

Any changes to the approved project must be approved by the IRB prior to initiation by submitting a MODIFICATION request. Do not collect data while the changes are being reviewed. Data collected during this time cannot be used in research.

Incidents:

All unanticipated problems involving risks to participants or others, serious and unexpected adverse events, non-compliance issues and/or serious complaints regarding this project must be reported promptly to the IRB by submitting an INCIDENT report.

You are approved to start the research. Please retain a copy of this notification for your records.

If you have any questions, please contact the IRB office.

Thank you.

The Oakland University IRB

APPENDIX B
EMAIL INVITATIONS

Hello,

My name is Kaitlin Farver, and I am a doctoral candidate at Oakland University, as well as a licensed professional counselor in private practice in SE Michigan, working under the direction of Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University.

Currently, I am conducting a qualitative research study which seeks to discover the lived experiences of students, parents, staff members and alumni at K-8 nature-based nontraditional schools. I am looking forward to better understanding how these programs impact the education, mental health, self-regulation and wellness of both current and former students.

If you could kindly consider completing this 20-minute survey, and/or sharing with anyone else you know who may fit this description, it would be most sincerely appreciated:

https://oakland.az1.qualtrics.com/jfe/form/SV_9BvblwhJ59kXl4O

Please let me know if you have additional questions or concerns.

With appreciation,

Kaitlin Farver

she/her/hers

MA, LPC, NCC, CHAIS, CCTP-II, CIMHP

Doctoral Student, Oakland University

September 2025

Dear Parents and Guardians,

My name is Kaitlin Farver, and I am a student at Oakland University under the direction of Dr. Lisa Hawley in the Department of Counseling. I am presently completing research for my current dissertation, titled *The Natural Roots of Regulation: A Qualitative Phenomenological Study of Kindergarten-Eighth Grade Nature-Based Schools and Their Perceived Effects on Self-Regulation and Wellness*.

As part of my study, I am collaborating with Rob Himburg and Upland Hills School to conduct onsite observations of typical school days. These observations will seek to be minimally disruptive to your child's school day. These observations will include notetaking regarding teaching and learning, as well as student behaviors and may include brief communication with students about their learning. Students, if identified in the notes, will be identified by first name only. This information will be securely stored in cloud storage in my home computer, and destroyed upon completion of this investigation.

However, your decision to give permission for your child to participate in this study in any fashion is voluntary. Your child does not have to participate in this study and can opt out at any time if they feel uncomfortable. Your decision will not affect your present or future relationship with Oakland University, the researcher, the Department of Counseling, or the Department of Human Development and Child Studies.

If you have questions regarding this study, you may contact myself or my advisor:

Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II

Doctoral Student, Oakland University

kepatrzalek@oakland.edu

586-244-2539

Under advisement of

Dr. Lisa Hawley, PhD

Professor in the Department of Counseling at Oakland University

hawley@oakland.edu

(248) 370-2841

For questions regarding your rights as a participant in human subject research, you may contact the Oakland University Institutional Review Board, 248-370-4898.

_____ I *do* give consent for my child to participate in observations conducted for this study.

_____ I do *NOT* give consent for my child to participate in observations conducted for this study.

Name of
Child(ren): _____

Name of
Parent/Guardian: _____

Date: _____

APPENDIX C

INFORMED CONSENTS

Adult Consent Form for Research

The Natural Roots of Regulation: A Qualitative Phenomenological Study of Kindergarten-Eighth Grade Nature-Based Schools and Their Perceived Effects on Self-Regulation and Wellness.

Introduction

You are being asked to be in a research study that is being done by Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II, Doctoral Student in the Department of Counseling at Oakland University under the direction of Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University, the faculty advisor for this project.

Your decision to participate in this study is voluntary. You can choose to stop your participation at any time or skip any part of the study if you are not comfortable. Your decision will not affect your present or future relationship with Oakland University, the researcher, the Department of Counseling, or the Department of Human Development and Child Studies.

What is the purpose of this study?

The purpose of this research study is to examine the lived experiences of current and former students, parents, staff and alumni of a K-8 nature-based school.

Who can participate in this study?

You are being asked to participate because you are a former student over the age of 18,

parent of a current student of a K-8 nature-based school, or staff member of a K-8 nature-based school.

How long will I be in the study?

Participation in this study will include an online survey that will take about 20-30 minutes. Additionally, there is the option to participate in one individual or group interview, conducted either in person or via Zoom. Individual interviews are expected to take about 60 minutes; group interviews may take up to 90 minutes. If you complete an individual or group interview, you will also have the option to review the transcript of the interview to support the trustworthiness of the study, which is expected to take an additional 20-30 minutes. Completion of the survey and individual interview by adult participants will take approximately 80-90 minutes, over a period of 1-2 months. Completion of the survey, individual interview, and transcript review (member checking), by adult participants will take approximately 100-120 minutes, over a period of 1-2 months. Completion of the survey, individual interview and group interview will take approximately 170-180 minutes, over a period of 1-2 months. Completion of the survey, individual interview, group interview, and member checking, by adult participants will take approximately 190-210 minutes, over a period of 1-2 months. Completion of the survey and group interview will take approximately 110-120 minutes, over a period of 1-2 months. Completion of the survey, group interview and transcript review (member checking) will take approximately 140-150 minutes, over a period of 1-2 months.

If interested, parents will receive separate consent forms for current student(s) to participate in individual, developmentally appropriate interviews. A school-wide letter regarding class observations will be sent home; parents may opt out of having their student observed during their typical school day.

Where will this study take place?

This study will take place online, as well as in a K-8 nature-based school. If you elect to participate in individual or group interviews, this study may also take place at an additional time and place of your choosing.

What do I have to do?

You will be asked to share your thoughts and experiences regarding your experiences through the completion of the online survey. You may opt to participate in an individual interview, or a group interview either in person or online via Zoom. If you have current students, you may opt to provide consent for them to participate in an interview and/or observations within the K-8 nature-based school. If you are a teacher at a K-8 nature-based school, you may opt to have your classroom observed for this study. At the end of the survey, you will be asked to provide your contact information if you would like to participate in any additional task in the study. Any interviews conducted will be audio recorded and transcribed for the purpose of reference during the data evaluation process. If on Zoom, please note the video will be recorded and saved for the purposes of transcription. Once analyzed, transcriptions will be returned to you for confirmation of accuracy (a process known as ‘member checking’). Transcripts will be retained until the completion of the study, at which time they will be destroyed.

Are there any risks to me?

With many research studies, there is a risk that someone who is not part of this research may accidentally see your personal information. Safeguards will be in place to minimize this risk by keeping your research records as confidential as possible. When the results of this research are published or presented at conferences, no information will be included that personally identifies you.

Audio and/or video recordings will be securely stored and destroyed upon completion of the investigation.

Only first names will be used during the interview process. No group member should tell anyone outside the group anything that was said during the group session. However, we cannot guarantee that any information discussed in the group will be kept private.

Are there any benefits to me?

Although there may be no direct benefits to you, the results of this study may benefit others in the future.

Will I receive anything for participating?

You will not receive anything for participating in this study.

Who could see my information?

Your research records may be shared and reviewed by the following groups: •

Representatives of the Oakland University Institutional Review Board and/or other

regulatory compliance staff, whose job is to protect people who are in research studies. • Regulatory authorities who oversee research (Office for Human Research Protections, or other federal, state, or international regulatory agencies) De-identified data may be used or distributed to another investigator for future research use without additional informed consent from you.

Who do I contact if I have questions about this study?

Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II Doctoral Student, Oakland University
kepatrzalek@oakland.edu 586-244-2539

Under advisement of

Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University
hawley@oakland.edu (248) 370-2841

For questions regarding your rights as a participant in human subject research, you may contact the Oakland University Institutional Review Board, 248-370-4898.

Signing the consent form

Checking 'I agree to participate in this research study' below means that you have read this form, or someone has read it to you and you agree to participate in this study.

Parent Consent Form for Research

The Natural Roots of Regulation: A Qualitative Phenomenological Study of Kindergarten-Eighth Grade Nature-Based Schools and Their Perceived Effects on Self-Regulation and Wellness.

Introduction

You are being asked to give permission for your child to participate in a research study that is being done by Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II, Doctoral Student in the Department of Counseling at Oakland University under the direction of Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University, the faculty advisor for this project.

Your decision to give permission for your child to participate in this study is voluntary. Your child does not have to be in this study. You and/or your child can choose to stop your participation at any time or skip any part of the study if you or your child are not comfortable. Your decision will not affect your present or future relationship with Oakland University, the researcher, the Department of Counseling, or the Department of Human Development and Child Studies.

What is the purpose of this study?

The purpose of this research study is to examine the lived experiences of current and former students, parents, staff and alumni of a K-8 nature-based school.

Who can participate in this study?

Your child is being asked to participate in this study because they are a current student at a K-8 nature-based school.

How long will my child be in the study?

Participation in this study will include an individual interview that will take about 20-45 minutes, with an additional 15-20 minutes requested later to check each analyzed transcript for accuracy ('member checking'). Researchers may ask to observe your child's classroom, which will take no additional time from them or their academic learning. A school-wide letter regarding class observations will be sent home; parents may opt out of having their student observed during their typical school day. Completion of the interview and member checking will take approximately 35-65 minutes, over a period of 1-2 months.

Where will this study take place?

This study will take place online via Zoom, as well as in a K-8 nature-based school. If you elect for your child to participate in individual interviews or group observation, this study may also take place at an additional time and place of your choosing.

What will my child have to do?

Your child will be asked to share their thoughts about school in a developmentally appropriate way (verbally, or via drawings, child-led photographs, etc.). Oral interviews will be recorded (audio only) for the purpose of playback reference. Interviews conducted via Zoom will have the entire (audio/video) clip saved for the purposes of transcription. Once analyzed, transcriptions will be returned to you or your student for confirmation of accuracy (a process known as 'member checking'). Additionally, your child may be a part of observations conducted by the researcher during a typical school day. These

observations may include the researcher taking photographs of learning activities and settings. No identifiable features of your child (such as faces) will be included.

You or your child can opt to stop participation at any time. Each child's documents will be given a code name and securely stored within the principal investigator's cloud storage system and destroyed upon completion of the investigation.

Are there any risks to my child?

With many research studies, there is a risk that someone who is not part of this research may accidentally see your child's personal information. Safeguards will be in place to minimize this risk by keeping your research records as confidential as possible. When the results of this research are published or presented at conferences, no information will be included that personally identifies you or your child.

Audio and/or video recordings, photographs, and observation notes will be securely stored and destroyed upon completion of the investigation.

Only first names will be used during the interview process.

Are there any benefits to me?

Although there may be no direct benefits to your child, the results of this study may benefit others in the future.

Will my child receive anything for participating?

Your child will not receive anything for participating in this study.

Who could see my child's information?

Your research records may be shared and reviewed by the following groups:

- Representatives of the Oakland University Institutional Review Board and/or other regulatory compliance staff, whose job is to protect people who are in research studies.

- Regulatory authorities who oversee research (Office for Human Research Protections, or other federal, state, or international regulatory agencies) De-identified data may be used or distributed to another investigator for future research use without additional informed consent from you. **Who do I contact if I have questions about this study?**

Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II Doctoral Student, Oakland University
kepatrzalek@oakland.edu 586-244-2539

Under advisement of

Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University
hawley@oakland.edu (248) 370-2841

For questions regarding your rights as a participant in human subject research, you may contact the Oakland University Institutional Review Board, 248-370-4898.

Signing the consent form

Your signature below means that you have read this form, or someone has read it to you and you agree to participate in this study.

You are not giving up any legal rights by signing this consent form. You will be given a copy of this form.

_____ **Print name of parent**

_____ **Signature of parent**

Date

Consent Form for Research (Staff Observations Version)

The Natural Roots of Regulation: A Qualitative Phenomenological Study of Kindergarten-Eighth Grade Nature-Based Schools and Their Perceived Effects on Self-Regulation and Wellness.

Introduction

You are being asked to be in a research study that is being done by Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II, Doctoral Student in the Department of Counseling at Oakland University under the direction of Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University, the faculty advisor for this project.

Your decision to participate in this study is voluntary. You can choose to stop your participation at any time or skip any part of the study if you are not comfortable. Your decision will not affect your present or future relationship with Oakland University, the researcher, the Department of Counseling, or the Department of Human Development and Child Studies.

What is the purpose of this study?

The purpose of this research study is to examine the lived experiences of current and former students, parents, staff and alumni of a K-8 nature-based school.

Who can participate in this study?

You are being asked to participate because you are a staff member of a K-8 nature-based school.

How long will I be in the study?

The observation portion of this study will take place over several field visits conducted

during the school day over a period of one to two months. The purpose of these observations is to understand teaching and learning practices, as well as the school culture. These observations will not require any additional time from you. A general notification letter will be sent to families detailing these observations, with the option to dissent if they do not wish for their child to be included. Professional staff who volunteer to have their classrooms observed will coordinate convenient times for researchers to visit.

Where will this study take place?

Observations will take place during the school day, directly within the school and on school grounds during times convenient for staff.

What do I have to do?

You will be asked to allow your class(es) to be observed. Photographs of a typical school day may be requested from the teacher or taken by the researcher for additional reference during the data evaluation process. These photographs will focus on learning tasks and outcomes, and not include any individual faces or clear identifying features.

Are there any risks to me?

With many research studies, there is a risk that someone who is not part of this research may accidentally see your personal information. Safeguards will be in place to minimize this risk by keeping your research records as confidential as possible. When the results of this research are published or presented at conferences, no information will be included that personally identifies you.

Photographs and observation notes will be securely stored and destroyed upon

completion of the investigation.

Observational research notes will include data regarding what the researcher sees and hears during the visit, such as a classroom's physical features, the lesson plan, learning activities, and interpersonal interactions. Only first names will be included within the observational notes, which will be changed to pseudonyms during the analysis phase of research.

Are there any benefits to me?

Although there may be no direct benefits to you, the results of this study may benefit others in the future.

Will I receive anything for participating?

You will not receive anything for participating in this study.

Who could see my information?

Your research records may be shared and reviewed by the following groups:

- Representatives of the Oakland University Institutional Review Board and/or other regulatory compliance staff, whose job is to protect people who are in research studies.
- Regulatory authorities who oversee research (Office for Human Research Protections, or other federal, state, or international regulatory agencies) De-identified data may be used or distributed to another investigator for future research use without additional

informed consent from you.

What if I want to stop participating in this study?

If you would like to stop participation at any time, you should contact the researcher.

Who do I contact if I have questions about this study?

Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II Doctoral Student, Oakland University

kepatrzalek@oakland.edu 586-244-2539

Under advisement of

Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University

hawley@oakland.edu (248) 370-2841

For questions regarding your rights as a participant in human subject research, you may contact the Oakland University Institutional Review Board, 248-370-4898.

Signing the consent form

Your signature below means that you have read this form, or someone has read it to you and you agree to participate in this study.

You are not giving up any legal rights by signing this consent form. You will be given a copy of this form.

_____ **Print name of participant**

_____ **Signature of participant**

Date

APPENDIX D
QUALTRICS SURVEY

Dissertation Survey

Start of Block: Default Question Block

Q1 Consent Form for Research The Natural Roots of Regulation: A Qualitative Phenomenological Study of Kindergarten-Eighth Grade Nature-Based Schools and Their Perceived Effects on Self-Regulation and Wellness. Introduction You are being asked to be in a research study that is being done by Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II, Doctoral Student in the Department of Counseling at Oakland University under the direction of Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University, the faculty advisor for this project. Your decision to participate in this study is voluntary. You can choose to stop your participation at any time or skip any part of the study if you are not comfortable. Your decision will not affect your present or future relationship with Oakland University, the researcher, the Department of Counseling, or the Department of Human Development and Child Studies. **What is the purpose of this study?** The purpose of this research study is to examine the lived experiences of current and former students, parents, staff and alumni of a K-8 nature-based school. **Who can participate in this study?** You are being asked to participate because you are a current and/or former student, parent or staff member of a K-8 nature-based school. **How long will I be in the study?** Participation in this study will include an

online survey that will take about 20 minutes. There is the option for hour-long individual or group interviews, as well as consent forms for your current student(s) to participate in individual interviews. Researchers may ask to observe your classroom, which will take no additional time from you. **Where will this study take place?** This study will take place online, as well as in a K-8 nature-based school. If you elect to participate in individual or group interviews, this study may also take place at an additional time and place of your choosing. **What do I have to do?** You will be asked to share your thoughts and experiences regarding your experiences through the completion of surveys. You may opt to participate in individual interviews, group interviews and observations. If you have current students, you may opt to provide consent for them to participate in interviews and/or observations within the K-8 nature-based school. Any interviews conducted will be transcribed and audio recorded for the purpose of reference during the data evaluation process. Photographs of a typical school day may be requested for additional reference during the data evaluation process; these photographs will only include individuals who have given appropriate consent to appear in media. **Are there any risks to me?** With many research studies, there is a risk that someone who is not part of this research may accidentally see your personal information. Safeguards will be in place to minimize this risk by keeping your research records as confidential as possible. When the results of this research are published or presented at conferences, no information will be included that personally identifies you. Audio and/or video recordings will be securely stored and destroyed upon completion of the investigation. Only first names will be used during the interview process. No group member should tell anyone outside the group anything that

was said during the group session. However, we cannot guarantee that any information discussed in the group will be kept private. **Are there any benefits to me?** Although there may be no direct benefits to you, the results of this study may benefit others in the future. **Will I receive anything for participating?** You will not receive anything for participating in this study. Who could see my information? Your research records may be shared and reviewed by the following groups: • Representatives of the Oakland University Institutional Review Board and/or other regulatory compliance staff, whose job is to protect people who are in research studies. • Regulatory authorities who oversee research (Office for Human Research Protections, or other federal, state, or international regulatory agencies) De-identified data may be used or distributed to another investigator for future research use without additional informed consent from you. **Who do I contact if I have questions about this study?** Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II Doctoral Student, Oakland University kepatrzalek@oakland.edu 586-244-2539 Under advisement of Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University hawley@oakland.edu (248) 370-2841 For questions regarding your rights as a participant in human subject research, you may contact the Oakland University Institutional Review Board, 248-370-4898. **Signing the consent form** Checking 'I agree to participate in this research study' below means that you have read this form, or someone has read it to you and you agree to participate in this study.

☐ I agree to participate in this research study. (1)

☐ I decline to participate in this research study (please exit the survey now). (2)

Skip To: End of Survey If Consent Form for Research The Natural Roots of Regulation:
A Qualitative Phenomenological Study o... = I decline to participate in this research study
(please exit the survey now).

Q2 How did you come to be associated with a K-8 nature-based school?

Q3 How do you integrate nature into your own life (i.e., live what you teach/believe?)

Q4 How do you/did you infuse nature into your personal experiences (such as teaching, mentoring, etc.) with students?

Q5 What academic benefits (or detriments) do/did you notice with the integration of nature into an academic curriculum?

Q6 What effects, if any, do/did you notice that nature-based connections have on whole child development?

Q8 What roles do you hold, or have you held at a K-8 nature-based school? Please select all that apply.

- ☐ Classroom Teacher (1)
- ☐ 'Specials' Teacher (2)
- ☐ Special Education Teacher (3)
- ☐ Paraprofessional (4)
- ☐ School Counselor or Social Worker (5)
- ☐ Administrator (6)
- ☐ Student (7)
- ☐ Parent/Family Member of Student (8)
- ☐ Alumni (9)

Q9 I identify with the following gender:

- ☐ Male (1)
- ☐ Female (2)

☐ Non-binary / third gender (3)

☐ Prefer not to say (4)

Q11 I am in the following age category:

☐ 18-29 (1)

☐ 30-39 (2)

☐ 40-49 (3)

☐ 50-59 (4)

☐ 60-69 (5)

☐ 70-79 (6)

☐ 80-89 (7)

☐ 90+ (8)

Q10 I identify with the following race/ethnicity:

☐ First Nations or Alaska Native (1)

☐ Asian (2)

☐ Black or African American (3)

☐ Hispanic or Latino (4)

☐ Native Hawaiian or Other Pacific Islander (5)

☐ White (Non Hispanic or Latino) (6)

☐ Other (7)

Q13 Would you be willing to be contacted to participate in additional components of this research study (interviews, focus groups, observations, etc.)? If so, please add your contact information below. Thank you for your consideration!

☐ Name: (1) _____

☐ Email: (2) _____

☐ Phone Number: (3) _____

Skip To: End of Survey If Condition: Name: Is Empty. Skip To: End of Survey.

Q12 Would you and your current K-8 student be willing to be contacted to participate in additional components of this research study (interviews, focus groups, etc.)? If so, please add your contact information below. Thank you for your consideration!

☐ Name: (1) _____

☐ Student's Name: (2) _____

☐ Student's Age/Teacher: (3)

☐ Email: (4) _____

☐ Phone Number: (5) _____

Skip To: End of Survey If Condition: Student's Name: Is Empty. Skip To: End of Survey.

Q13 Parent Consent Form for Research The Natural Roots of Regulation: A Qualitative Phenomenological Study of Kindergarten-Eighth Grade Nature-Based Schools and Their Perceived Effects on Self-Regulation and Wellness. Introduction

You are being asked to give permission for your child to participate in a research study that is being done by Kaitlin Farver, MA, LPC, NCC, CHAIS, CCTP-II, Doctoral Student in the Department of Counseling at Oakland University under the direction of Dr. Lisa Hawley, Professor in the Department of Counseling at Oakland University, the faculty advisor for this project. Your decision to give permission for your child to participate in this study is voluntary. Your child does not have to be in this study. You and/or your child can choose to stop your participation at any time or skip any part of the study if you or your child are not comfortable. Your decision will not affect your present or future relationship with Oakland University, the researcher, the Department of Counseling, or the Department of Human Development and Child Studies. **What is the purpose of this study?** The purpose of this research study is to examine the lived experiences of current and former students, parents, staff and alumni of a K-8 nature-based school. **Who can participate in this study?** Your child is being asked to participate in this student because they are current students at a K-8 nature-based school. **How long will my child be in the study?** Participation in this study will include an individual interview that will take about

20 minutes. Researchers may ask to observe your child's classroom, which will take no additional time from them or their academic learning. **Where will this study take place?** This study will take place online, as well as in a K-8 nature-based school. If you elect for your child to participate in individual interviews or group observation, this study may also take place at an additional time and place of your choosing. **What will my child have to do?** Your child will be asked to share their thoughts about school in a developmentally appropriate way (verbally, or via drawings, child-led photographs, etc.). Oral interviews will be recorded (audio only) for the purpose of playback reference. Additionally, your child may be a part of observations conducted by the researcher during a typical school day. Your child can opt to stop participation at any time. Each child's documents will be given a code name and securely stored within the principal investigator's cloud storage system, and destroyed upon completion of the the investigation. **Are there any risks to my child?** With many research studies, there is a risk that someone who is not part of this research may accidentally see your child's personal information. Safeguards will be in place to minimize this risk by keeping your research records as confidential as possible. When the results of this research are published or presented at conferences, no information will be included that personally identifies you or your child. Audio and/or video recordings will be securely stored and destroyed upon completion of the investigation. Only first names will be used during the interview process. No group member should tell anyone outside the group anything that was said during the group session. However, we cannot guarantee that any information discussed in the group will be kept private. **Are there any benefits to me?** Although

there may be no direct benefits to your child, the results of this study may benefit others in the future. **Will my child receive anything for participating?** Your child will not

receive anything for participating in this study. Who could see my child's information?

Your research records may be shared and reviewed by the following groups: •

Representatives of the Oakland University Institutional Review Board and/or other regulatory compliance staff, whose job is to protect people who are in research studies. •

Regulatory authorities who oversee research (Office for Human Research Protections, or other federal, state, or international regulatory agencies) De-identified data may be used

or distributed to another investigator for future research use without additional informed

consent from you. **Who do I contact if I have questions about this study?** Kaitlin

Farver, MA, LPC, NCC, CHAIS, CCTP-II Doctoral Student, Oakland University

kepatrzalek@oakland.edu 586-244-2539 Under advisement of Dr. Lisa Hawley, Professor

in the Department of Counseling at Oakland University hawley@oakland.edu (248) 370-

2841 For questions regarding your rights as a participant in human subject research, you

may contact the Oakland University Institutional Review Board, 248-370-4898. **Signing**

the consent form Checking 'I agree to participate in this research study' below means that

you have read this form, or someone has read it to you and you agree to participate in this

study.

☐ I agree for my child to participate in this research study. (1)

☐ I decline for my child to participate in this research study (please exit the survey now).

(2)

End of Block: Default Question Block

APPENDIX E
INTERVIEW PROTOCOLS

Dissertation- Individual Interview & Focus Group Protocol

For this dissertation study, my overarching question will be:

What are the lived experiences of K-8 students, alumni, staff and stakeholders in nature-based nontraditional schools?

The individual questions embedded within my data collection will seek to gather
information regarding the following concepts:

1. The lived experiences of participants at the identified nature-based school
2. Student, parent, staff and alumni perception of current and former students' abilities to self-regulate in multiple contexts
3. Observations of nature-based education with regards to self-regulation and wellness

Individual interviews will be conducted in a semi-structured format, to allow for flexibility in discussion. The questions for individual interviews and focus groups will remain the same, unless additional relevant questions emerge. Focus groups will be composed of like-

identified individuals (a staff group, a parent group, etc.) and scheduled if more appropriate/convenient for participants than individual interviews.

Individual Interview Protocol, Including Probes- Staff

- 1) Tell me about your professional journey, and how you came to be a professional staff member in a K-8 school that emphasizes connection with nature.
 - a. What specific training or professional development have you done around the integration of nature and academics?
- 2) How do you as a staff member integrate nature into your own life (in other words, how do you live what you teach?)
 - a. How does your school climate encourage you personally to connect with nature?
- 3) How do you infuse nature into your roles with students?
 - a. How do you choose what elements of your curriculum include nature?
- 4) What academic benefits or detriments do you notice with the integration of nature into the academic curriculum?
 - a. What about your socioemotional learning programs, or extracurriculars?
- 5) What effects, if any, do you notice that nature-based connections have on whole child development in your classroom?
- 6) What else is important for me to know about your experiences?
- 7) Tell me a little more about yourself:
 - a. What roles have you held and do you currently hold at a K-8 school that emphasizes nature?
 - b. How do you identify (gender, age, race/ethnicity)

Individual Interview Protocol, Including Probes- Parents

- 1) Tell me about your parenting journey, and how you decided to enroll your student(s) in a K-8 school that emphasizes connection with nature.
 - a. What made you choose this school, specifically?
- 2) How do you as a parent/family integrate nature into your own lives?
 - a. How does the school culture/community support engagement with nature for you personally, if at all?
- 3) What academic benefits or detriments do you notice with the integration of nature into the academic curriculum?
 - a. What about your students' socioemotional learning programs, or extracurriculars?
- 4) What effects, if any, do you notice that nature-based connections have on whole child development on your student?
- 5) What else is important for me to know about you and your students' experiences?
 - a. How do you engage in/support the school?
- 6) Tell me a little more about yourself:
 - a. In addition to being a parent of a student, what roles (if any) do you hold at school?
 - b. How do you identify (gender, age, race/ethnicity)

Individual Interview Protocol, Including Probes- Alumni

- 1) Tell me about your academic/professional journey?
 - a. How did you come to be a student at the school?
 - b. How long were you a student at the school, and what did your academic career look like afterward?
 - c. What has your professional career been?

- 2) How do you as an alumni integrate nature into your own life, if at all?
 - a. Did anything you learned/practiced at the school continue to be habits for you into adulthood?
- 3) What are important things you remember about your time as a student?
 - a. What parts of your learning include nature?
- 4) What academic benefits or detriments did you notice with the integration of nature into the academic curriculum?
 - a. What about your socioemotional learning programs, or extracurriculars?
- 5) What effects, if any, did you notice that nature-based connections have on whole child development?
- 6) What else is important for me to know about your experiences?
- 7) Tell me a little more about yourself:
 - a. Do you continue to engage at the school in any capacity?
 - b. How do you identify (gender, age, race/ethnicity)?

Individual Interview Protocol, Including Probes- Students

Please note that these questions may be modified or omitted as developmentally appropriate

- 1) Tell me about yourself (age, class, likes/dislikes, etc.)
- 2) How does nature appear in your life every day?
 - a. How does your class/school climate encourage you to connect with nature?
- 3) What are the positive parts about including nature in your learning? What about the negatives?

- 4) How do you practice feelings and getting along with others at school?
- 5) What else is important for me to know about your experiences?
- 6) Tell me a little more about yourself:
 - a. What else do you like to do outside of school?
 - b. How do you identify (gender, age, race/ethnicity)?

Dissertation- Observation Protocol

For this dissertation study, my overarching question will be:

What are the lived experiences of K-8 students, alumni, staff and stakeholders in nature-based nontraditional schools?

The individual questions embedded within my data collection will seek to gather information regarding the following concepts:

1. The lived experiences of participants at the identified nature-based school
2. Student, parent, staff and alumni perception of current and former students' abilities to self-regulate in multiple contexts
3. Observations of nature-based education with regards to self-regulation and wellness

Data to be Collected During Observations

Morning Meetings:

- Classroom design/layout/décor
- How academic subjects are structured/presented/taught
- Verbal and nonverbal interactions between students and teaching staff

- Verbal and nonverbal interactions between students

Recess/Unstructured Outdoor Time:

- Outdoor physical structures & features
- Verbal and nonverbal interactions between students and teaching staff
- Verbal and nonverbal interactions between students

Afternoon Classes/Electives:

- Classroom design/layout/décor
- How ‘elective’ subjects are structured/presented/taught
- Verbal and nonverbal interactions between students and teaching staff
- Verbal and nonverbal interactions between students

Data Collection Procedures

- Ongoing written notes/transcriptions of observations
- Photos that do *not* include identifiable features of individuals, such as empty classrooms, student work, etc.

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