Examining adolescent voices in urban montessorianism within the third plane of development.

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EXAMINING ADOLESCENT VOICES IN URBAN MONTESSORIANISM WITHIN THE THIRD PLANE OF DEVELOPMENT

By

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B.M.E., University of Louisville, 2005
M.Ed., University of Louisville, 2011

A Dissertation
Submitted to the Faculty of the
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A Dissertation Approved on

April 12, 2022

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Dr. Deborah Powers (Chair)

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Dr. W. Kyle Ingle

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Dr. Tom Tretter

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Dr. Marco Munoz
DEDICATION

This dissertation is dedicated to my great-grandparents who were denied formal education due to their race and/or poverty. This dissertation is also dedicated to my grandparents. Despite their varying levels of educational attainment, Charles Graham (8th-grade education), Mary Graham (GED at age 68), Reverend Illinois Green (Bachelor of Theology at age 66), and Azie Green (4th-grade education) believed in the transformative power of education and set the expectation of achievement in our family. Finally, this dissertation is dedicated to my children, Eli, Madison, Azie, and Luke. I pray they continue our family tradition of leveraging education to make a positive impact in the world.
ACKNOWLEDGMENTS

I would like to acknowledge my chair, Dr. Powers, and the committee. I would not be here without your guidance, patience, and support. Each of you played a significant role in my academic and professional growth. Thank you.

I also want to acknowledge the students, parents, faculty, staff, and district support personnel who helped make the Central Montessori program a reality. You paved the way for those who follow us.

I want to acknowledge my parents, Alphaeus Green, Sr., and Yolanda Green, who earned degrees while working full-time and raising a family. You taught me that sacrifices for the right things are always worth it.

Finally, I want to acknowledge my wife, Julia Green. I cannot imagine where my life would be without you, let alone completing this degree. You are my everything.
Although there is a significant body of research surrounding Montessori education, little research has sought to capture the voices of adolescents, specifically high school students in urban settings (Dr. Montessori’s third plane of development) learning through the Montessori Method. **Problem:** Legislators, policy writers, district and school-level leaders mandate and implement reforms with minimal to no adolescent input. Further, adolescents are not part of the reform implementation process or identifying desired outcomes of said reform initiatives. **Purpose:** The purpose of this study was to examine adolescent’s perspective of their urban high school Montessori education, and their role in helping to develop a high school Montessori program in an urban setting. **Research Design:** This case study recorded and examined the voices of 11 high school students in an urban high school who completed high school Montessori schooling. Data in this research study consisted of semi-structured interviews and documents. Responses were coded into themes and interpreted through the lens Dr. Montessori’s four planes of development, with particular attention to the third plane. **Findings:** Participants in this study understand key differences between the Montessori method and traditional schooling. However, the path to that understanding was the result of one-off experiences for some students and programmatic, structured experiences for all students. Further, findings suggest that student input varied through program
implementation, but was a key factor in program growth. **Research Implications:**

Results from this study may offer insight into the benefits and liabilities of seeking student input when designing high school reform, and more specifically, urban students, teachers, and administrators implementing adolescent Montessori programs. These results may be used to engage teachers, principals, and policy writers around reform practices and policies that benefit student experiences and outcomes.

**Research Questions**

1. From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?

2. From the adolescent’s perspective, how well were the Montessori concepts of Erdkinder brought to reality in an urban setting?

3. In what ways were student Agency evident in developing the urban high school Montessori program?
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CHAPTER ONE: INTRODUCTION

Background

Although there is a significant body of research of Montessori education, little research has sought to capture the voices of adolescents, specifically high school students in urban settings learning through Dr. Montessori’s third plane of development of the Montessori Method. The purpose of my study was to examine adolescent’s perspective of their urban high school Montessori education, and their role in helping to develop a high school Montessori program in an urban setting.

The Montessori Method of education is rooted in student voice, student agency, and student ownership of learning (Montessori, 1912). Moreover, Montessori purported that, “the fundamental principle of scientific pedagogy must be, indeed, the liberty of the pupil; - such liberty as shall permit a development of the individual, spontaneous manifestations of the child’s nature” (Montessori, 1912, p. 20). Conversely, traditional schooling often leaves little opportunity for students to have a say into what takes place in the classroom. The Montessori Method espouses the opposite approach, engaging students in their learning in real and meaningful ways. According to Lillard (2007), “learning and well-being are improved when people have a sense of control over their lives” (p. 29). It is without question that a Montessori Method urban high school would constitute an expansive school reform not only in content and process, but in student
agency, as well. While Dr. Montessori advocates for agency and student control over their lives (Montessori, 1912) questions arise to the level of involvement students have in reform implementation. Lillard purported, “to really effect change, reformers must address the fundamental models on which our school system is built, as those models create a host of impediments to children’s learning” (2007, p. 6). Rather than continue the patterns of reform implementation without student voice, this study may provide a path for legislators, district and school administrators, and teachers to implement reform initiatives with increased and more purposeful student voice.

**Research Problem**

Legislators, policy writers, district and school-level leaders mandate and implement reforms with minimal to no adolescent input. Further, adolescents are not part of the reform process or identifying desired outcomes of said reform initiatives.

**Nature of the Study**

My study was an instrumental case study of one urban, public, high school Montessori program. This site was chosen due to access to participants and incorporates purposeful sampling. As the former head principal at the research location, I was involved in implementing the program being studied. This allowed a unique perspective in study design and execution. I paid attention to researcher bias, as well, as I examined researcher positionality. I sought volunteer participants from the twelfth-grade cohort that began the Montessori program their freshman year. I interviewed participants through semi-structured interviews. Once collected, the data were transcribed verbatim, and coded into themes.
Research Questions

I sought to answer the following research questions associated with the identified research problem:

1. From adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?
2. From adolescent’s perspective, how well were the concepts of Erdkinder brought to reality in an urban setting?
3. In what ways were student agency evident in developing the urban high school Montessori program?

Purpose

The purpose of this study was to examine adolescent’s perspectives of their urban high school Montessori education, and their role in helping to develop a high school Montessori program in an urban setting. In this study, I sought to elevate student voice and student perspective in the spirit of Maria Montessori. The Montessori method is also known as Scientific Pedagogy, later referred to as “follow the child” (Montessori, 1912; Sackett, 2016). In this method, the teacher makes scientific notations often and adjusts the learning environment to cultivate independence for the student. This follows in the spirit of Montessori, in that I would “follow the child” from their perceptive so that teachers, policy writers, and legislators will have the student perspective when designing reform. Montessori argues, “today an urgent need imposes itself upon society: the reconstruction of methods in education and instruction, and he who fights for this cause, fights for human regeneration” (1912, p. 20). Finally, the purpose of this study was to
add to the “reconstruction of methods” through creating new knowledge for the canon of research literature. Because of scientific pedagogy, researchers and teachers must go beyond Montessori. Sacket asserts:

“We must never fear to go beyond Montessori. Contemporary science will continually offer the possibility of affirming, enlarging, and enhancing what we already know. And we can trust that if we are willing to go beyond Montessori, we will continually rediscover the validity of the work she began for us. As Raniero Regni so eloquently said, she is waiting for us in the future. We all eagerly await—we absolutely need—the discoveries of each and every scientist applying this pedagogy every day in his or her classroom (2016, p.19).”

Significance of the Study

According to Debs and Brown (2017), “it is important that educators honestly reflect on Montessori practices to determine which practices are successful and which should be supplemented to effectively serve all students” (2017, p. 9). As school leaders and teachers implement urban adolescent programs, continual reflection on practices aligned with Montessori’s belief in scientific pedagogy (Montessori, 1948). My study addresses the void of literature on urban Montessorianism during the third plane of development.

My study is also critical for the staff and students of the site being studied. Implementing the Montessori program at this research site has cost hundreds of thousands of dollars in staffing, training, and materials. Moreover, dedicated students and staff devoted significant amounts of time and energy implementing this program.
Reflecting on and learning from student experiences will help strengthen the Montessori program for future Montessori students in urban settings and researchers.

**Definition of Key Terms**

*Erdkinder* – As kindergarten is associated with ages 4-5 years, Erdkinder is associated with ages 12-18, or the adolescent years. Dr. Montessori’s conceptualized, but unrealized plan (1948) for adolescent education and development; “We have called these children the “Erdkinder” because they are learning about civilization through its origin in agriculture” (p. 65). Dr. Montessori continues, “it is essential that this training should not turn out men who have been lulled to sleep by a false sense of security, who are incapable of confronting the unforeseen difficulties of real life…totally ignorant of conditions in the world in which they are destined to live” (p. 58).

*Montessori education* – a holistic approach to education that adheres to the practices and materials identified by Dr. Maria Montessori in her writings, lectures, and modern Montessori teacher training. More details forthcoming in Chapter Two.

*Normalization* – the process by which the child is able to control themselves (Montessori, 1976). This growth period aligns with planes one (approximate ages birth – six years) and two (approximate ages six years – twelve years) of Dr. Montessori’s Planes of Development.

*Planes of Development* – the foundation of all Montessori education. “I have found that in his development, the child passes through certain phases, each of which has its own particulate needs. The characteristics of each are so different that the passages from one phase to another have been described by certain psychologists as ‘rebirths’” (Montessori, 1971, p.1). Plane One (infancy), birth to age 6; Plane Two (childhood), age
6 – age 12; Plane Three (adolescence), age 12 – age 18; Plane Four (Maturity), age 18 – age 24.

*Traditional education* – a teacher/curriculum-driven approach to education whereby students are viewed as recipients of the educational experiences instead of co-creators, and typically are extrinsically motivated with awarding of grades and/or course credits, and assignments and grades are compartmentalized within isolated content areas.

*Valorization* – following normalization, the child progresses from physical independence to economic independence, to interdependence within their society (Montessori, 1948). This growth period aligns with Plane Three (age 12 – 18) and Plane Four (age 18 – 24) of Dr. Montessori’s Planes of Development.

**Conceptual Framework**

The Four Planes of Education was a lecture given by Dr. Montessori in 1936 and is the foundation of Montessori education (Montessori, 1973). The first plane of development, birth to age 6, is titled infancy. This plane is marked by the development of physical and biological independence. The second plane of development, ages 6 – 12, is known as childhood. This plane is marked by the development of mental independence. The third plane of development, ages 12-18, is deemed adolescence. This plane is marked by the development of social independence. The fourth and final plane of development, ages 18-24, is named maturity. This plane is marked by the development of spiritual and moral independence.

For the purposes of this study, the four planes of development comprise the conceptual framework. Although children move through all four planes, the third plane of development was more appropriate for this study, as it concerns ages 12-18. The third
plane is also referred to as the adolescent years. Dr. Montessori purported, “But above all, it is the education of adolescents that is important, because adolescence is the time when the child enters on the state of manhood and become a member of society” (Montessori, 1948, p. 56). I selected this plane specifically as a theoretical frame because Dr. Montessori (1948) outlines two key reforms needed for the adolescent: “to put the adolescent on the road to achieving economic independence (p. 61) and during the difficult tie of adolescence it is helpful to leave the accustomed environment of the family in the town and go to the quiet surroundings in the country, close to nature (p. 63)”. Dr. Montessori further asserts, “perhaps the failure of the secondary school is due to the fact that it uses methods of assimilation that are no longer suited for the development of the child” (1938, p. 35). I interpreted interview data through the lens of the third plane of development, whereby adolescents decry “help me do it, alone!” (Montessori, 1948, p. 65).

**Methodology**

This study was designed as an instrumental case study. This methodology is best suited when scant research is available (Yin, 2003). A more thorough discussion of methodology can be found in Chapter 3. The interpretive framework for this study is pragmatic. Creswell (2013) asserts, the “focus is on the outcomes of the research, the actions, situations, and consequences of the inquiry-rather than antecedent conditions” (p. 28). In this study, I was primarily concerned with the adolescent’s perspective of their role in developing an urban, public, high school Montessori program.

**Scope**
The scope of this study was bounded by interview data collected from 12th grade Montessori students enrolled in one high school in a large urban school district, in a southeastern state of the United States of America. These data were examined through the lens of Montessori’s third plane of development.

**Assumptions**

I designed and conducted this study with the following assumptions: 1) participants were willing volunteers, 2) participant responses to interview protocol were true, 3) participant understanding of Montessori education was similar, 4) all literature reviewed met the quality and rigor of peer reviewed standards, and 5) researcher biases were monitored constantly and did not unduly influence the design or the completion of this study.

**Limitations**

Case study research has been noted to lack rigor and lack the ability to generalize to other settings and populations (Creswell, 2013). Second, the Montessori program under study is in progress towards accreditation with the American Montessori Society (AMS). This program under study was in its first year of implementation when the student interviewees were entering freshmen. This is an important contextual characteristic, that while is a limitation, may also be identified as a strength for the study. Moreover, none of the Montessori programs in the school district under study are accredited. Of the more than 4,000 self-labeled Montessori schools in the United States, 1,250 are affiliated with AMS, 204 are AMS-accredited, and 220 are recognized by American Montessori Internationale (Mader, 2018). Another limitation of this study is that this is a single-site study (Creswell, 2013). Finally, due to the global pandemic,
COVID-19, and the unintended unmeasured effects of a year of virtual learning, the intended participants had an incomplete senior year of Montessori education. The participant’s last year of Montessori education is concluding with only 16 in-person learning days. This year of missed face-to-face instruction presents limitations to the full impact of Montessori learning.

**Delimitations**

This study was delimited to a Montessori program in an urban high school in a southeastern state, the first of its kind in that state. Further, I chose to limit the participants to only the 12th grade students, as members of this cohort were a part of the program inception and had experienced, at least nominally, the entire 4-year Montessori high school experience.

**Organization of the Study**

Chapter One introduces foundational information for the study including: background, research problem, research questions, purpose and significance of the study, definition of terms, conceptual framework, methodology, scope, assumptions, limitations, delimitations, organization, and summary. Chapter Two provides a history of Montessori education, further explains the conceptual framework, and identifies a gap in the research literature regarding Montessori education. Chapter Three provides details surrounding data, methodology, and procedures for the study. Chapter Four will share findings and subsequent analysis. Finally, Chapter Five will conclude the study with implications for policy, practice, and future research.

**Summary**
This chapter began by identifying the problem of practice that educational reforms are mandated and often implemented with minimal adolescent input. This chapter also briefly outlines the research questions, methodology, participants, limitations, and scope of this study. In the following chapter, I synthesized the excise literature relative to the purpose and research questions and identified a gap in the research literature.
CHAPTER TWO: THE LITERATURE REVIEW

Introduction

The purpose of this study was to examine adolescent’s perspective of their urban high school Montessori education, and their role in helping to develop a high school Montessori program in an urban setting. Moreover, in this qualitative study, I examined perceptions of adolescent students in an urban setting regarding the impediments of traditional schooling versus the developmentally appropriate goals of Montessori schooling. I interviewed former Montessori students from a single high school who were in an urban high school Montessori program. After a review of existing literature and identifying gaps in the literature, I constructed the following research questions:

1. From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?

2. From the adolescent’s perspective, how well were the concepts of Erdkinder brought to reality in an urban setting?

3. In what ways were student agency evident in developing the urban high school Montessori program?

The literature review is organized into eleven sections. The first section provides an overview of Montessori education. The second section explains the conceptual framework, Dr. Montessori’s four planes of development. The third and fourth sections
address the historical background of Montessori and its progression from Europe to the United States. The fifth and sixth sections address cognitive development and psychosocial emphasis. The seventh, eighth, and ninth sections review literature on Montessori high schools, Montessori’s Erdkinder, and student perceptions of Montessori high school. My literature review concludes with the research gap identified in the literature, and the basis for- and need of-, this research study guided by my research questions.

**Montessori Education**

Montessori education is an approach to education established by Maria Montessori in the early 1900s (Ackerman, 2019; Bone, 2019; Isaacs, 2019; Justice, 2017). Ackerman (2019) reports that the overarching purpose of Montessori education is to nurture the whole child to realize their full potential. Montessori education is a student-led approach to education, guided with the aid of credentialed Montessori teachers, peer mentorship, and the prepared environment (Montessori, 1912, 1948, 1976). The Montessori concept involves a pedagogy based on developmental theory, whereby teachers complete an intense Montessori teacher development program, and an interrelated and spiral curriculum that spans the full range of years in a child’s education (Bone, 2019; Leonard, 2015; Willis, 2015). Montessori’s overall goal for education of the child revolved around development of the whole child throughout the formative years so that human beings could improve the human species or raise the level of humankind (Ackerman, 2019; Frierson, 2015; Justice, 2017; Povell, 2017). Isaac (2019) adds that Montessori considered her philosophy and approach to education to be scientific, based on observations of children around the world during their formative years. Dr.
Montessori believed children from all backgrounds exhibit certain developmental characteristics and created a system for educating children based on these developmental attributes (Isaac, 2019). According to Gustafsson (2018), Montessori believed education could support human psychic evolution so that humans would have the ability to contribute positively in an evolving world. The focus on individuals, she believed, impacts the whole formation of society (Bone, 2019; Lide, 2018). Her vision of education included how to meet the needs of children developmentally, cognitively, physically, emotionally, socially, and spiritually (Ackerman, 2019; Ayer, 2017; Frierson, 2015; Rich, 2015; Willis, 2015).

The Montessori education is a holistic approach to education (Miller, 2016; Miller, 2018; Taggart, 2017). Holistic education, also known as whole child education, is committed to creating a sense of oneness with the universe and a rejection of material forms of education within students (Mayes & Williams, 2013; Miller, 2016; Miller, 2018). Miller (2018) explains that the movement encourages “inner human qualities, such as mind, emotion, creativity, imagination, compassion, a sense of wonder and reverence, and the urge for self-realization” (p. 58). The holistic education approach rejects education objectives that are considered to promote materialism (Levin, 1987; Miller, 2018), rather promotes educational expression and freedom in learning (Miller, 2018).

Holistic education is guided by a series of three principles, each with the intent of challenging the standard educational school practices (Miller, 2016). First, holistic education seeks the balancing of holistic goals with materialistic goals, for example, imaginative work with reasoning. Second, students need to feel a sense of inclusion with
others and within their classroom. Finally, students must begin to examine the relationships that exist in the world and should not see the universe as parceled out but rather as a cohesive entity. Overall, these three principles guide much of the work in the holistic classroom.

**Conceptual Framework**

Dr. Montessori first described Four Planes of Education in a 1913 lecture (Montessori, 1973). This model is the foundation of the Montessori Method (See Figure 1). For this study, Montessori’s Four Planes of Development (as they have come be known) will serve as the conceptual framework for this study. The Four Planes of Development is the holistic framework upon which Montessori built her vision of developmental psychology. Planes of development are a basis for how students are grouped in classrooms throughout the Montessori education program (Bone, 2019; Leonard, 2015; Montessori, 1983, 1996, 1992; Willis, 2015). The theory of the Planes of Development recognizes that path, and supports children’s journey to become people with maturity, imagination, a love of learning, and good moral character (Bettmann, 2016; Ludick, 2015; Orion, 2015). Within each plane, the child undergoes a period of intense change, followed by a period of assimilation called Normalization in Planes 1 and 2, then Valorization in Planes 3 and 4 (Christensen, & Gast, 2015; Ludick, 2015).
The first plane of development takes place from birth to age six and is referred to as the Early Childhood Period or the Red Plane of Infancy (Montessori, 1983, 1992). Each of the four planes of development includes two sub-planes. The first sub-plane begins at birth and ends at three years of age. Montessori described the child at this age as the spiritual embryo. The infant has no psychic qualities nor pre-established powers of movement. The second sub-plane occurs from age three to six years. The first sub-plane is considered to be the most critical period of development. During this time, the child has an unconscious Absorbent Mind and is not conscious of his or her actions and reactions. The child does not act on a willed choice, nor have a conscious memory and is intent on using the five senses for exploring. Therefore, the adult must provide sensorial exploration, by being a part of his everyday life (Andrews, 2015; Bettmann, 2016; Blount, 2007). By the end of the first plane of development, the child will be ready for the second plane, which will build on what he has practiced during the first (Castiglione, 2016).
The Second Plane of Development

The second plane, or the Blue Plane of Childhood, lasts from six to twelve years of age. During the second plane of development, the child is in the stage of consciousness and realizes that he or she is learning (Casquejo-Johnston, 2019; Johnston, 2016; MacDonald, 2016; Orion, 2015; Webster, 2015). He no longer has the Absorbent Mind (Webster, 2015). Orion (2015) purported that the child at this age has an insatiably inquisitive mind and a thirst for knowledge, love of imagination, fascination with fairness, and a desire for intellectual independence. They want to know how, when, and where about everything. Compared to the first plane of development, children at this stage are more stable, have greater energy, and are relatively calm (Rudick, 2015; Webster, 2015). The child has mastered basic human skills: basic intelligence, coordinated movements, fluent speech, and a developed personality (Casquejo-Johnston, 2019). He is socially adapted to his culture and learns through reasoning, using his imagination and logic to explore areas of study (Johnston, 2016; MacDonald, 2016; Orion, 2015; Webster, 2015). The child actively participates in life around him and does things independently and learns through his or her own experiences (MacDonald, 2016; Orion, 2015; Webster, 2015). They also begin to organize themselves physically and learn to speak, read, crawl, and walk and want to know how, when, where about everything (Casquejo-Johnston, 2019; Johnston, 2016; MacDonald, 2016; Orion, 2015; Webster, 2015).

MacDonald (2016) reports that also during the second plane, physical order is extremely important for young children and they begin searching for moral order and seek to establish a sense of right and wrong. Children learn best by observing the adults.
in their lives. Therefore, those in the second plane of development benefit from role
models with character, observing people living with integrity, and holding firm to
convictions for which they believe. Whatever moral conscience the child builds during
this period will transfer into teenage years during the third plane (Orion, 2015; Webster,
2015). Children at this stage more readily develop their intelligence and consciousness
(Orion, 2015; Webster, 2015). Developing this conscience will prompt the child to want
to help when injustice is observed (Casquejo-Johnston, 2019; Johnston, 2016;
MacDonald, 2016; Orion, 2015; Webster, 2015). This is also the time when children
become aware of the transition from concrete to abstract thinking (Casquejo-Johnston,
2019; Johnston, 2016; MacDonald, 2016; Orion, 2015; Webster, 2015).

The Third Plane of Development

The third plane of development, or the Red Plane of Adolescence takes place
from ages 12 through 18, which are the years of adolescence (Casquejo-Johnston, 2019;
Castiglione, 2016; Davis, 2016; Ewert-Krocker, 2015; Lide, 2018; Montessori, 1996;
Webster, 2015). This is the plane when the individual leaves behind the state of
childhood and enters the state of adulthood, becoming a member of society as an
individual. During the transition from the juvenile to the adulthood, there is a transition
from the child who lives in a family to the adult who lives more independently in society.
The years of adolescence brings about a child’s desire for emotional independence
(Ewert-Krocker, 2015; Lide, 2018; Webster, 2015). Davis (2016) states that during this
period of development, the child works on the construction of his social self and
separates from his parents, mentally and physically. Children in the third plane of
development are characterized by self-concern and self-assessment (Davis, 2016; Ludick,
This is a sensitive period for critical thinking and exploring social and moral values (Casquejo-Johnston, 2019). The child also needs to be shown that he can participate in and have some control over his life. This point connects directly to student agency. If the child was properly normalized during the second plane, the child will most likely have a strong moral conscience to rely on when tough choices present themselves (Montessori, 1996, 1992). The third plane is also a sensitive period for peer identity. It is important for the child to be accepted as a member of a group (Montessori, 1964, 1996, 1992). The young adolescent prefers being a part of a group and simultaneously the feelings of independence (Levine & Munsch, 2018; Montessori, 1973).

Levine and Munsch (2018) wrote that when comparing the third plane of development to the first, it is a time of great transformation, both physically and psychologically. The first sub-plane, which lasts from 12 to 15 years is a time of greater change than the second sub-plane, which lasts from 15 to 18 years. At this stage, children are not inclined to great energy, often sleeping late. Mentally, they have developed logical thinking, but do not like to be pressured into learning facts. All academic learning should be connected to real life skills: cooking, gardening, sewing, car repair, etcetera (Montessori, 1973). Real life skills also include things that were non-existent in Montessori’s time. Adolescents today navigate social media, process continual advertising inputs, are connected globally, contend with and are coming of age in a global pandemic. In the future lives as adults, today’s adolescent will also contend with items such as outsourcing manufacturing to other countries which impact job opportunities at home.
Montessori envisioned a different type of school environment for the third plane of development, which she called *Erdkinder* (Casquejo-Johnston, 2019; Lillard, & McHugh, 2019). Montessori was never able to create such a school, but she did write about her ideas for one. The chief cry of the adolescent during this plane is, “help me do it, alone” (Montessori, 1948, p. 65). She envisioned a self-sufficient community (Casquejo-Johnston, 2019; Webster, 2015). The students would grow their own food, plan meals, add to the buildings, and make their own clothing (Casquejo-Johnston, 2019; Webster, 2015). Additionally, a self-sufficient community may include characteristics as a student-led establishment for norm of interaction, resolving disputes, and establishing procedures to address individuals who violate norms or politeness and respectfulness.

*The Fourth Plane of Development*

The fourth plane of development occurs between the ages of 18 and 24 and is characterized by the construction of the spiritual self (Dorantes-González, & Balsa-Yepes, 2020; Montessori, 1964, 1965). This is the transition to adulthood. The fourth plane is usually the time when humans have their first experience living away from home. From 18-21 years, humans are in a period of questioning careers (Casquejo-Johnston, 2019; Montessori, 1964, 1965). From age 21 to 24, they are settling in with what initial careers they want to pursue (Montessori, 1964, 1965). Because people change careers often, the Third Plane of development flows to the Fourth Plane in that independence learned in Plane Three impacts decisions in Plane Four.

It is important to provide enough exposure to many branches of learning and practical skills so that students may choose a profession that is deeply satisfying (Casquejo-Johnston, 2019; Montessori, 1996; Myers, 2017; Webster, 2015). According to
Blount (2007), during this period, young adults are in the process of conscious discernment of right and wrong, seeking to discover their place within the world. Young adults in this plane have a desire for financial independence. The adults work on constructing their self-understanding and ask questions like “Who am I?” and “What do I have to give to the world?”. They began to realize that the deepest, most meaningful learning happens from discovery, trial and error, and practice, while seeking to attain spiritual and moral independence (Blount, 2007; Davis, 2016).

Focus of the Study

For this study, I focused on the third plane of development for three reasons. First, most Montessori research focuses on the first two planes of development. Second, Dr. Montessori called her approach to education scientific pedagogy. To continually examine practices aligns with the work Dr. Montessori espoused herself. Dr. Montessori died before being able to fully articulate the materials needed, curricula, and setting for adolescent education. For this reason, continual examination of high school practices is needed. Finally, this study focused on the third plane of development due to my natural curiosity and fascination with the age group. Dr. Montessori refers to the adolescent as spiritual embryos, yet in my experience, adolescents are treated as children with too little responsibility, or as young adults, with too much responsibility. Her own writings support my experiences and justify the need for this study.

In her seminal work Erdkinder (1948) Montessori underscored the need for research and reform for this age group. Dr. Montessori purported, “schools as they are today, are adapted neither to the needs of adolescence nor the times in which we live.” She continues later, “The reform of the secondary school may not solve all the problems
of our times, but it is certainly a necessary step, and a practical, though limited
collection of our times, but it is certainly a necessary step, and a practical, though limited
contribution to an urgently needed reconstruction of society” (1948, p. 56). Moreover,
Dr. Montessori purported, “But above all, it is the education of adolescents that is
important, because adolescence is the time when the child enters on the state of manhood
and become a member of society” (Montessori, 1948, p. 56). Finally, Dr. Maria
Montessori purported, “The adolescent must never be treated as a child, for that is a stage
of life he has surpassed. It is better to treat an adolescent as if he had greater value than
he actually shows than as if he has less and let him feel that is merits and self-respect are
disregarded” (1948, p. 72). Nearly one-hundred years since the inception of the
Montessori Method, thirty-eight years after A Nation at Risk, and many other education
reforms later, urban high schools continue to not meet the academic or social needs of
this age group (Polirstok, 2017; Duncan-Andrade & Morrell, 2008). Because very little
has changed in traditional schooling from the 1940s to the present (Tyack & Cuban,
1995) Dr. Montessori’s reforms are needed now more than ever.

**Historical Background**

Gutek and Gutek (2016) wrote that Dr. Maria Montessori developed her method as a
child-centered educational approach based on scientific observations of children from
birth to adulthood. According to the researchers, over 100 years ago, in 1907, Dr.
Montessori, an Italian educator, physician, and scientist, opened the doors of Casa dei
Bambini on January 6, 1907. Montessori was determined to make the Casa dei
Bambini a quality educational environment for whom many had thought were unable
to learn. There, she began working with some of the areas most disadvantaged, and
previously unschooled, children. While the children were unruly at first, they soon
showed great interest in working with puzzles, learning to prepare meals, clean their environment, and engage in hands-on learning experiences. Montessori observed that the children exhibited calm, peaceful behavior, periods of deep concentration, and a sense of order in caring for their environment. Montessori saw that the children absorbed knowledge from their surroundings, essentially teaching themselves.

According to Seveso (2018), the success of Montessori’s schools sparked interest around the world. Dignitaries traveled to Rome to observe children who exhibited concentration, attention, and spontaneous self-discipline. The innovative Montessori Method also began to attract the attention of prominent educators eager to learn it. Her courses drew students from as far as Chile and Australia, and within the first decade of her educational practice, Montessori schools opened on five continents.

Weinberg (2009) adds that in 1909, Montessori published her first book, Il Metodo della Pedagogia Scientifica applicato all’educazione infantile nelle Case dei Bambini. Within three years it had been translated into ten languages. The first 5,000 copies in English, succinctly titled The Montessori Method, sold out in four days (Weinberg, 2009). By 1910, Montessori schools were common throughout Western Europe and were being established around the world. In 1911, the first Montessori school opened in the United States. By 1914, 187 English-language articles and books had been written about Montessori education. Montessori focused her attention to the education of elementary-aged children in 1916. In the international training course of 1916, Montessori focused nearly half of her lectures on newly created elementary materials. In 1917, she published The Advanced Montessori Method, describing her thoughts on the education of children ages 7 to 11. The Montessori program included multiage groupings that foster
peer learning, uninterrupted blocks of work time, and guided choice of work activities (Lillard, 2017). In addition, hands-on Montessori learning materials are carefully arranged and available for student use in an aesthetically tended environment. No extrinsic rewards are offered, or grades assigned, and children are encouraged to explore personal interests while widely engaging with others (Lillard, 2017).

Justice (2017) asserts that Montessori’s early research focused on educating young children, but in the 1920s she turned her attention to adolescents. She observed that during adolescence, students need activities that help them to understand themselves, to find their place in the world, and to blossom into global citizens. She proposed residential schools where young adolescents, whom she called Erdkinder, or “children of the earth”, could work and live in a trusting community, engaging in real-world activities such as farming or marketing their own handmade goods. By experiencing human interdependence, she believed, students would learn how society is organized and develop the skills needed to meet the world’s challenges in a positive way. This human interdependence is vital for life today. Social media, interaction in a global economy, learning to build relationships with those of whom we disagree, all point to the need for adolescents to understand interdependence.

In his biography, Kramer (2017) shared that Montessori also embedded peace education into her curriculum, a result of having lived through two world wars. Education for peace and social justice remains an integral part of Montessori education. Montessori traveled widely, teaching courses and lectures, and encouraging the launch of new schools. In 1929, together with her son, Mario, Dr. Montessori established Association Montessori Internationale, to ensure that her philosophy and approach to
education would be implemented as she intended.

**Montessori in the United States**

In the United States, the Montessori Movement spread quickly. The first Montessori school opened in 1911, in the home of a prominent banker in Scarborough, New York. Others followed in rapid succession. Unlike Maria Montessori’s first Casa dei Bambini, which was for children from poor, disadvantaged families, these early schools catered to children from wealthy, cultured families striving to give their children the best education possible (Foschi, 2020). Prominent figures, including Thomas Edison and Alexander Graham Bell, gave their support (Kramer, 2017).

In 1913, Maria Montessori traveled to the United States on a three-week lecture tour, where she met crowds of curious and interested supporters (Ansari and Winsler, 2014; Brown and Lewis, 2017). Montessori lectured at New York City’s Carnegie Hall, where she showed moving pictures taken at her school in Rome and in response to demand, a second lecture was arranged (Culclasure, Fleming, and Riga, 2018). Montessori reported that she found the schools in America faithful to her methods and considered the trip an overwhelming success.

Justice (2017) wrote that Montessori returned to the United States in 1915 to demonstrate her method at the Panama–Pacific International Exposition in San Francisco, and to give an international training course for prospective Montessori teachers. At the exposition, a Montessori Glass Classroom was constructed, a classroom with panoramic glass windows on three walls (Culclasure et al., 2018; Issacs, 2018). This unique design enabled spectators to observe, with amazement, the class of young students who worked with intense focus and concentration, seemingly oblivious to the crowd surrounding the
students (Culclasure et al., 2018). That same year, 1915, Montessori was an invited speaker at the then prestigious annual conference of the National Education Association in Oakland, California (Bienen, 2017; Culclasure et al., 2018; Issacs, 2018). More than 15,000 educational leaders attended (Bienen, 2017; Culclasure et al., 2018; Issacs, 2018). The success of the Glass Classroom and Montessori’s long California visit fueled American interest in Montessori education and its visionary founder, helping to propel Montessori education across the country. American newspapers and educational leaders embraced its founder for her pedagogy and her work.

Lillard (2016) states that by 1916, more than 100 Montessori schools were operating in the United States. However, the Montessori Movement in the United States subsided as quickly as it had spread. Language barriers, World War I travel limitations, anti-immigrant sentiment, and the disdain of a few influential educators all contributed to the decline (Lillard, 2007). William Kilpatrick, a highly regarded figure in the progressive education movement, and a former student of John Dewey, was one such detractor (Mintz, 2016). Kilpatrick critiqued the Montessori Method in his book, The Montessori System Examined (1914). A leading scholar in the early 20th century, Kilpatrick criticized Montessori’s credentials, perspectives, and overall philosophy. He dismissed her beliefs of the role of the teacher, ideal classroom size, and classroom materials. Kilpatrick rejected her interpretation of the doctrine of development, as well as the amount of freedom the children have in a Montessori school. Kilpatrick’s negative assessment of Montessori quickly became widely known and accepted throughout the United States.

Montessori education in the United States had almost completely faded away, except
for the occasional school or practitioner by the 1920s. By the 1950s, the cultural climate was changing in the United States, including a growing discontent with traditional American education. Among those seeking alternatives was a young, aspiring teacher from New York City, Nancy McCormick Rambusch. Having discovered the writings of Maria Montessori, Rambusch was struck by the freshness of her ideas. In 1953, Rambusch traveled to Paris to attend a Montessori Congress. There, she met Mario Montessori, Maria’s son, who encouraged her to bring Montessori back to the United States. Rambusch’s subsequent Montessori schooling and vigorous efforts to promote the Method in the United States allowed Montessori education to begin to flourish again in the United States. Parallel to this, in 1960, and also as a result of Rambusch’s efforts, the American Montessori Society was born (Lillard, 2007).

In the last two decades, several studies have explored Montessori education and measured implementation and outcomes of participation in both the public and private sectors (Brown & Lewis, 2017). While often demonstrating findings in favor of Montessori education, many of these studies have significant limitations, such as small sample sizes, questionable authenticity of Montessori implementation, and selection bias. Although a recent randomized controlled trial addressed many of these concerns (Lillard et al., 2019), the limitations of most existing studies and the small quantity of research on Montessori education as a whole relative to other educational models demonstrate the critical need for more-rigorous research focusing on Montessori implementation and the subsequent effect on students, teachers, families, and communities (Bienen, 2017).

Cognitive Development

Phillips-Silver and Daza (2018) proposed that the time between birth and three years
old is a crucial time in an individual’s brain development, with most neurological growth taking place during this time. The habits and experiences cultivated by parents and primary caregivers of young children during this period have a long-lasting impact on a child's brain and overall health. Further, according to Phillips-Silver and Daza (2018), early childhood neurological development occurs from conception until age six. Brain nerve cells form before birth and continue to develop during the first six years of life, and that 75 percent of neurological growth takes place during this time. The brain nerve cells formed before birth are like wires to be connected, with each connection signifying neurological development. These connections occur each time a child experiences sensory stimulation such as being held, touched, read to, or played with. A child’s interest in certain activities, sights, sounds, and objects will determine how quickly neurological connections form. Once the primary neurological pathways are established, around age eight months, a child is ready to develop the basis for language, intelligence, sociability, and curiosity. The process is directly related to receiving information, processing the information, and sharing synthesized information.

Cognitive science research suggests that instruction that follows the aforementioned principles of cognitive development is likely to lead to greater learning than instruction that does not when using manipulatives (Dreyer, et al, 1969; Kohlberg, 2017; Kayili, 2018; Phillips-Silver & Daza, 2018). Indeed, the Montessori approach to instruction uses manipulatives in a manner consistent with its principles, and learners who attend Montessori programs in early childhood demonstrate high levels of achievement (Laski et al., 2015; Sebastian & Matheen, 2016). Yang and Wang (2017) noted that the instruction progresses from concrete to abstract representations and age groups and grade levels to
collaboratively select and sequence which manipulatives will be used at each level.

Simple modifications to instruction based on the principles presented here increase the effective use of manipulatives in instruction and strengthen children’s problem solving and critical thinking (Yang & Wang, 2017). The greater the physical similarity between the manipulative and the concept it represents, the more likely children will be able to understand the relation between the two (Kohlberg, 2017; Kayili, 2018; Phillips-Silver & Daza, 2018; Yang & Wang, 2017). Research on the development of symbolic and analogical reasoning provides support for this claim (Kohlberg, 2017; Kayili, 2018; Phillips-Silver & Daza, 2018; Yang & Wang, 2017).

**Psychosocial Emphasis**

Dorer et al. (2018) and Livingston et al. (2017) agree that many activities contribute to the development of the psychosocial aspects of Montessori adolescent students, including cooperative learning for interpersonal interaction, discussion of high-level concepts such as tolerance and realism, cultivation of high expectations with regard to social development, immersion or intersession activities off campus requiring community service or job internships or travel, daily community meetings, weekly problem-solving sessions, peer-counseling programs, time for daily personal reflection, and creation of classroom interior design. As expressed by Blackburn et al. (2019) elements of cooperative learning are: (1) positive interdependence; (2) face-to-face positive interaction (applauding success and effort); (3) individual and group accountability; (4) interpersonal and small group skills (communication, trust, leadership, decision making, and conflict resolution); and (5) group processing (reflecting on how well the team is functioning and how it could function better). All these elements are important for
Montessori students to master.

Currently, adolescents do not have a voice in the educational reform process or input with identifying desired outcomes of said reform initiatives. Instead, legislators, policy writers, district and school-level leaders mandate and implement reforms with minimum to no adolescent input. It is critical that adolescents have a voice in implementing the Montessori programs as districts spend hundreds of thousands of dollars for staffing, training, and materials. Additionally, students spend time and energy adhering to education reform. Taking their experiences and perspectives into account may help improve the Montessori program for future adolescents in urban settings. Considering the populace of students’ experiences may also help the school research site become accredited by the American Montessori Society.

The Montessori Method of education is rooted in student voice, student agency, and student ownership of learning (Montessori, 1912). Moreover, Montessori purported, “the fundamental principle of scientific pedagogy must be, indeed, the liberty of the pupil; - such liberty as shall permit a development of the individual, spontaneous manifestations of the child’s nature” (Montessori, 1912, p. 20). Agency within social cognitive theory includes three modes of agency: individual, proxy, and collective (Bandura, 2002). While all three modes align to Montessori’s vision of education, individual agency most closely aligns. Individual agency directs and guides student learning. Dr. Montessori refers to this as the prepared student (Montessori, 2012). Individual agency during the first and second planes of development moves a student from adult dependence to interdependence with peers (second and third planes of development). As students progress through the second and third planes of development and as their agency
increases, they move to independence and liberty as mature adults in the third and fourth planes of development (Montessori, 1912).

Student agency is fundamental to the third plane of development. As students transition from one plane to the next, they must have the appropriate environment. Dr. Montessori refers this as the Prepared Environment. In the next section, I discuss the Montessori high school or prepared environment, to cultivate student agency.

**Montessori High Schools**

The desire for a Montessori plan of education for high school-aged students began to grow following the publication of her work on the second plane of education in 1916 (Barker, 2011). Montessori, however, had not articulated all of her plans for high school students at this point and was focused still on the development of the earlier childhood stages. Montessori high schools are among the holistically focused alternative education school types that began to increase in the 2000s (Kahn, 2011). Although decreasing in number since peaking in the 1960s and 1970s (Barker, 2011), the 2016 North American Montessori Teachers’ Association (NAMTA) school directory included over 100 Montessori high schools (NAMTA, 2016). Montessori high schools are known for fostering the educational, social, and psychological development of adolescents, within an engaging yet nurturing environment (Kahn, 2011; Rathunde, 2017; Tornar, 2018).

Although Montessori high schools have grown in popularity, one of the vital materials missing from their available resources is a rigorously examined common school evaluation tool that determines how well schools are implementing adolescent holistic education according to Montessori philosophy. Such a tool would support school administrators attempting to develop a school that aligns to Montessori’s adolescent
schooling philosophy. Moreover, an evaluation tool would add credibility through assessment for implementation and impact. For Montessori high schools, there are several probable reasons for why no common school evaluation tool exists. The most likely reason is that Dr. Montessori left behind scant details on what a Montessori high school should incorporate (Sutton, 2007; Barker, 2011). In her writings on developing a Montessori high school, Montessori focused on discussing the broad components of setting up such a school, such as types of learning experiences for students and where to establish schools, not particularly delving into detail on any matter (Barker, 2011; Montessori, 1973). To make up for this lack of information from Montessori herself, the Montessori academic community have worked to interpret these principles and expand upon them (Barker, 2011; Kahn, 2011; Kahn & Pendleton, 2017). This has led to Montessori high schools ranging in their composition and approaches to schooling, yet each maintaining the intent to follow the principles of Montessori in their unique expanded formats (American Montessori Society, 2015; Kahn, 2011). Attempting to make an evaluation tool that covers the range of Montessori high school interpretations is a challenging task. Schools may vary dramatically in educational methods and goals, with some attempting to create the outdoor experiences Montessori described, and others trying to infuse methods used with younger children.

This lack of a common school evaluation tool can also be attributed to several other issues. First, there is a lack of overall research in the field of Montessori high school education, particularly in the area of measurement for evaluation and assessment purposes (Barker, 2011; Kahn & Pendleton, 2017; NAMTA, 2015b). Although research articles and journals on Montessori high school education do exist, much of this work is
committed to examining educational outcomes in schools and on the refinement of
Montessori secondary teaching methods. In addition to the lack of research on
Montessori high schools, there is resistance toward evaluation and assessment tools in the
Montessori community (Montessori Foundation, 2015; Pottish-Lewis, 2015). This
resistance can be attributed to the warnings against evaluation and assessment tools by
Montessori herself, and her warnings about the ability of assessment tools to accurately
capture students’ outcomes within the unique school contexts (Montessori, 1973;
Montessori Foundation, 2015; NAMTA, 2015b; Pottish-Lewis, 2015). Finally,
Montessori high schools seek to develop holistic education aspects of the child beyond
the cognitive, such as personality, morality, and character (Kahn, 2011; Rathunde, 2017;
Tornar, 2018), which are abstract concepts challenging to operationalize in a school
evaluation tool. Each of these described issues has possibly contributed to the absence of
a Montessori high school common evaluation tool and represents possible barriers to the
creation of such a tool.

The lack of common approaches to high school Montessori makes studying this
method challenging to evaluate the quality or fidelity of implementation. One reason this
study was designed for student interviews is that the student perspective provides a clear
data collection strategy. The broad principles and goals of high school Montessori may
be clear (e.g. independent learner, student agency, etc.), but because there is no clear way
to evaluate, hearing directly from students who lived the experience is the most direct
way to open a window into understand how well and which features seem to be effective.

**Adolescence and the Third Plane of Development**

Maria Montessori was an early researcher of human development and education
principles (Gutek, 2004). She believed that humans developed through an ordered series of *planes of education* that started at birth and ended with adulthood (Grazzini, 2004). These planes formed the foundation of Montessori’s belief about age-appropriate education. Montessori’s *planes of education* existed in four stages, with each stage lasting six years. The first plane of education involved the child’s early childhood education, and the final plane of education ended with higher education. Montessori believed that the first two planes of education mirrored the last two planes of education, an important consideration when examining how Montessori viewed adolescence.

Adolescents in Montessori’s third plane of development experience the same level of physical and psychological stress as infants in the first plane (Grazzini, 2004; Kahn, 2011). These stressors required adolescents to receive special development considerations in schooling to assure they undergo healthy human development (Barker, 2011; Montessori, 1948; Montessori, 2011a; Montessori, 2011b; Montessori, 2011c). These considerations are outlined in *Erdkinder* (1948). Dr. Montessori purported, “physical care must include special attention to the physiological condition of adolescence…special attention must be given to the diet, non-toxic and rich in vitamins, only vegetarian products…life in the open air and sunshine must be made to the greatest possible extent” (1948, p. 70-71).

Montessori saw the third plane as where children physically became adults and moved socially from being the wards of their parents to individuals free of their parents’ influences and preparing to live in society (Montessori, 1973; Montessori, 2011a; Montessori, 2011b; Montessori, 2011c). This challenging movement towards independence guided much of the human development and education principles
Montessori articulated for the adolescent age group (Barker, 2011; Kahn, 2011; Tornar, 2018).

Montessori believed that adolescents had two primary concerns, to be protected during the delicate physical transition period, and to be placed in a position to understand the man’s role which he will play in society (Barker, 2011, p. 97). Montessori believed that personality development was the primary educational goal for adolescents, which would ultimately prepare them for life in society (Montessori, 1973; Montessori, 2011a; Montessori, 2011b; Tornar, 2018). Montessori referred to this period as one in which adolescents were social newborns who were to be guided (Montessori, 2011c). As social newborns, adolescents’ success in life would be determined by a belief in their abilities, the capacity to adapt their abilities, and the belief that their abilities could be applied to improving the world, and thereby related to agency (Montessori, 2011c; Tornar, 2018).

In Montessori’s philosophy, work was the primary means of personality development, and she held a set of fundamental beliefs about how adolescents should view work (Montessori, 1973; Montessori, 2011a; Tornar, 2018). First, Montessori believed work would provide adolescents the ability to become economically independent of their parents and self-sufficient in their lives. Second, work needed to be viewed by adolescents as a noble endeavor; hence, it would be vital that adolescents never feel work as being forced or being given without reason (Montessori, 1973). If adolescents began to dislike work, then it could lead to undesirable adolescent personality outcomes, such as avoidance of work. Finally, Montessori believed adolescents needed to understand work existed in both a physical and intellectual capacity, both of which were worthwhile and were complementary to each other. She warned against adolescents
desiring one type of work over the other, as work needed to be understood as a multifunction tool for self-help and social adaptability. In the Montessori approach, an appreciation and understanding of work provided the foundation for much of an adolescent’s personal development (Montessori, 1973; Montessori, 2011a; Tornar, 2018).

Montessori also believed personality development occurred through adolescents’ experiences, particularly through engagement with the community (Kahn, 2011; Montessori, 1973). She encouraged adolescents to identify issues in their community and work to address these issues. The larger goal of these social experiences was to understand the ability of individuals to positively impact society and have faith in the ability of humans to improve social issues. Montessori also desired for adolescents to collaborate with one another and experience other cultures through these interactions with others. Montessori believed that these diverse experiences with others would promote an adolescent’s understanding of the importance of cooperation.

**Montessori’s Erdkinder**

Dr. Montessori communicated her plans for adolescent education in *From Childhood to Adolescence: Including Erdkinder and the Function of the University*. This work that would largely be used as the source for interpreting Montessori’s beliefs for a high school education (Grazzini et al, 1999; Barker, 2011). The principles of Montessori’s high school education were to take place in the Erdkinder, a term which does not have its etymology in education, but rather is a religious archaic German term for “the children of the soil” (Barker, 2011, p. 97; Montessori, 1973). In the Erdkinder paradigm, adolescents would be housed in a school on a rural farm, not far from a city (Kahn, 2011; Montessori, 1973). Adolescent students would live at the school as a means to gain independence
from their parents (Montessori, 1973). Students would interact with one another and
develop together so to foster the students’ individual personality development.

Working on a farm was vital to the adolescent in the Montessori Erdkinder (Kahn,
2011; Montessori, 1973). Adolescents at the Erdkinder would be actively working the
land, growing food, caring for livestock, and using machinery (Montessori, 1973). The
intent of this farm work, however, was not for students to learn how to become
farmers. By working on a farm, students would appreciate the principles of life and
death in the natural world, gain a foundation in scientific thought, and connect with the scientific
thought process. Through harvesting and selling their crops, students would gain access
to the principles of production and sale, which would aid them in later achieving
economic independence. Montessori saw farm work as vital for the development of the
adolescent’s personality; however, she understood it would be a challenging model to
implement.

Montessori also saw the Erdkinder as introducing students to the principles of
independence and economic self-sustainability (Kahn, 2011; Montessori, 1973).
Montessori envisioned this as occurring through providing adolescents access to a
storefront in a nearby city and a hotel-type business on the farm (Montessori, 1973). In
the store, the students would work and sell the produce they grew on the farm, as well as
any other creative materials. In the hotel, students would further the principles of
hospitality they learned from earlier Montessori experiences. Through both experiences,
students would learn to interact with their parents in a new manner that would aid in
achieving independence by altering the perception of adult parents as only having a
parental role. Montessori saw these experiences as encouraging independence and
economic self-sustainability, which were the two ultimate goals of adulthood. Montessori high schools have had mixed success in the United States (Ludwig, 2011; Kahn, 2011). However, two U.S. schools are worth noting for their influence on the U.S. Montessori high school community: The Farm School at the Hershey Montessori School and the Montessori High School at University Circle (Ludwig, 2011; Kahn, 2011). The Farm School has become a center for individuals attempting to understand the Montessori Erdkinder philosophy or implement a farm-like setting into their school practices. Because the school is located on a farm, it is considered to be a close representation of what Montessori had intended for adolescent education (Kahn, 2011). The Montessori High School at University Circle is considered a model for the implementation of a Montessori high school in an urban setting, specifically regarding urban education practices. Each of these schools is highly influential in the Montessori high school community. These two schools provide the basis for much of the thinking about the appropriate way to implement an Erdkinder school and provide many of the widely used resources implemented in Montessori high schools. Neither of these schools has published a school evaluation tool that has been rigorously examined for reliability and validity.

Montessori designed the general principles for an Erdkinder educational curriculum that she believed would lead to the desired developmental outcomes, particularly the development of the adolescent personality (Montessori, 1973). Montessori (1973) divided the principles of her curriculum into three categories: (1) To open the way to the possibilities of the adolescent for personal expression (that is, to facilitate, by exercises and exterior means, the development of the interior personality); (2) to supply that which
we consider to be the creative elements necessary for the physical being of man in
general; and, (3) to put the adolescent into relation with present civilization by bringing
him general culture and by experience.

Each of these three principles would be achieved through the school curriculum
(Montessori, 1973). The first goal of personal expression would be gained through artistic
tasks such as music, poetry, drama, and art. Personal expression was to be understood as
an endeavor connected to work. The second goal of creative elements education should
be composed of moral education, mathematics, foreign languages, and linguistics. One
of the primary points of creative elements education is to teach students that abstract
concepts can be placed into physical forms that can be manipulated. The final goal was to
place adolescents in connection with civilization through the natural sciences,
engineering, history, and elective learning. Montessori had a particular desire for
adolescents to work with machines and to understand that machines should be used to
improve humanity. Elective learning would provide an opportunity for learning in the
specific fields of students’ interest. Montessori designed these curricular principles, but
never developed materials similar to what she developed at the elementary level (Barker,
2011).

In addition to those three curricular principles, Montessori had specific beliefs about
the nature of student work in the Erdkinder (Kahn, 2011; Montessori, 1973). Montessori
desired for the Erdkinder curriculum to be based largely on the principles of choice and
expression. Montessori wanted the adolescent curriculum to encourage work but teach
that specialization was only a means of entering into the workforce and that individuality
should not be lost due to specialization (Montessori, 1973). She did not believe that
adolescents should be forced to complete schoolwork, but also that they should not be allowed to waste their possible work potential (Montessori, 1973).

Importantly, Montessori understood some of the practicalities of a high school education. Montessori believed that the Erdkinder should dedicate time in the final two years of high school to prepare for university entrance examinations (Montessori, 1973). Although Montessori was referring to preparations for academic success, she suggested a possible examination of character as a way of understanding if the adolescent is prepared to enter society. Examinations did not fit with the general principles of Montessori, but she acknowledged their value in the larger culture.

In comparison to Montessori’s early-education and elementary plans, little was left behind on high school (Barker, 2011). Given that little exists beyond the seminal text Erdkinder and a few recently released lectures, Montessori scholars have had to conjecture heavily about how to interpret the few Montessori texts available and the ideas put forth in other works. For example, scholars have used Montessori’s beliefs about peace through education to develop curricula with peace as an end-goal (Kahn, 2011; Kahn & Pendleton, 2017).

The group largely responsible for the advancement of high school Montessori methods is the North American Montessori Teachers of Association (NAMTA) in conjunction with the works of its leader David Kahn (Ludwig, 2011). Many of the Erdkinder materials and methods of teaching have come from NAMTA. Kahn was instrumental in the creation of one of the closest examples of a true Erdkinder in the United States, the Hershey Montessori Farm School, and is considered an expert in the field of Montessori high school education (Kahn, 2011; Ludwig, 2011). Kahn and
NAMTA were largely influential in the creation of an introductory program to Montessori high school education and the creation of an annual colloquium for interest on the topic.

In his work, Eight Pictures at an Exhibition: A Montessori Retrospective on the Discovery of the Adolescent, Kahn divided Montessori high school outcomes into four holistic education facets; moral, emotional, cognitive, and social (Kahn, 2011). Each of these holistic education facets included a series of student outcomes based on his review of the Montessori literature. Kahn intended for these outcomes to serve as a foundation of formal research on Montessori high school education. Kahn (2011) intended for his outcomes to “go beyond the typical education outcomes and examine the social goals aimed at understanding the whole personality” (p. 25). Through these goals, Kahn provides a format for examining Montessori high school outcomes beyond the standard educational outcomes.

**Student Perceptions of Montessori Schools**

By gathering the essence of high school student’s perceptions, this study may provide additional insight into how students construct and interpret their academic experiences within Montessori schools. Additionally, this study is expected to provide a deeper understanding of these high school student’s lived experience. Smith (2010) conducted a study to describe the Montessori school experiences of high school seniors and to gain insight into their developed academic self-efficacy. Three themes emerged from the study. The first was Transcendence of Self-Reliance, which noted the participant’s preference for individualized work plans, their freedom to select activities, an uninterrupted three-hour work cycle, and peer teaching. The second theme was the
Development of Leadership Skills, which reflected the participant’s experiences of peer teaching and the development of community in the Montessori classroom, which helped adolescents develop independence, confidence, and responsibility. The third theme was Learning from Multi-aged Peers, which fostered respect, cooperation, responsibility, and appreciation for diversity.

Basumatary and Ye (2016) used a quantitative methodology to investigate the relationship between grades fourth, fifth, and sixth grade student’s perceptions about Montessori teaching method and their achievement. The study was conducted to determine student’s: (1) perceptions towards Montessori teaching method; (2) achievement by the use of Montessori teaching method; (3) perceptions towards Montessori teaching method and their achievement; (4) perceptions towards Montessori teaching method among the different grades; and (5) achievement by the use of Montessori teaching method among the different grades. Findings from the study indicated that a significant relationship existed between student perceptions and their achievement and a statistically strong positive correlation between student perceptions and their academic achievement. The results also indicated that students who performed well had positive perceptions towards Montessori teaching method and that their perceptions of care, clarity, challenge, confer and consolidate were positively related to student achievement, whereas the constructs of control and captivate were neutral.

Vandiver (2005) also used a quantitative methodology to investigate student perceptions towards the Montessori teaching method and their academic achievement. The conducted research was on the correlation between student perceptions of school climate and positive student outcomes. Results from the study indicated a correlation
between student perceptions and American College Test scores. Findings also indicated a correlation between student perceptions on school climate and student performance in Missouri Assessment Program. However, there was no significant relationship between student perceptions of school climate and student achievement.

Keith (2014) used a descriptive, exploratory, qualitative study method to understand the perceptions of 13 high school freshman students who had earlier attended Montessori schools for at least six years. To collect data, Keith (2014), conducted in-depth, semi-structured interviews to specifically understand the construction of knowledge, opinion, and truth and viewed the influence of their Montessori education. Findings suggested that the post-Montessori upper freshman college students who were interviewed showed common characteristics that contributed to their enjoyment of college and their successful participation in higher learning such as self-direction and self-motivation, a love of learning perception that knowledge was viewed as truth or opinion, a developing sense of empathy for others and a responsibility to them, developing set of personal values that are used to evaluate situations and choose actions; an interest in exploring multiple perspectives; a perception of the self as being in the process of development; and a desire to eventually find work that is meaningful and contributes to the whole. Further, the findings showed that the participants felt their former Montessori experience influenced who they were, how they learned, and how they thought about learning and knowledge.

A synthesis of the studies conducted by Basumatary and Ye (2016), by Vandiver (2005), and by Keith (2014) all take into account adolescents’ perceptions of the Montessori program. However, the studies do not account for adolescent’s perception of how the Montessori experience leads toward independence versus the traditional school
experience. This study will be conducted through a different lens as those proffered by the researchers. Basumatary and Ye (2016) did not include the perspectives from the range of adolescents included in this study. Further, the study was not conducted in an urban school setting. Moreover, the study used a quantitative methodology rather than qualitative. Like Basumatary and Ye (2016), Vandiver (2005) also used a quantitative approach to examine the correlation of student perceptions, school climate, and outcomes. However, the study was conducted in an urban high school. In addition, the study was not conducted in the same US State as this study. While the study by Keith (2014) used a qualitative method, the study only examined the perceptions of freshmen high school students and therefore did not cover the classification range of the proposed study. The studies by Basumatary and Ye (2016), Vandiver (2005), and Keith (2014) also did not answer urban adolescents’ opinions of how the concepts of Erdkinder were brought to reality in an urban setting. Moreover, these studies did not address the ways in which student agency were a part of program development in an urban high school Montessori program.

While the research reviewed sufficiently answered their research questions, there is still much to learn about the student’s role in implementing a public urban high school Montessori program. Whereas no one methodology was used more than another, for the purposes of this study, I used a qualitative approach to be discussed further in the next chapter. Finally, the impact of these studies on my work, is that the qualitative studies provide knowledge for understanding student perceptions. The key pieces missing however, are implementation, the urban setting, Erdkinder, all tied to the third plane of development and student agency.
Connecting Literature and Research Questions

Research Question One states: From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience? In reviewing the literature, questions arise around the Montessori method as a reform initiative. Indeed, Montessori asserts, “the chief reform is to put the adolescent on the road to achieving economic independence (1948, p. 61). Dr. Montessori further asserts, “perhaps the failure of the secondary school is due to the fact that it uses methods of assimilation that are no longer suited for the development of the child” (1938, p. 35). Maria Montessori offers a departure from traditional schooling, a better way, her scientific pedagogy.

Research Question Two states: From the adolescent’s perspective, how well were the concepts of Erdkinder brought to reality in an urban setting? The Montessori method originated in an urban setting with disenfranchised students. While Erdkinder argues for adolescents to experience “life in the open air and sunshine to the greatest possible extent” (1948, p. 70), the essence and goal of Erdkinder is valorization. The process of valorization or growth through the Third Plane of Development must occur regardless of location, but especially in an urban setting.

Research Question Three states: In what ways were student agency evident in developing the urban high school Montessori program? Individual agency directs and guides student learning. Dr. Montessori refers to this as the prepared student (Montessori, 2012). Individual agency during the first and second planes of development moves a students from adult dependence, to interdependence with peers (second and third planes of development). As students progress through the second and
third planes of development and as their agency increases, they move to independence and liberty as a mature adult in the third and fourth planes of development (Montessori, 1912). Therefore, student agency is fundamental to the third plane of development, and thereby fundamental to this study as evidenced by the third research question.

Summary of Literature Review

The Montessori Method of education is rooted in student voice, student agency, and student ownership of learning (Montessori, 1912). Moreover, Montessori purported, “the fundamental principle of scientific pedagogy must be, indeed, the liberty of the pupil; - such liberty as shall permit a development of the individual, spontaneous manifestations of the child’s nature” (Montessori, 1912, p. 20). As such, one would expect to find more qualitative or even Participatory Action Research in study design. However, upon review of the existing literature on adolescent Montessori education, there were no obvious trends methods. For the purposes of this review, the mix of qualitative and quantitative studies were nearly half.

A survey of existing research literature revealed a dearth of research in public Montessori settings. This is amplified when including indicators such as students of color (Lillard & Else-Quest, 2006). A further search revealed little to no research exists on student perceptions in urban Montessori high schools. For this reason, public schools would benefit from qualitative studies that examine and identify best practices (Debs and Brown, 2017).
CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this study was to examine adolescents’ perspectives of their urban high school Montessori education, and their role in helping to develop a high school Montessori program in an urban setting. According to the National Center for Montessori in the Public Sector (2014), Montessori schools have increased to over 500 schools, educating over 100,000 students over the last nearly half-century. As this alternative to traditional schooling grows, understanding student voice will help teachers, school, and district administrators implement urban high school Montessori programs. The Montessori Method of education is rooted in student voice, student agency, and student ownership of learning (Montessori, 1912). Moreover, Montessori purported, “the fundamental principle of scientific pedagogy must be, indeed, the liberty of the pupil; such liberty as shall permit a development of the individual, spontaneous manifestations of the child’s nature” (Montessori, 1912, p. 20).

In this chapter, I begin with justifying the qualitative case study approach to answer the research questions. The chapter continues with the role of the researcher, context of the study, population and sample, ethical considerations, data collection and analysis, subjectivity, and statement of significance. The chapter concludes with a summary.

In Chapter Three, I described the methodology to gather and analyze
qualitative data needed to complete this study. In this study, I answered the following research questions: From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?

1. From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?

2. From the adolescent’s perspective, how well were the concepts of Erdkinder brought to reality in an urban setting?

3. In what ways were student agency evident in developing the urban high school Montessori program?

**Research Design**

After a review of the literature, it was clear to me that little is known about Montessori high schools or adolescent participation in the development of high school Montessori programs. For this study, a single instrumental case study was used (Stake, 1995; Creswell, 2013). According to Yin (2014), a single instrument case study allows the researcher to investigate multiple participant’s experience with one phenomenon. This study captured adolescent and parent perceptions (unit of analysis) from one public Montessori high school program (case). Therefore, this approach is most appropriate. Currently, there is one public high school in Kentucky with a Montessori program. This study was designed for the research site’s Montessori program.

I used semi-structured interviews to gather data. Transcripts were recorded
verbatim, coded into themes, then analyzed against Montessori’s vision for Erdkinder and literature on student agency and independent learning.

**Case Study Method**

*Context of the Study*

Two high schools in Kentucky offer Montessori education. One of these high schools (Montessori High School, Inc.) is a private school in the second largest city of the state, grades 9-12. Teachers facilitate learning through the Montessori Method to all students in all classes. The second high school (Central High School) is a public, urban school in the largest city in the state. Central High School offers traditional education, Montessori education, and eleven career and technical education (CTE) pathways. All Central students are a part of a CTE pathway, but not all students are a part of the Montessori magnet. As of the time of this study, Central High School is in its fourth year of Montessori education, as of the 2020-2021 school year. Central High School is in the state’s largest urban school district, Jefferson County Public Schools (JCPS). This school district includes two Montessori elementary schools (K-5), a comprehensive middle school (6-8) that houses a Montessori program, and Central, a magnet school in the urban core of the state’s largest city.

Central High School is one of two magnet high schools in JCPS that uses a criteria-based selection process for admissions. All students admitted to the school apply and are accepted through an admissions process. The school is a historically black high school. Central opened began operation in 1873 as Central Colored School. The name of the school changed in 1882 to Central Colored High School. Prior to desegregation, Central was the only public high school Black students could attend in the city of
Jefferson. Following Brown v. Board of Education in 1954, Central remained an all-Black high school through the end of the 1974 school year. Central integrated when the then Jefferson City Schools merged with Jefferson County Schools, creating a new school district, Jefferson County Public Schools (JCPS, archives). This brief historical overview provides further context of the urban setting in which Central High School operates and this study. According to Hatch (2002), the researcher must select a site(s) that will yield the data required to complete the study.

Population

As of the 2020-2021 school year, key demographics for JCPS include 96,304 students. Of all students in JCPS, 37% identify as Black, 40% identify as White, 13% identify as Hispanic, while additional races, listed as other, comprise 10% of the remaining population. As of the 2020-2021 school year, Central High School has 1304 students enrolled. Of this population, 72% identify as Black, 8% identify as White, 12% identify as Hispanic, and all other races (listed as other) comprise 8% of the remaining population. Of the 1304 students enrolled at Central, 894 (69%) identify as female and 410 (31%) identify as male.

As of the 2020-2021 school year, key demographics for Central’s Montessori magnet include 175 students, 120 (69%) identifying as female and 55 (31%) identifying as males. Of the 175 students in Central’s Montessori program, 36 are seniors that are a part of the original cohort as freshmen. Of this group of 36 original Montessori students, 15 (42%) identify as Black, 9 (25%) identify as White, 6 (17%) identify as Hispanic, and 6 (17%) are listed as other race. Further enrollment data reveal three students attended K-5 Montessori but attended a traditional middle school. Seven attended 6-8 Montessori
but, attended a traditional K-5 school. Four students attended K-8 Montessori and are now a part of the Central Montessori program. Twenty-two students began Montessori education as freshmen for the first time in their academic career.

Students at Central High School are enrolled in eight classes per year on a block schedule. The block schedule includes four classes on “A” days and four different classes on “B” days. Throughout the year, “A” and “B” days alternate consecutively each day. The Montessori program is limited to core-content classes (math, English, science, and social studies). Montessori students take electives and career and technical education courses with traditional teachers in a traditional setting. The four core Montessori classes are scheduled back-to-back, creating a 3 hour uninterrupted work time for students daily.

Sample

Due to the lack of urban Montessori high schools and/or programs and my ability to access the data, I selected Central High School’s Montessori program using convenience sampling. Moreover, because of the potential to capture voices of a unique group of students, I used purposeful sampling to interview only students in the Montessori program, rather than students at the site who are not a part of the Montessori program.

The Central Montessori program began with 44 ninth grade students in the 2017-2018 school year. Thirty-six of the original freshman cohort are seniors in the 2020-2021 class. Currently, the entire Montessori program encompasses 175 students total in grades 9-12 and is projected to have over 200 students in the 2021-2022 school year.

To gain access to participants, I utilized my personal and professional network to contact, notify, and invite participants to this study. The data were collected over a three-
week period from three sources: semi-structured interviews with graduated students, semi-structured interviews with parents of graduated students, and documents. I accessed documents from emails and files I saved during my time as principal. The potential participant pool included 36 students and their parents. Utilizing my personal and professional network, I emailed former students and invited them to this study (Appendix A). Using the contacts, I acquired during my time as principal, I contacted fourteen families that were a part of the Montessori program at the research site.

Descriptive data were captured by observation during the interview. Each participant completed a consent form to be stored for one year past completion of the study. I anticipated at least 18 of the 36 the students would participate. Eleven students and eight parents participated in this study. Therefore, the bounds of this study were alumni and parents of the 2021 graduation class of Central High School, in JCPS, who were in the Montessori program.

**The Role of the Researcher**

According to Sutton and Austin (2015), “the role of the researcher in qualitative research is to attempt to access the thoughts and feelings of study participants” (p. 226). My roles in this study are: 1) to honor the risk these students took in being the first ever Montessori students in a public high school in Kentucky, 2) to be true to the student’s voice without inserting my biases, and 3) to make-sense of the qualitative data in a way the yields actionable implications for policy, practice, and future research.

**Subjectivity & Positionality**

I attended Central High School from the fall of 1995 to graduation in the May, 1999. I formerly served as head principal of Central High School from July 2015 – June
In the spring of 2016, Central administration and teachers began exploring if a public high school Montessori program had been implemented and if this idea were feasible at Central. The Montessori program began implementation in August 2018. Further, I initiated the development of and oversaw Central’s Montessori program. Finally, I was intimately involved with recruiting the initial class of freshmen for this program. This allows a distinct viewpoint for this study (Coghlan & Brannick, 2010). Although I am no longer the principal at the research site, I maintain professional relationships with several families who were part of the program. Moreover, my study was conducted after I resigned my position as principal and became the Executive Director of Undergraduate Programs in the College of Business at the University of Louisville. My change in employment is another mitigating factor in recognizing inherent power and authority that comes with being a sitting principal conducting research at his or her school.

Due to my unique position, my study may be perceived as a type of Insider Research. According to Berkovic et al. (2020), “Insider research, occurs through a process of positionality…intentionally aligning one’s self-interests with one’s research (Jacobson & Mustafa, 2019). There are advantages and disadvantages of conducting insider research in the qualitative research sphere…potential disadvantages include compromised researcher objectivity and professionalism and participant misunderstanding of a researcher’s capacity” (p. 1). To avoid the disadvantages of Insider Research, I maintained awareness of any biases I may unintentionally bring to the research (Berkovic et al., 2020; Chavez, 2008).

Milner (2007) posits a four-component positionality framework that “guides
researcher into a process of racial and cultural awareness, consciousness, and positionality as they conduct education research” (p. 388). The four components are: 1) researching the self, 2) researching the self in relation to others, 3) engaging in reflection, and 4) shifting from self to system. For this study, the fourth component (shifting from self to system) most applicable. Milner asserts, “from a critical race theory perspective, issues of race and racism need to be situated in the broader context, not just on an individual or personal level” (p. 397). Due to the demographics of the sample, the nature of student agency in the Montessori Method, and my demographic as a Black researcher, I challenged my beliefs that may negatively influence how I interpret data. All interpretations remained unbiased and objective.

Finally, Milner highlights three dangers or pitfalls of education research: 1) color-and culture-blind research, 2) color- and culture-blind policy and document analyses, and 3) teacher education research. For this study, the first danger is most applicable. Milner purported, “color-blind and butler-blind research epistemologies and approaches can potentially lead to the dangers of exploitation and misrepresentation of individuals and communities of color” (p. 392). Due to the demographic of the sample, the majority of this sample had potential to be students of color, in a study designed by a person of color. Rather than try to silence- or over-amplify- the role of race and culture in this study, my role is to accurately capture adolescent voice, interpret the data, and identity implications for future research, policy, and practice.

Ethical Considerations

According to Creswell (2013), “we conduct qualitative research when we want to empower individuals to share their stories, hear their voices, and minimize the power
relationships that often exist between a researcher and the participants” (p. 48). My goal in this study was to capture adolescent voices regarding their role in implementing this program. Over the last four years (five years for some participants), I formed a strong positive bond with participants in this study. An ethical issue that may arise is containing any perceived gain from completion of this study. Further, I maintained confidentiality when/if participants spoke about current staff (myself included). Participants had freedom to share their story in confidence. For this reason, participants have pseudonyms in the data analysis and findings. Further, any staff about whom participants identify, also have pseudonyms or names omitted.

Data Collection

Creswell (2007) asserts data collection include multiple sources of information. In qualitative research, there are four primary types of data: observations, interviews, documents, and audiovisual materials (Creswell, 2013). For this study, I collected three sources of data, semi-structured interviews, and documents.

Due to the global pandemic COVID-19, out of an abundance of caution, and for the safety of participants and myself, seven interviews were conducted virtually using Microsoft Teams and one interview by phone. Three interviews were conducted in-person. I conducted and recorded all interviews. I used the Microsoft Team transcription tool to transcribe the recordings of interviews verbatim into transcriptions for data analysis. I checked for accuracy by replaying the recordings while reading the transcripts aloud. Interview data for this study were collected over a three-week period.

I began this study by seeking approval from the Institutional Review Board (IRB). I adhered to all rules, procedures, and regulations set forth by the University of
Louisville. After approval, I sought volunteer participants from the population described above. I secured consent forms from the volunteer sample.

Data Analysis

Creswell (2014) identifies the following steps to interpreting qualitative data: 1) organize and prepare the data, 2) read and visually inspect the data, 3) start coding the data, 3) use the coding process to generate themes, 4) summarize the findings including potential subthemes, and 5) identify the lessons learned. I followed these steps in analyzing data. Items 1-4 of this list are written in chapter four. Item 5 is written in chapter five.

Theoretical Framework

In her seminal work Erdkinder (1948), Maria Montessori asserts, “schools as they are today, are adapted neither to the needs of the adolescent not to the time in which we live” (p. 56). For this study, I developed a theoretical framework to analyze student responses. This framework combines elements of Erdkinder and the third plane of development. My goal with this framework was to examine the student experience for alignment with items identified in the framework, whether from Erdkinder or the third plane of development.

My interpretation of Erdkinder elucidated three areas Dr. Montessori prioritizes: 1) abandoning traditional schooling practices of external motivations (i.e., grades or marks for academic work), 2) school preparing students for economic independence, and 3) valorization through work, agency, and student voice. The confluence of these three concepts allows schools to maximize student maturation and embrace the spirit of Dr. Montessori’s method. The result of this approach are students who are able to adapt.
“Adaptability – this is the most essential quality; for the progress of the world is continually opening new careers, and at the same time closing or revolutionizing the traditional types of employment” (Montessori, 1046, p. 58).

Abandoning Traditional Schooling Practices

There are many reasons to abandon traditional school practices. Montessori points out,

“Young people in the secondary schools are compelled to study as a “duty” or a “necessity”. They are not working with interest nor any definite aims…that would give them satisfaction and a renewed interest. They are directed by external compulsion and their best energy is wasted. Adolescents right up to maturity, are treated like babies in the elementary schools…still subjected to the petty thread of “bad marks” with which the teach weigh up the work…like that of a measuring weight of lifeless objects…an on these marks the future of the student depends (1946, p. 59).”

School Preparing Students for Economic Independence

Whereas modern education reform focus on academic achievement as determined by standardized tests, Montessori argues “the essential reform is this: to put the adolescent on the road to achieving economic independence” (p. 61). Dr. Montessori asserts a practical end to learning, that being financial or economic independence. Whereas modern outcomes focus on recall through standardized tests, Montessori believed that the chief outcome should be the student’s ability to earn a living wage.

Valorization through Work, Agency, and Student Voice

Montessori further suggests, “we should like to suggest another institution,
which might become of great importance, and this is the shop” (p. 66). Here, Montessori argues that adolescent development and learning are intertwined and best expressed through real-world learning in a business setting.

To accurately capture and honor adolescent voices, interviews for this study were transcribed verbatim. I began analysis after each interview. Through the process of winnowing, I sought to identify the data that are most useful toward the research question (Creswell, 2014). Moreover, “the impact of this winnowing process is to aggregate data into a small number of themes” (2014, p. 195). I generated a qualitative codebook to analyze the transcripts. The codebook was populated by indicators that align with the Erdkinder framework, the literature review, and emergent themes identified while collecting data. I organized the codes under broad categories that aligned with the overall information presented in the data. All coding was done by me without the use of computer data analysis.

I reread the interview transcripts to code the data for emic (inside) code groupings using the process of sorting. I examined the coded data to construct strata of intricate analysis (Creswell, 2007). To further analyze the data, I incorporated characteristics of student voice and agency as identified in Dr. Montessori’s third plane of development and her seminal text for the adolescent, Erdkinder (Montessori, 1912; Montessori, 1973; Lillard, 2007).

To ensure validity of data, I used member checking to determine the accuracy of the findings (Creswell, 2014). To do this, I will share the “final report or themes back to participant and determine whether participants feel that the themes and data are accurate” (2014, p. 201).
Statement of Significance

Findings from this study are urgently needed for Central High School, as administrators, teachers, and students implement the urban high school Montessori program. Moreover, as Montessori expands into more public high schools, this research is needed for implementation in urban settings. Dr. Montessori’s approach to education was predicated on the need for human independence and autonomy as a foundation of human development (Montessori, 1913). Therefore, it is most appropriate that the corresponding research within the third plane of development include student perspectives and voices. The results of this study may provide insight for teachers, principals, and district administrators before- and during- implementing other reform initiatives.

Summary of Methodology

This chapter describes the context for the study, identifies the population and sample, locates my positionality and role as the researcher, justifies the use of qualitative methods to conduct the study, and prescribes my actions as a researcher to collect and analyze the data. Each subheading of this chapter is discussed with the most current data available. Finally, I relied on proven methodological approaches from leading methodologists of social science research.
CHAPTER FOUR: ANALYSIS AND RESULTS

Introduction

In this qualitative study, I examined adolescents’ perspectives of their urban high school Montessori education and their role in helping to develop a high school Montessori program in an urban setting. This chapter reports the findings of my study. This study sought to answer the following research questions: 1) From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience? 2) From the adolescent’s perspective, how well were the Montessori concepts of Erdkinder brought to reality in an urban setting? and 3) In what ways were student agency evident in developing the urban high school Montessori program?

This chapter begins with an exploration of my researcher positionality as the former principal of the school implementing the Montessori program undertaking research of the program I implemented. The next section reviews the study design and data collection procedures. Finally, I structure my analysis by organizing the discussions around my three research questions that guided my study.

Examining Researcher Positionality

As discussed in Chapter Three, I utilized Milner’s (2007) framework to test my positionality as researcher and principal during the time of program implementation. The first step in this process was to reflect on my experiences that precipitated and
influenced my position as principal and researcher. My first encounters with Central High School were in 1990 and predate my enrollment there as a student, when I was water-boy for the football team. My older brother and older cousins were then students at Central.

The 1990s saw Central going through a radical transformation from a failing urban high school to becoming a popular magnet school with relevant career-focused programs. These career-oriented programs were in place when I enrolled as a freshman at Central in 1995. They remained in place when I joined the faculty as a teacher at Central in 2005 and continued as I assumed the role of principal in 2015. Central’s career-oriented vision remained constant while the rest of the educational world caught up with their innovative thinking. In 1995, when I enrolled as a freshman at Central, few schools offered career programming such as nursing, law, technology, and business. By 2015 (when I became principal), most public high schools in Jefferson County offered similar programs to those long offered at Central. Further, the end goal of Central’s programs prior to 2015 (aside from the Law and Government magnet) was an industry certificate that opened doors to locally necessary positions, although low-wage jobs. Consequently, applications and enrollment had both dropped ahead of my arrival as principal.

Magnet schools are schools that offer specialized programming not found in neighborhood schools. Examples of these specialized programs include performing arts, STEM (science, technology, engineering math), and Self-directed learning. Students enroll into these programs through application or lottery. As the principal of a magnet high school, I believe two functions of the magnet program are: 1) to attract diverse
students and 2) to provide marginalized students access to programming that would otherwise not available in their student’s reside/home school. Most of all, I believe magnet school programming should provide students with the critical thinking skills required for a prosperous career in the 21st century.

Milner (2007) further asserts that researchers should reflect on their position in relation to other people. My position in relation to participants and the program afforded me a high level of trust, power, and authority with participants and insights into the context of responses. When the decision was made to bring the Montessori program to Central, I called many of the participants personally while they were in eighth grade to invite them to the program. Other study participants were students in the feeder middle school Montessori program. The Central staff and I worked closely with the feeder program staff and families during our planning years to establish and build the beginning of the program. Though I did have relationships with the participants in the study for their four-year high school experience, at the time of the interviews, all participants in this study had graduated from high school and I am no longer principal of Central. Though the participants and I have no ties or reason to remain in contact, several students and their parents have reached out to me during their first semester of college to provide me updates on their progress. Moreover, at the time of data collection, I had resigned my position as principal at Central to assume the role of Executive Director in the College of Business at the University of Louisville. Therefore, during my study, myself and participants did not have an active tie to Central High School.

I took care to design my study such that student voices were documented and analyzed to understand their experiences, understand what did and did not work, and
guide future implementation for urban high school Montessori programs. Throughout collecting and analyzing data, I was aware of my biases and positionality by engaging in structural ethical reflection (SER). This process allowed ample examination of my research process and not on my personal experiences and knowledge. According to Stevens et al. (2016), SER guides researchers through the process of uncovering values and identifying how principles are realized in research. My goal in this study was to capture adolescent voices regarding their role in implementing an urban, public, high school Montessori program. This research could not have been completed without the graduates of this program and their parents. To ensure an accurate reflection of the student experience and their voice, I adhered to the words they presented, thereby increasing the reliability of this study.

**Data Collection and Analysis**

The data were collected over a three-week period from three sources: semi-structured interviews with graduated students, semi-structured interviews with parents of graduated students, and files I possessed from time serving as principal. The potential participant pool included 36 students and their parents. Utilizing my personal and professional network, I emailed former students and invited them to participate in this study. I contacted 14 families that were a part of the Montessori program at the research site as evidenced in my enrollment files from my time as principal of Central. Three families declined participation due to scheduling conflicts that never reconciled. I maintained a contact log while identifying participants. This contact log included phone numbers, emails, attempts to contact, dates of contact, and dates of agreement to interview.
I conducted 11 semi-structured interviews. In four interviews, parents and students requested to conduct their interview simultaneously rather than as individuals. Seven interviews were conducted via video conference using Microsoft Teams, one interview was conducted in the family home, one interview was conducted at the family church, one interview was conducted by phone, and one interview was conducted on campus at the University of Louisville. Each interview location deviation from the methodology outlined in Chapter Three was at the request of participants. All interviews were recorded using Microsoft Teams including in-person and phone interviews. I used the Microsoft transcription tool during recording, then played back the transcription and verified the accuracy of the transcription. I made corrections to the transcriptions as necessary. Transcripts were shared with participants, providing them with a chance to review them for accuracy.

**Coding and Erdkinder Themes**

Each interview allowed participants the opportunity to share their experiences and, for the students interviewed, viewpoint of their role in implementing the urban high school Montessori program. All responses were coded into themes using the In Vivo method of coding (Saldana, 2013). My coding process consisted of reviewing the data for accuracy, exploring the data for recurring themes, creating codes using the In Vivo method, and combining codes into themes. As mentioned in Chapter Three, I created a framework based on Erdkinder and the Third Plane of Development. I used this framework to analyze the data and identify alignment between responses and seminal Montessori writings. In this framework, I align specific concepts found in both texts with each research question. The following discussion highlights the intersection of student
responses with the theoretical framework.

Research Question One asked, “From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?” Through Research Question One, I sought to identify the three fundamental characteristics from Montessori’s seminal adolescent works that are necessary for an urban adolescent Montessori experience: abandoning traditional school practices, development of social policy, and development of the interpretive mind.

Research Question Two asked, “From the adolescent’s perspective, how well were the Montessori concepts of Erdkinder brought to reality in an urban setting?” Through Research Question Two, I sought to identify the two fundamental characteristics from Montessori’s seminal adolescent works that are necessary for an urban adolescent Montessori experience: school preparing students for economic independence and students developing their sense of justice and dignity.

Research Question Three asked, “In what ways were student Agency evident in developing the urban high school Montessori program?” Through Research Question Three, I sought to identify the two fundamental characteristics from Montessori’s seminal adolescent works that are necessary for an urban adolescent Montessori experience: valorization through work, agency, and student voice and students developing personal independence and social independence.
Each research question and the interview protocol were based on elements of Erdkinder and The Third Plane of Development. I organized student responses into codes and themes. In the following section of tables and discussion, I identify where the themes and codes align with seminal elements from Erdkinder and The Third Plane of Development, as identified in the theoretical framework. This section provides an overview of the data with regard to alignment with the theoretical framework. Subsequent sections include further analysis of student and parent voices.

In analyzing the data from Research Question One, 11 of the 12 participant’s codes aligned with Third Plane elements and nine of the twelve codes aligned with Erdkinder elements or were consistent with what Montessori identified as elements of the adolescent experience. Each code in RQ1 directly aligned within the theoretical

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**Table 1. Theoretical Framework**

<table>
<thead>
<tr>
<th>Erdkinder Elements (Adaptability)</th>
<th>Third Plane of Development Elements (Help me do it, alone)</th>
<th>Research Question Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abandoning Traditional Schools Practices</td>
<td>Development of social policy, reflective/interpretive mind</td>
<td>RQ 1</td>
</tr>
<tr>
<td>School Preparing Students for Economic Independence</td>
<td>Sense of justice, dignity</td>
<td>RQ2</td>
</tr>
<tr>
<td>Valorization through Work, Agency and Student Voice</td>
<td>Social independence, interdependence, toward adulthood</td>
<td>RQ3</td>
</tr>
</tbody>
</table>

---
framework, whether in Erdkinder of the Third Plane of Development. In reviewing the data, at no point did a theme or code complete misalign with Erdkinder or the Third Plane of Development. This is an important observation. As other researchers have noted, Montessori never fully articulated her vision of adolescent learning (LaRue, 2010; Lillard, 2007). Whereas Montessori spent significant time developing her method for Planes One and Two, members of the adolescent Montessori community primarily use these two seminal texts to build student experiences. While younger grades may enact the letter of Montessori, adolescent teachers and leaders enact the Spirit of Montessori. In 8 of 12 codes, student responses aligned to both Erdkinder and the Third Plane of Development. Based on student responses, the last two themes were most consistently represented in the data.
Table 2. Research Question 1 Student Codes and Themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Erdkinder Elements</th>
<th>Third Plane of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Ownership of Learning</strong></td>
<td>Trailblazing</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Self-paced</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Self-discovered</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td><strong>Teacher Driven vs. Teacher Supported Instruction</strong></td>
<td>My Montessori classes prepared me for college independence</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Modeled my work after teacher</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Students searching for own knowledge</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td><strong>Learning the Montessori Method</strong></td>
<td>Figuring out the work plan and annotating</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Learning how to learn</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Students had misconception of Montessori</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td><strong>Personal Independence, Social Interdependence</strong></td>
<td>Teacher was there for support</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>See tables and not desks</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Group work and team leadership was normal</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

When analyzing parent responses to Research Question One, I identify alignment where possible between responses and the theoretical framework. Similar to the student responses, the majority of responses align to Erdkinder and/or the Third Plane of Development. Although 5 of the 8 codes align, one key difference surfaces from the parent perspective from the student perspective. From the parent perspective, one code neither aligned to Erdkinder or The Third Plane of Development. Whereas all student codes in RQ1 aligned to at least one seminal text, the content versus student code is not supported in either text. According to at least one parent, their student’s experience was
more about academic content more so than the individual student development. This experience is in direct contradiction to the ideals espoused in both documents. Although Montessori never disregards academic knowledge, she argues for a wholistic approach to learning. Montessori asserts:

On the contrary, education must be very wide and very thorough, and not only in the case of the professional intellectuals, but for all men who are living at a time that is characterized by the progress of science and its technical applications. They must understand the complex problems of our times, otherwise they are just a pair of hands acting without seeing what relation their work has in the pattern of society. (1948, p.58)

Table 3. Research Question 1 Parent Themes and Codes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Erdkinder Elements</th>
<th>Third Plane of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Care and Commitment to the Program</td>
<td>Pride in starting the program</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Early Struggle in the Program</td>
<td>First year was a big challenge</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Experience was about the content versus the student</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Lack of Coherence from Elementary-middle-high</td>
<td>I wish this program was under one roof, K-12</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

In analyzing the data from Research Question Two, 9 of the 13 participants’ codes aligned with Third Plane elements and nine of the thirteen codes aligned with Erdkinder elements or were consistent with what Montessori identified as elements of the adolescent experience. Whereas all student codes in RQ1 aligned to Erdkinder or the Third Plane of Development, all but one student code in RQ2 aligns to Montessori’s seminal texts. The one code that does not align is students feeling stuck in the classroom.
This is one code among nine other codes to generate the overall theme of ‘real world learning’. In this case, students were highlighting the differences between their traditional classes and their Montessori classes. In traditional classes, students were stuck in their classrooms, but not in their Montessori classes.

Table 4. Research Question Two Student Themes and Codes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Erdkinder Elements</th>
<th>Third Plane of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real World Learning</td>
<td>Field Trips</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Washington, DC</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Worldfest</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Learned to cook</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Start a fire</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Camping trip</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Stuck in a classroom</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Taking hikes</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Garden behind school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lacking Financial Preparedness</td>
<td>Learned to budget</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Search for answers</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Technology as a Tool versus as a Product</td>
<td>Use our own brains</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Tool to learn</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When analyzing parent responses to Research Question Two, I sought to identify alignment where possible between responses and the theoretical framework. Data from research questions two and three yield one theme per question from parents. The data from parents on this question completely aligned with elements of Erdkinder and the Third Plane of Development. Whereas the student perspective lacked full alignment, the parent perspective aligns with key elements of the
adolescent experience. Whereas student perspectives and codes focused on specific events or trips, the parents understood and spoke to the bigger picture. Research question two sought to understand how Erdkinder was realized in an urban setting. The parent perspective highlights the cosmic nature of Montessori education. That is to say that student learning and development is in the context of a bigger reality. When given space to reflect on the student experiences, parents generated transformative codes rather than event-based codes.

*Table 5. Research Question Two Parent Themes and Codes*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Erdkinder Elements</th>
<th>Third Plane of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience Starting a Program as Simulation of Life</td>
<td>Camping trips were great</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Alaska changed my child</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>First year was real-world</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Process</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Data from Research Question Three indicate 6 of the 10 participants’ codes aligned with Third Plane elements and seven of the ten codes aligned with Erdkinder elements or were consistent with what Montessori identified as elements of the adolescent experience. Although the data indicate the majority of codes aligning with the theoretical framework, this data set indicate the first significant gap in the student experience. Classroom agency was a theme for RQ3. However, the table below indicates students lacked agency in the classroom. While students cited giving leadership and voice to the overall program, students indicated they lacked meaningful voice in the classroom. The codes here indicate a desire for more
structure to handle two simultaneous transitions, one to high school and the other to high school Montessori. Although the student and parent voice are further analyzed in subsequent sections, it is important to note the Faculty and Staff Support theme. In the data we see consistent agreement that while the program was far from perfect or ideal, the faculty and staff engagement was above par. The data in the table elucidate full alignment of student experiences and student perceptions of faculty and staff.

*Table 6. Research Question Three Student Themes and Codes*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Erdkinder Elements</th>
<th>Third Plane of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Programmatic Agency</strong></td>
<td>COVID messed it up</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Montessori Student Council</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Student surveys</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Community meetings</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td><strong>Classroom Agency</strong></td>
<td>Wish there were more established boundaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transitioning to high school while also transitioning to Montessori</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Make your own work plans</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>More outside opportunities</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Faculty and Staff Support</strong></td>
<td>Supportive teachers</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Teachers and administrators always open</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

When analyzing parent responses to Research Question Three, I sought to identify alignment where possible between responses and the theoretical framework. Data from research question three yields one theme and four codes from parents. While the data from parents on this question do not completely align with elements
of Erdkinder and the Third Plane of Development, a consistent thread is present between student and parent responses. Like the students, parents through there were too much choice, or not enough boundaries early in the program. Similarly, a gap in the data is evident when discussing whole child learning vs an intense focus on academic achievement. This data point is consistent with responses in RQ1.

Table 7. Research Question 3 Parent Themes and Codes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Erdkinder Elements</th>
<th>Third Plane of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmatic Agency</td>
<td>Patience</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Heard Concerns</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Whole Child vs. Test Score</td>
<td>Too much choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y'all listed</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

**Participant Profiles**

Table 8 below identifies participant’s pseudonyms, gender, race, and whether they are parents or students. The racial make-up of student participants includes six black, three white, one two or more races, and one Asian student. The gender make-up of student participants includes seven males and four females. All eleven students are cited in this study. The racial make-up of parent participants includes four Black, three White, and one Asian parent. The gender make-up of this study includes three males and five females. Two male parents and one female parent are sited in this study.
Table 8. Demographics of Students and Parents

<table>
<thead>
<tr>
<th>Name*</th>
<th>Gender</th>
<th>Race</th>
<th>Student</th>
<th>Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joseph</td>
<td>Male</td>
<td>White</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Chris</td>
<td>Male</td>
<td>White</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Ebony</td>
<td>Female</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Adrian</td>
<td>Male</td>
<td>Multiracial</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Marcus</td>
<td>Male</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Denise</td>
<td>Female</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Alex</td>
<td>Male</td>
<td>Asian</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>John</td>
<td>Male</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Leah</td>
<td>Female</td>
<td>White</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Denise</td>
<td>Female</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Larry</td>
<td>Male</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Randy</td>
<td>Male</td>
<td>White</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Yolanda</td>
<td>Female</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Alphaeus</td>
<td>Male</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Ann</td>
<td>Female</td>
<td>White</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Michael</td>
<td>Male</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Jessica</td>
<td>Female</td>
<td>White</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Aria</td>
<td>Female</td>
<td>Black</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Kamala</td>
<td>Female</td>
<td>Asian</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

*Pseudonyms were used to protect the identity of the participants

Adolescent’s Perspectives of Independent Learning in Dichotomous Settings (RQ1)

My first research question was: From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience? The first theme that emerged to answer the first research question was student ownership of learning. This theme was evident in hearing students describe their pride in being part of the inaugural Montessori class. Joseph said, “I didn’t realize it then, but I think somehow knowing that we were the first class to do this (Montessori high school) was a motivator to do well in class.” This ownership of learning was also evident when students mentioned learning the steps to complete a
required work plan and eventually design their own work plan. Alex said, “I really struggled with work plans at first, especially because each teacher was using a different format for workplans. Eventually, I started making my own work plan and I found out what worked for me.”

The following table outlines codes and themes identified during analysis for Research Question One.
<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Jose</th>
<th>Chris</th>
<th>Ebo</th>
<th>Adrian</th>
<th>Marcus</th>
<th>Denise</th>
<th>Alex</th>
<th>John</th>
<th>Leah</th>
<th>Taylor</th>
<th>Larry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Ownership of Learning</td>
<td>Trailblazing</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-paced</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-discovered</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Driven vs. Teacher Supported Instruction</td>
<td>My Montessori classes prepared me for college independence</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modeled my work after teacher</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Students searching for own knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Learning the Montessori Method</td>
<td>Figuring out the work plan and annotating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Learning how to learn</td>
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<td>Students had misconception of Montessori</td>
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<tr>
<td>Personal Independence, Social Interdependence</td>
<td>Teacher was there for support</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>See tables and not desks</td>
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<td>Group work and team leadership was normal</td>
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The second theme that emerged was teacher-driven versus teacher-supported instruction. Questions 4, 5, and 6 of the interview protocols support the first research question and shed light on the student experience in two different learning settings. All students in this program experienced Montessori classes for math, English, science, and social studies. However, students also experienced traditional classroom environments in elective and CTE courses. This unique perspective allowed students to speak to differences between the two approaches to teaching practices and their learning. Student responses here indicate a consistent difference of experiences between traditional classes and Montessori classes. Teacher-driven versus teacher-supported themes were the most prevalent in relation to this research question. As previously mentioned in the literature review, during the third plane of development, children transition to adulthood or maturity, and develop socially from being wards of their parents to being free individuals, free of adult-to-child influences.

However, this study highlights two unique experiences in the same school where students encounter increased or constant adult academic direction which actively works against what students need after high school. One student, Chris, said, “our Montessori classes allowed freedom to fail and learn, and that’s ok…but our regular classes were all about the teacher’s plans and material”. Another student, Ebony, said, “college is actually easier than high school in some ways, not because of the content, but because I know how to manage my time and I know my learning style. Many of my college classmates are struggling learning how to learn on their own”. When asked about how this ‘learning how to learn’ took place, Ebony said,
“so if you like to make flash cards great, go ahead and make flash cards. If you like to make outlines, great, go ahead and make outlines, but it’s whatever best fits the student…it’s like the teachers cared more about us learning how to learn, than learning the material”.

This approach to learning did not happen without incident or great effort.

The third theme that emerged was learning the Montessori method. Learning the Montessori method meant coming to consensus on a common understanding of the key tenants of Montessori education. Whereas some students thought Montessori meant a packet of work per week, other students thought it was complete isolation. Similarly, some teachers thought the Montessori work plan should span one week with one standard, while other teachers thought the work plan should span two weeks with multiple standards. This learning was for students and for teachers. Every participant mentioned programmatic struggles during the first year of the program. Ebony said,

“for a long time, students kind of had a misconception of what Montessori was…like it’s where you just have to teach yourself and the teachers do not help you at all…I think they’re there for support, but only when you need them”.

Another student, Adrian, said,

“I really struggled that first year because I felt too alone. I felt like our teachers were too focused on letting us figure things out on our own, we did not have the guidance needed to learn how to do the work the first time”.

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Every participant mentioned the staffing changes between the first and second year. During this time between years and in subsequent years, teachers in the program received Montessori training through the Cincinnati Montessori Secondary Teacher Education Program. This theme of first year struggles and learning the Montessori method was echoed in responses from parents. One parent, Randy, specifically mentioned the need for a k-12 Montessori school wherein students, parents, and faculty could all speak the same Montessori language. He said, “a lot of our problems would have been avoided if only we could keep groups of students lumped together all the way through…when you mix them up like that (separate k-5, 6-8, 9-12), you get different approaches which makes it harder on the students”. When speaking of his hopes for the program, Randy said, “I really wish they would have spent more time with students as individuals rather than as much whole group that first year”. This parent and student had experienced all levels of Montessori, pre-k to 12th grade.

The final theme that emerged for Research Question one was personal independence and social interdependence. This theme was consistent throughout the study. Montessori asserts, independence has more educational than practical value; that is to say, it has a closer connection with the psychology of the adolescent than with an eventual actual utility” (1948, p. 61). For the research question, students mentioned the learning environment differences that contributed to working alone, but also in teams and groups. Ebony said, “most of the time in Montessori classes, you’ll see more tables and not desks, they want you to work with your classmates, learn from your classmates and get feedback from your classmates…but in more so traditional classes, everybody has their own desk. Everybody goes to the teacher for answers, the teacher is in the front of
the class and they’re teaching, telling students to do this and that…they really don’t give the students freedom to choose how to go about the assignment.” Chris added, “it’s not like they (Montessori teachers) don’t lead the class at all, but they kinda set the tone for the class and they let you like work your way, sometimes with a friend, and sometimes solo.” Joseph had this to say about independence in Montessori classes versus traditional classes, “we only had usually 13-15 students in class and it wasn’t desks, it was more tables and we would have conversations and seminars…I think this education (Montessori) helps you know, encourages students to want to learn instead of the traditional way, making grades as something more important that actually learning”. In Erdkinder (1946), Dr. Montessori asserts a problem with traditional schooling, “at fourteen or sixteen they are still subjected to the petty threat of “bad mark” with which the teacher weighs up the work of boys and girls by a method that is just like that of a measuring the material weight of lifeless objects with the mechanical aid of a balance” (p. 59). Ebony underscored her understanding of the differences between Montessori and traditional schooling,

“yeah, I think I understand what Montessori is because I better understand how we could change traditional schooling, ‘cause for a long time I feel like traditional schooling hasn’t really helped, especially students like me who don’t have parents who are educated, but Montessori kind of helps you learn the importance of education and the importance of having knowledge…because instead of the teacher just sitting in front of the class telling you to do this,
do that, have it by tomorrow, Montessori is like encouraging you, OK, like make learning fun because your actually get to do what you want and how you wanna do it”.

**Adolescents’ Perspectives of Erdkinder in an Urban Setting (RQ2)**

Research Question 2 asked, “From the adolescent’s perspective, how are the concepts of Erdkinder brought to reality in an urban setting?”

To answer Research Question 2, I identified four salient quotes from the Erdkinder text, then built questions around those quotes. Each student in the Montessori program takes a prescribed elective course titled Erdkinder. In this course, students do not read the Erdkinder text. Rather, the teachers expose students to concepts outlined in Erdkinder. Three themes emerged from adolescent’s perspectives of Erdkinder in an Urban setting: real-world learning, lacking financial preparedness, and technology as a tool more than a consumable. One parental theme emerged: experience in the Montessori program was a simulation for real life.
### Table 10. Research Question Two Codes and Themes

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Joseph</th>
<th>Chris</th>
<th>Ebony</th>
<th>Adrian</th>
<th>Marcus</th>
<th>Denise</th>
<th>Alex</th>
<th>John</th>
<th>Leah</th>
<th>Taylor</th>
<th>Larry</th>
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<td><strong>Lacking Financial Preparedness</strong></td>
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<td><strong>Technology</strong></td>
<td>Use our own brains</td>
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<td>as a Tool versus as a Product</td>
<td>Tool to learn</td>
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Regarding students being able to confront the unforeseen difficulties of real life, student experiences differed, but shared similar perspectives. Marcus said, “so when it came to not just schoolwork in general, some teachers said bluntly, that there’s gonna be problems in the world that you’re going to have to face. And so rather than just kind of hiding that, they kind of give us challenging obstacles”. I asked Marcus to elaborate on
these obstacles...” we had, uh, like projects we had to do of course, but I like to be by myself and so my teacher knew this. She put me and other introverts in group together and put us in some really uncomfortable leadership and task roles, ‘cause I’m not that good with working with people.”

While some student perspectives of Erdkinder in an urban setting were at times divergent other points were consistent in all interviews. For example, all students in this study mentioned camping trips and travel as a highlight of their Erdkinder experiences. Not only did every participant mention camping trips, but all responses were also positive. Students’ camping and getting into nature is consistent with what Dr. Montessori described. “The child should no longer be restricted to the environment of the school, nor be so close to the family from which he depends; he wants to ‘live’ society. He should go further away” (1971, p. 8). Earlier, Montessori asserts, “it is helpful to leave the accustomed environment of the family in the town and go to the quiet surroundings in the country, close to nature. Here, an open-air life, individual care, and a non-toxic diet must be the first considerations in organizing a “‘centre for study and work’” (1948, p. 61). Denise underscored this idea saying, “and so we were kind of study newtons laws of motions and stuff like that and kind of see how that relates to the forest where we camped”. Alex added, “we loved the camping trips...because we got to learn in real ways in real places”. After the fifth interview and noticing that all students spoke of camping with such excitement, I asked what was special about the camping experiences. John said, “for me the learning came alive, it was real, we were not just reading about science, we were seeing it in real life.” John added, “the thing that really made camping special was the freedom and pressure to perform, to survive, to cook, to
plan, and we just didn’t get that anywhere else…they gave us a taste of real life”.

Although John and other students did not mention RQ1 directly, their sentiment harkened back to their perspectives in RQ1 around “help me do it, alone”.

Larry elaborated on the real-life aspect of Erdkinder, “Ms. Jones gave us an assignment to look at the problems we have like homelessness, and we had to come up with a project to make little houses for them or whatnot. We never got to do it because of COVID, but this real-world situation is what I remember.” This example specifically speaks to the role of students developing their sense of justice which aligns to the Montessori framework for the third plane of development.

The second theme that emerged was a lack of financial preparedness. When speaking of the Erdkinder class and the program overall, Chris said, “it didn’t really help with financial problems or situations that much. In other classes, I can’t remember which one it was, we did talk about seeking jobs and new opportunities”. Another student agreed, “we didn’t really talk about money directly, you know, as a part of class”. In reviewing documents, I did not find instances planning geared to helping students toward economic independence. Although there were not specific instances of planned, curricular experiences, Ebony happened upon financial independence while preparing for a trip. She says, “I wouldn’t say the program, but a teacher who is a part of the program helped me with achieving economic independence. We were going on a trip for the program, and I didn’t have the money. I told Mr. Jones (the teacher) I wouldn’t be able to go. He told me that within the time that we had, I would be able to save for it. I said I just don’t know how to do it and so he said, ok, sit with me and he kind of taught me how to do a budget and I told him how much I make per hour and every month. And we made
that budget and each week, like 2-3 weeks he would come back and check in with me and say, ok, where’s your money. And every week I was just growing and seeing my back account growing with the budget that he taught me how to do and some of my own strategies and sure enough I was able to go on the trip. What I learned from him is what I still use today. He even taught me how to do retirement accounts too, so I opened up one because Mr. Jones told me to.”. While this story is inspirational, it is also only one student’s experience. In the final chapter, I will reference this experience and make recommendations for including this type of experience as a part of the Erdkinder curriculum.

This final theme for RQ2 is technology as a tool. The term Erdkinder is translated in English as “children of the Earth” or “land children”. Throughout the seminal essay titled Erdkinder, Montessori argues that adolescents understand civilization, work, and their place in the world through agriculture. Erdkinder was written during a time when agriculture played a different role than today. Rather than an agrarian culture, we now live in what some call the Fourth Industrial Revolution (Doucet, Evers et al. (2018). Just as methods of generating economic stability have changes, so too have methods of learning changed. Part of my protocol assumes that Dr. Montessori would espouse ever-changing tools in her scientific method of learning. Montessori said, “Education must be very wide and very thorough, and not only in the case of the professional intellectuals, but for all men who are living at time that is characterized by the progress of science and its technical applications” (1948, p. 58). For this reason, I asked participants to imagine how Montessori would use technology in her method. Responses here were mixed, with seven student imagining Montessori including
technology and four students believing she would not include technology. The purpose of this questioning was not to learn if students thought she would use technology only. I was more interested in students’ perceptions of how the technology would be used. With that said, the students who did not think Montessori would use technology viewed Montessori education as an experience that must include camping, being of-the-earth, or a very literal understanding of her writing. Chris said, “I don’t think she would incorporate too much technology because she, kind of, from what I understand, she wants us to use our own brains and knowledge to learn…instead of giving us calculators and computers and you know, Google just gives you the answer but they don’t really allow you to find it for yourself, so in that way, I think maybe in math courses, but definitely not TI-84 calculators”. Martin’s mother, Yolanda, added, “I don’t see her finding values in technology at all really, besides maybe like a GPS, if you get lost, but other than that, I don’t see where technology is something that is necessary for the program”. Conversely, Leah said: “

I think she would do it similar to what we’re doing now, because what the schools are doing with technology, I think it’s very good, not just messing around on social media, but using it as tool to learn. I think with the amount of computers and smart screens we have in classrooms, learning without technology is kinda like building a house without power tools…yeah, you can do it, but it’s a lot harder”.

Ebony echoed this idea stating, “technology isn’t going anywhere so why would anybody try to learn without it?...she would absolutely use technology, but only in a way
that helps, not like a distraction or something”.

The only parent theme that emerged for this research question was that the program was a simulation for real life. Here again, parents underscored the reality and difficulty of starting a new program. Ebony’s mother commented, “yeah, we knew going in that there would be ups and downs, because it (the program) was new. The thing I had to keep telling Ebony what that this was nothing compared to real life and that we had to do our part to make it work”. Another parent added, “I’m glad you made the changes you did when you did because it was not working and sometimes that’s the way life is. I would rather my child learn this type of lesson now, rather than later in life”. Other parents cited the travel as learning opportunities. John’s father, Alphaeus said, “I really think the trips camping, to Alaska, and the college trip really helped the students start to learn about planning, budgeting, and that you just can’t go somewhere without a plan and without money.”

As mentioned in the literature review, Maria Montessori first developed her method with students who, by today’s standards, would be identified as living at or below the poverty line. Economic independence therefore is for the benefit of improving the human condition and the person’s sense of dignity and sense of justice. Montessori (1948) hypothesizes, “so even if a boy were so rich that his economic security seemed above all the vicissitudes of life, he would still derive great personal benefit from being initiated in economic independence. For this would result in a “valorization” of his personality, in making him feel himself capable of succeeding in life by his own efforts and on his own merits, and at the same time it would put him in direct contact with the supreme reality of social life” (p. 61). From Montessori’s perspective, the most
An important aspect of education reform is to put the adolescent on the road to achieving economic independence.

**Adolescent’s Perspective of Agency in Developing the Program (RQ3)**

Research Question 3 asked, “In what ways were student Agency evident in developing the urban high school Montessori program?” To answer research question three, I asked three questions to encourage participant reflection of their role in program implementation. Three themes emerged for students: 1) programmatic agency, 2) classroom agency, and 3) strong faculty and staff support. One parent theme emerged in the data: programmatic. This theme aligned with the first theme identified in the student responses.

The first theme that emerged for research question three was programmatic agency. Two students and parents recalled Montessori community meetings that took place during the student’s 8th grade year. Central teachers and administrators hosted two meetings during the student’s recruitment year to seek student voice into the design of the program. The two families who reported participating spoke highly of these meetings. One meeting was held at Westport Middle School, the middle school that housed a Montessori program. The second meeting was at Central High school. Both families reported high levels of confidence and trust established in these meetings.
### Table 11. Research Question Three Codes and Themes

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<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Josep</th>
<th>Chris</th>
<th>EBon</th>
<th>Adrian</th>
<th>Marcus</th>
<th>Denis</th>
<th>Alex</th>
<th>John</th>
<th>Lea</th>
<th>Taylor</th>
<th>LARRY</th>
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<td>Transitioning to high school while also transitioning to Montessori</td>
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<td>Make your own work plans</td>
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<td>Teachers and administrator always open</td>
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Based on timelines the students shared, in the first year of the program, students provided input into the direction of the program and their overall experience in the program. Regarding her agency in developing the Montessori program, Denise said, “any time I gave input or direction, even if I was met with a ‘no’, it was temporary or it was ‘no’ because of XYZ, not just a ‘no’. There was always a reason behind the madness, and I think a lot of our teachers wanted us to kinda do whatever our hears desired, so they often pushed for us to do the things that we wanted to do, go after the things we wanted to do, come up with the idea, sit down and say, ok, I’m willing to put time into this…so they almost kinda always had a very optimistic nature to them, but I think it was never really like a concern in my mind whether or not something was possible, just more or less when.”

All students in the study also mentioned their agency in designing intersessions, the college trip, the Alaska trip, or the street festival. Four of the eleven students mentioned how much COVID disrupted their senior year, and subsequent plans for the program.

As the program progressed, teachers began seeking more input into activities inside and outside the classroom. Larry reports, “when it came to schoolwork, Mr. Johnson and Ms. Rothstein regularly asked us for feedback on their work plans. We would have a list of articles to read and annotate, a list of videos to watch, and we had to choose based on what we thought was interesting, but we still learned.” Denise said, “um, like it was math, science, English where we got difference assignments and a lot of
voice, not the program as a whole”.

All students and parents report many challenges during their freshman year. Of the eleven students interviewed, three experienced Montessori education in JCPS since pre-k or kindergarten, one had elementary Montessori experience, but not middle school, and the remaining students began Montessori education in the 9th grade. For many students, they experienced two simultaneous transitions. Larry reported, “it was really hard to come to high school, you know, on the block schedule, bigger school, and also trying to figure out how to ‘do’ Montessori.” Taylor added, “what really made things tough was the variation of expectations from the teachers…some had easy work plans, some work plans were long”. Denise said, “I really think I wish there were more defined boundaries…they really left too much up for us and eventually I lost my desire to even do the work. I just didn’t feel like I could do it”.

The students’ experiences align to what Dr. Montessori observed as normal or typical during this plane of development. During this plane, adolescents “want to investigate and experience on their own, they are orienting and valorizing themselves in society” (Montessori, 1971, p. 10).

This research question seeks to identify ways agency was evident in the development of the program. Students and parents alike generally identify two primary methods of agency deployment: input to the program and input to the classroom experience. It is evident that student experiences were mixed at best. Leah said, “I wish teachers and administrators would have given us more opportunities outside the classroom more often”. A parent added, “I can’t see a problem with what happened, it was a new program, there were ups and downs, I honestly feel like they adjusted when
things didn’t work”.

**Summary of Findings**

Four themes were identified for research question one. Those four themes were: 1) student ownership of learning, 2) teacher driven versus teacher supported instruction, 3) learning the Montessori Method, and 4) personal independence and social interdependence. Each theme underscores the educational practice of the student at the center of learning. When taking all four themes into account, participants indicate their experiences in Montessori classes led toward greater independence than their traditional classes. This independence occurred through pedagogical practices that in some case provoked failure that resulted in new ways of thinking and being for students.

Three themes were identified for research question two. Those three themes were: 1) real-world learning, 2) lacking financial preparedness, and 3) technology as a tool versus product. Research question two sought to understand how Erdkinder (children learning through working the land) was realized in an urban setting. Based on student responses, students experienced a mix of activities in a variety of settings. However, findings were inconclusive as to the extent to which students understood the purpose of getting into nature, away from family, and into differently learning environments.

Much like research question two, the data revealed three themes for research question three. Those three themes were: 1) programmatic agency, 2) classroom agency, and 3) faculty and staff support. Research question three sought to identify ways that student agency was realized in the development of the program. Students identified two primary area where their agency and voice were realized. Examples included planning
trips, vocalizing plans and concerns at community meetings, and planning intercession activities. Other examples included citations from the classroom including work plan creation, various methods of assessment, and teachers adjusting practice to meet student needs.

Chapter Summary

In this chapter, I reviewed adolescent’s experiences as told by them, supporting parent observations, and relevant documents. In reviewing these data, the codes and themes, from the adolescent’s perspective this Montessori program, though lacking fundamental elements of Montessorianism, provides students the space to experience a compelling non-traditional learning environment. Student statements that drew contrasts and comparisons to their traditional classes, their preparedness for life after high school, and their perceived benefit from learning outside of school all point toward a century old reform: Urban Montessorianism.

One data point not addressed in the findings is uniformed passion. I chose not to address this in my findings because this data point does not directly answer a predetermined research question. However, the culminating theme of all responses is uniformed passion. Without any variation, all students and parents who participated in this study were eager to participate, ‘believed’ in their understanding of Montessori education, and genuinely want to see this Method of teaching and learning thrive. Chapter 5 will further discuss findings related to implications for policy, practice, and future research.
CHAPTER FIVE: SUMMARY OF FINDINGS AND IMPLICATIONS

The purpose of my study was to examine adolescents’ perspective of their urban high school Montessori education, and their role in helping to develop a high school Montessori program in an urban setting. To understand the purpose of my study and aligned research questions and findings, it is important to remember that Montessori education is a reform initiative, first and foremost. Much like Mann, Dewey, and Piaget, Maria Montessori’s method seeks to abandon traditional schooling for a better way of teaching and learning. Maria Montessori the physician, educator, scientist, pursued a method that prioritized independence, never truly ‘arrived’, and is to this day, ever evolving because people are evolving and must act with agency accordingly. Indeed, Montessori asserts, “he (the student) must be allowed to act freely on his own initiative in this free environment. This statement is not to be misunderstood; however, liberty is not to be free to do anything one likes, it is to be able to act without help” (1971, p. 2).

Therefore, like Montessori, I sought to engage in this scientific pedagogy, to understand the student perspective and experience, and to guide future practice. To this end, in my study, I answered the following research questions:

RQ 1: From the adolescent’s perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?

RQ 2: From the adolescent’s perspective, how well were the Montessori
RQ 3: In what ways were student Agency evident in developing the urban high school Montessori program?

In this final chapter, I summarize the findings for each research question and conclude with implications for policy, practice, and future research.

**RQ 1: Adolescents’ Perceptions of how the High School Montessori Experience Leads to Independence**

The first research question in this study examined students’ perceptions of Montessori experiences juxtaposed to traditional classroom experiences. I was fascinated by student responses and clarity of understanding when describing not only how these experiences were different, but also how Montessori experiences led to greater independence. In reviewing the interview data and coding the responses into themes, students used descriptive words such as pride, self-paced, self-discovered, and learning how to learn. This sense of ownership is the result of a student-centered experience. Conversely, student perceptions of their traditional classes were described as teacher centered, confining physically, and in general, experiences that fostered dependence on the teacher rather than independence within or interdependence among peers, the environment, or the teacher.

Students also shared their struggle with ‘learning how to learn’ in Montessori classes, whereas traditional classes provided familiar paths of memorization and low-level thinking. Experiences of frustration, especially during the first year was a recurrent theme throughout the study. Student statements, supported by parent experience, highlighted the importance of teaching students what it means to be an adolescent learner.
who is self-directed. The problems associated with implementing such a program raise questions about the long-term impact of scientific or experimental education practices. Throughout this study, students and parents never spoke to the realities of their peer’s experience who left the Montessori program. Future research should explore outcomes, both academic and non-academic, of students once part of Montessori programs, but who transitioned to traditional methods of learning. The point is important to helping understand reasons why students and parents leave Montessori education. In some cases, it may be the student or family choice, whereas in other cases, there may be other reasons including forced transfers or family moving.

From the student perspective, this program implemented many aspects of what adolescents need during this time of development. This is evident by the stories students shared of the success in college being directly tied to the lessons learned in the Montessori program. These components include development of social policy and the interpretive mind, and support from teachers rather than strict direction from teachers. Whereas personal independence is identified as an overarching theme, a secondary theme is social interdependence. Students were put in situations wherein they needed, relied, and learned from each other. These ideas underscore the other codes discussed in chapter four. Overall, student responses for research question one elucidates potential future practices to be discussed further.

**RQ 2: Adolescents’ Perceptions of how Erdkinder was Realized in an Urban Setting**

Whereas research question one sought to examine student perspectives of divergent settings, research question two seeks to understand how a rural concept was
implemented in an urban setting. Maria Montessori’s answer to impoverished Italian urban adolescent’s needs were to remove them from their accustomed environments, and place students ‘out in the county’ in ‘an open-air environment’. A similar approach occurred to an extent in this program and is evidence by student responses. However, as mentioned earlier, although students had a variety of experiences outside of the classroom, data are inconclusive as to how much student students understood the purpose of learning in different environments.

Based on student responses, students experienced a mix of activities in a variety of settings. However, findings were inconsistent as to the extent to which students understood the purpose of getting into nature, away from family, and into different learning environments. Whereas Ebony expressed very basal understanding of being in nature, other participants could not articulate this same understanding.

Student responses for this question shed light on the program and the prescribed elective course students took entitled, Erdkinder. Key codes for this question were camping and trips, occurring in every interview. Other codes related to Erdkinder such as hikes, out-of-comfort zone, Washington, D.C., and cooking, were key to understanding student’s perception of how Erdkinder was realized in an urban setting. Students were able to articulate surface understandings of the components of Erdkinder.

Students expressed positive thoughts about their experiences in the Erdkinder course and how the program helped prepare them for life after high school. Again, a tremendous sense of pride permeated student responses in terms of their post-high school success. This success was largely related to the Erdkinder principles as a part of the program. In Chapter Four, one participant added, “the thing that really made camping
special was the freedom and pressure to perform, to survive, to cook, to plan, and we just
didn’t get that anywhere else…they gave us a taste of real life”. I think this student
captured the essence of what his peers were saying.

While students spoke with great enthusiasm about their experiences, only one
student could speak to how the program helped change her economic trajectory. This
lone student’s experience outlined in Chapter Four should be the norm, rather than the
exception. Based on Montessori’s Erdkinder, economic independence is the chief cause
of reform. Much is to be made of academic independence. However, the outcomes and
results should yield people who are valorized through their work, and indeed earn money
from their work. Montessori purported, “we speak therefore of letting him earn money
by his work…by the form of a private hotel as far as management and control are
concerned…by taking part in the administration, the young people could gain experience
of hotel-keeping in all its various branches or organizing comfort and order and the least
effort in maintenance, and other responsibilities of the financial side” (1948, p. 61). All
students were part of Career and Technical Education pathway, yet no students made
connections between Erdkinder concepts and the chosen career area of study.

Implications for practice abound, some of which will be discussed in that section.

Finally, the third theme from research question two was student’s understanding
of technology as a tool versus a product. Again, the modern day understanding of the
Montessori Method necessitates understanding how today’s tools fit (or not) in this
learning environment. Throughout the seminal essay titled Erdkinder, Montessori argues
that adolescents understand civilization, work, and their place in the world through
working and learning in an agricultural setting. One could argue that in the current day,
on a practical level, adolescents understand civilization, work, and their place in the world through technology. Social media, traditional media, big data, coding, and artificial intelligence have created a way of interacting and ‘being’ that have fundamentally changed what it means to be independent and interdependent. Although Erdkinder does not address technological advances post two World Wars, the reality is that technology was advancing at a rapid rate at the time Erdkinder was written. However, technology did not play the same role then that it does today. It must be noted that how we define technology was different in Montessori’s time that today. Farm implementation, transportation, and communication methods would all be considered technology by Montessori’s peers. However, throughout the study, findings were inconclusive as to if students thought Montessori would use technology in her method. However, students and parents alike understood modern technology as more of a tool to be used than a product to consume.

**RQ 3: Adolescents’ Perceptions of how Agency was Realized in Developing the Program**

Research question three sought to identify ways that student agency was realized in the development of the program. Much like research question two, the data revealed three themes for research question three. Those three themes were: 1) programmatic agency, 2) classroom agency, and 3) faculty and staff support.

Regarding programmatic agency, students recalled helping to make decisions about the origins of the program. Students recalled offering language for a program vision statement, providing their understanding of ‘pursuing wonder’, and sharing their hopes and dreams for the program. Students were eager to do, “do a new thing” and “be
a trailblazer in Kentucky”. However, as the program began, this excitement turned to
trepidation as expectations were not realized, academic performance plummeted from
high achieving students, frustrations set in, and several families left the program.

Throughout the first year, teachers conducted morning meeting sessions in an
attempt to ‘set the tone’ and provide leadership opportunities for students. However,
without proper training, these listening sessions often turned into negative beginnings to
the day. Days turned to weeks and weeks to months. At the end of the first semester, a
formal family meeting took place wherein families voiced concerns and teachers and
administrators listened. While this event can be classified as an attempt at student agency
in the development of the program, it is reactionary and not proactive. Implications here
point toward systems of student input, leadership, and agency.

As the program continued, students identified several areas where their agency
and voice were realized. Examples included planning trips, vocalizing plans and
concerns at community meetings, planning intercession activities, and Montessori student
council. Other examples included citations from the classroom including work plan
creation, various methods of assessment, and teachers adjusting practice to meet student
needs.

**Implications for Policy**

Two implications for policy readily present themselves in reviewing these data:
student agency for program implementation and teacher evaluations. Legislators, policy
writers, district and school-level leaders mandate and implement reforms with minimal to
no adolescent input. Further, adolescents are not part of the reform implementation
process or identifying desired outcomes of said reform initiatives. Education as a
practice and as an industry would benefit if leaders, policy writers, and legislators were required to meaningfully engage their chief stakeholder through the reform process.

*Student Agency for Program Implementation and Student Voice*

The implications of these findings highlight the importance of student agency and student voice. The case of Central’s Montessori program highlights an example of varied levels of student engagement during implementation. Many issues of the program were resolved when leaders and teachers purposefully engaged students and families. Had a system of engagement been established and utilized from the beginning of the program, through all stage of implementation, perhaps the level of issues would have been less, and perhaps fewer students would have dropped out of the program after the first year. The implications of these findings highlight the importance of student agency and student voice. Without the student voice, leaders and teachers assumed to know what was best for the students and the program. This approach is antithetical to the Montessori method. Whereas Dr. Montessori envisioned students managing and operating a Bed and Breakfast, making decisions as leaders, strategizing for marketing, being valorized through earning, and communicating among each other and the community, teachers and leaders in this case often employed familiar tactics of implementation. Dr. Montessori asserts,

“this organization could take the form of a private hotel as far as the management and control are concerned. In some ways, it could be regarded as a real hotel, or the “land-children’s hostel”. By taking part in the administration the young people could gain experience of hotel-keeping in all its various branches or
organizing comfort and order and the least effort in
maintenance…and of the financial side” (1948, p. 65).

If Dr. Montessori asserts this level of student voice and agency, how much more should the student engage in the design of their high school academic experience?

Teacher Evaluations

The current evaluation system for teachers is framed into four domains: planning, classroom environment, instruction, and professionalism. Each domain includes five-six subdomains for a total of twenty-one subdomains. Of the 21 subdomains, one addresses the student; domain 1, subdomain 2, demonstrating knowledge of the student. I highlight the difference in approach because if teacher employment hinges on performance in these areas, this is where teachers will focus their efforts. However, teacher evaluation policy should be written for teachers to focus on the teacher’s ability to respond to their students. Dr. Montessori identified three key components to a successful learning experience: the adolescent, the teacher, and the environment (Lillard & McHugh, 2019a). Over time and through each plane of development, the child becomes the adolescent, who becomes a mature adult through interaction among these three components. The teacher sets or prepares the environment, makes observation of the child’s behavior in the environment, and makes changes to the environment based on- and guided by- the child’s development. In the Montessori method, the teacher facilitates when needed and makes notation of the child’s development (Montessori, 1967). In a Montessori setting, the teacher is not the sole source of knowledge as found in most traditional classrooms. Montessori asserts, “whether I am present of not, the class functions…that is the mark of success” (1967, p. 198).
This vision of the teacher’s role would yield the lowest marks on a teacher evaluation. To achieve Montessori’s vision of professional practice from teacher, the evaluation system must allow for more scientific approaches to learning. According to the current Commissioner of Education in Kentucky, “transforming the student experience is the most important work we can do” (Glass, 2020). Montessori (1948, 1966, 1967) believed that effective approaches to adolescent education only come through observing them in an environment where they are free to manifest their true self and learn through mistakes and risks. To change the student experience, the teacher evaluation system must change to reflect the student experience.

More specifically, legislators and state leaders should work with public school leaders in each state to identify systems of evaluation that prioritize student outcomes beyond the narrow scope of academic standards. Danielson (2011) asserts the primary function or purpose of teacher evaluation is accountability to the public who funds teacher salaries. Additionally, since the year 2009 and Race to the Top, the United States government has incentivized individual state departments of education to leverage teacher evaluation as a tool to increase student achievement (Williams et al., 2020). While nationwide evaluation reforms have advanced standards-based, observation driven evaluation systems (Williams et al., 2020), researchers continually ask how alternative models of evaluation can be used to ensure accountability (Harris et al., 2014). For urban Montessori teachers across the country, latitude to focus on outcomes beyond academic achievement may yield improved outcomes for students while still ensuring high levels of accountability.
Implications for Practice

Student responses in this study indicate clear differences between traditional schooling and the Montessori approach. Student were able to contrast these experiences due to the structure of the program being a type of ‘school within a school’. Had students not developed in these experiences concurrently, they may not have been able to draw conclusions with such clarity. Perhaps students benefit from divergent learning environments. To that end, school must urgently implement practices that guide students toward learning ‘how to learn’, regardless of the life after high school. Montessori asserts, “now even labourers need education. They must understand complex problems of our times, otherwise they are just a pair of hands acting without seeing what relation their work has in the pattern of society…men with hands and no head, and men with head and no hands are equally out of place in the modern community (1948, p. 58). For the student who attends college, they will certainly need to know how to function independently. For the student who attends vocational school, they too will need to know his learning style to properly master his trade and manage his time and finances.

Moreover, school leaders and teachers must abandon the belief that the best practices of teaching and learning are confined to four walls and prescribed content of the state and local curriculum. This is to say nothing ill of a safe learning environment or of core content. However, there is a learning that students shared here that tests do not capture, nor do PowerPoints in a lecture illuminate. To hear students speak of their work and experiences stoked a compelling flame for the impact of the Montessori method. When students talk about planning their intersession to Alaska, raising the necessary funds, learning about the Northern Lights by viewing the Northern lights, these are the
experiences that traditional schooling does not deliver.

Perhaps the greatest implication for practice is that educators should reframe their work as scientific practice, rather than static or transactional. Much like a medical doctor perceives their work as ever-evolving practices, so too should education adopt this frame. In the Montessori method, the educator ‘follows the child’. Because of this “following the child”, one student was able to change her financial trajectory. As highlighted in Chapter Four, Ebony shared her story of not having educated parents, the teacher making space and time for her to learn financial habits and checking in with her regularly to monitor her progress. What would happen if more teachers followed their students? When students become active co-creators of knowledge rather than passive receptacles of knowledge, we improve the human condition.

**Implications for Future Research**

Findings from this study indicate several options for future research. However, future research should, at least, focus on two areas: establishing Montessori adolescent best practice and exploring outcomes of Erdkinder reform goals.

*Establishing Montessori Adolescent Best Practices*

More research is urgently needed for implementation of Montessori High School programs. Due to the lack of a program assessment tool, schools attempt to implement Montessori programs without a tested framework. The result is varied interpretations of what constitutes a Montessori program designed for adolescents. This research presents several challenges including identifying Montessori programs that exist. Moreover, while two organizations are recognized as Montessori authorities (American Montessori Society and Association Montessori Internationale), these organizations do not have
formal partnerships with teacher training programs. As organizations, training centers, and universities promote their understanding of best practice, peer-reviewed research-based approaches should be utilized.

Although LaRue (2010) created a conceptual framework understanding Montessori adolescent programs, this framework has not been tested in urban setting or agreed upon by scholars as an effective tool. As mentioned in Chapter Four, findings were inconsistent as to students understanding of the purposes of specific aspects of Montessori education. With a research-based tool, training centers, leaders, teachers, students, and parents would have a common language or expectation for practice.

Although adolescents want experiences on their own, these experiences are best when slowly built onto one another. According to Bandura, agency and efficacy are related terms. Bandura asserts “efficacy is the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situation” (1995, p.2). Efficacy and agency are developed through mastery experiences, vicarious experiences, and social persuasion. Based on student experiences, there were not enough mastery experiences built into the program, especially during the first year. As a result, the administration and teachers held a special meeting to hear student and parent concerns. Students report some pedagogical changes that were made because of this special meeting. John reported, “I remember Mr. Curtis really trying to listen and adjust what he was doing, but Mr. Edwards and Mr. Boyd actually kind of became more unclear in their teaching”.

While this experience highlights a single incidence of ‘following the child’, this does not help understand the long-term effects of impact of this approach. Quantitative
studies should study both academic and nonacademic outcomes of this approach. Debs and Brown (2017) echo the need for this research, “the Montessori research community should explicitly examine both academic and nonacademic outcomes for students of color and then share their findings, both positive and negative, with the broader education community via peer-reviewed journals” (p. 8).

Additional opportunities for future research exist in the following areas. Further research on the associated costs of Montessori education are also needed. This study focused on one school. While the student to teacher ratio in this school was 22:1, for the Montessori program in the same school the ratio was 15:1. More study is also needed to determine the academic and long-term economic outcomes of students who experience Montessori education. Finally, future research could expand this study into younger adolescent stages and longitudinally track student experiences over a greater period.

*Exploring Outcomes of Erdkinder Practices*

Montessori identified two key reforms identified in Erdkinder: “the essential reform is this: to put the adolescent on the road to achieving economic independence” (1946, p. 46) and the second reform, “the essential reform of our plan…. may be defined as follows: during the difficult time of adolescence, it is helpful to leave the accustomed environment of the family in the town and go to quiet surroundings in the country, close to nature” (p. 63). Whereas traditional schooling seeks to measure effectiveness by academic standards, Montessori asserts that the end goal of education is economic independence through ‘place-based’ learning. However, the place-based learning is not solely for visualizations of science examples. As student’s zone of proximal development expands, so too does their ability to make sound decisions on their own,
away from the influence of parents.

In Montessori education, internships, work study, and Intersessions are all examples of place-based learning. Although student’s school campus in this study is in the urban core or a large metropolitan city, students were afforded the opportunity to learn ‘in the county, close to nature’. However, future research should measure the effectiveness of this approach. Moreover, as different learning sites are added, researchers should compare and contrast the differences of time-based instruction or Carnegie units and place-based learning such as intersessions. During intersessions, there are no bells to silo learning into prescribed learning blocks, buses to catch, smaller siblings to care for, jobs to attend, or Friday night ball games. In the intersession, the student has their peers, their shared knowledge, their teacher, and whatever resources they brought with them. Current research lacks in describing the student experiences of growth, measuring effectiveness, or leveraging students are researcher participants. In Erdkinder (1946), Montessori asserts that reforms are not only educational, but also a human and societal problem. More directly, Montessori purported, “schools as they are today are neither adapted to the needs of adolescence nor to the times in which we live” (1946, p. 56). In order for schools to continually adapt to the need of adolescent students, leaders and teachers need to most current research; qualitative, quantitative, and participatory action.

Closing Thoughts

Finally, because of demographic differences, future research should thoroughly examine outcomes with delineation among socioeconomic strata and racial background. It must be noted that the Montessori method has its origins in educating disenfranchised
students of Italy. Over half of public Montessori school enrollments in the United States are students of color (Debs and Brown, 2017). To ensure the efficacy of practice, particularly for those most vulnerable to generational poverty, educators must ensure their practice extends beyond anecdotal, one-off experiences. Erdkinder, the Montessori method, was not designed with the elite and affluent student in mind, rather the student on the fringes of society. While affluent students may benefit from this approach, this is not the origin of the reform. Whereas modern reform initiatives aim to improve outcomes for all students, Montessori education began with a specific demographic in mind. Research must continually confirm or deny the effectiveness of the method, seek new methods of implementation, and maintain the spirit of Montessori’s scientific pedagogy. Indeed, Montessori is waiting for us in the future.

If adolescents are to develop properly through the third plane of development, improve their lot in life, improve society, and improve the human species, the student must first understand the power of choice and agency. Without choice and agency, the adolescent never realizes independence or social interdependence. Without the ability to make sound decisions, the student never realizes maturity in the fourth plane of development and is bound to the will of those making choices. In many ways, Montessori may be the forerunner to another feminist scholar and reformer, bell hooks. hooks (1994) believed the classroom was the most radical space of possibility. For Montessori, the vast wall-less classroom resembled more of a laboratory examining failure and success. This radical change occurs through student choice, not teacher power. The student must be in regular practice of making choices and decisions that impact themselves, their surroundings, their family, and community.
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APPENDIX A: INVITATION TO PARTICIPATE

Dear Central Montessori Families,

The purpose of this letter is to notify you of an opportunity to participate in a research study shortly after you graduate. Because this study will be conducted after graduation, the researcher requested that Jefferson County Public Schools contact you so that you can anticipate receiving a letter in June. The remainder of this letter explains the background and significance of the research study.

Although there is a significant body of research surrounding Montessori education, little research has sought to understand high school student experiences in urban settings learning through the Montessori Method. Legislators, policy writers, district and school-level leaders mandate and implement reforms with minimal to no student input. Further, students are rarely part of the reform implementation process or identifying desired outcomes of said reform initiatives.

The purpose of this study is to examine adolescent’s perspective of their urban high school Montessori education, and their role in helping to develop a high school Montessori program in an urban setting. This case study will record and examine the experiences of our students who completed high school Montessori schooling. Data in this research study will consist of semi-structured interviews. Responses will be coded into themes and interpreted through the lens of Dr. Montessori’s four planes of development, with particular attention to the third plane. The researcher will share their findings with you prior to completing the study. Results from this study may offer insight into the benefits and liabilities of seeking student input when designing high school reform, and more specifically, urban adolescent Montessorianism. These results may be used to engage teachers, principals, and policy writers around reform practices and policies that benefit student experiences and outcomes.

You will receive a letter from the researcher the first week of June. This letter will include an informed consent form and information to accept or decline participation in the study. If you accept, you will sign the informed consent at that time. This study is voluntary, and no monetary compensation is available. Your input will contribute to a missing part of education research: high school Montessori education.

Thank you for your time and attention to this communication. If you have questions about this study, you may contact ________________.

Sincerely,

Jefferson County Public Schools
IRB Office
APPENDIX B: INTERVIEW PROTOCOL

Research and Interview Questions

- RQ 1: *From the adolescent perspective, how does the high school Montessori experience lead toward independent learning versus the traditional school experience?*
  - How does it feel knowing that you are a part of the first graduating class of public high school Montessori students in the history of Kentucky?
  - What made you choose Montessori education over traditional high school?
  - How much experience did you have in Montessori education prior to this program?
  - What were some key differences between your Montessori classes and your traditional classes that increased your independence?
  - What were some key similarities between your Montessori classes and your traditional classes?
  - Dr. Montessori said that adolescents want adults to “help me do it alone”. In what ways did teachers, “help you do it alone”?
  - For Parents:
    - What did you hope your child would get out of Montessori program that they might not get in a traditional high school program?
In what ways did the Montessori program achieve some of this for your child?

In what ways did the Montessori program fall short (examples)?

RQ 2: From the adolescent’s perspective, how well were the concepts of Erdkinder brought to reality in an urban setting?

Dr. Montessori said, “students should be able to confront the unforeseen difficulties of real life, and not be ignorant of the world” (paraphrased).

To what extent did this program do this, if at all?

In what ways has the program prepared you for your understanding of ‘real life’?

Dr. Montessori said, “it is helpful to leave the accustomed environment of the family in the town and go to quiet surroundings in the country, close to nature. Here, an open-air life, individual care, and a non-toxic diet, must be the first considerations in organizing a ‘center for study and work’”.

In what ways did this program place you away from family in the county for study and work?

Dr. Montessori said, “the essential goal is to put the adolescent on the road to achieving economic independence”.

To what extent did this program do this, if at all?

Dr. Montessori said, “we have called these children “Erdkinder” because they are learning about civilization through its origin in agriculture. They are the ‘land children’.”

How was agriculture a part of your urban high school experience?
- If Dr. Montessori were alive today, how do you think she would have incorporated technology into Erdkinder?
- In what ways were you stretched out of your comfort zone in the Montessori program?

- **RQ 3:** *In what ways were student Agency evident in the development of the urban high school Montessori program?*
  
  o What are your best memories of giving input or direction to this program?
  
  o How much agency did you have in your schoolwork vs development of the program?
  
  o Finish this sentence, “I wish my teachers/administrators would have _________ more often during the development of this program”.

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CURRICULUM VITA

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