Concentration: A Pathway To Learning

Habib Amini

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CONCENTRATION: A PATHWAY TO LEARNING

by

Habib Amini

A dissertation submitted in partial fulfillment of the requirements for the degree of

Doctorate in Education

Dissertation Advising Committee

Chair: Kimberly Hartung, Ed.D.

Reader: Khuzana DeVaan, Ed.D.

Reader: Judith A Blyckert, Ed.D.

Reader: Michelle Berscheid, Ed.D.

Hamline University

St. Paul, Minnesota

November 2020
DEDICATION

I dedicate this work to my children, Lyla, Reshad, and Ariana, whose lives from conception to now have inspired me to be better prepared for their different educational and developmental needs. And to my wife, Susan Bosher, whose help in editing and proofreading of my writing made this process more tolerable. Their love and encouragement gave me the strength to see the finishing line and not get discouraged by setbacks.
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EPIGRAPH

The thirst for love, without love of learning, sinks into simpleness.

Love of knowledge, without love of learning, sinks into vanity.

Love of truth, without love of learning, sinks into cruelty.

Love of straightness, without love of learning, sinks into rudeness.

Love of daring, without love of learning, sinks into turbulence.

Love of strength, without love of learning, sinks into oddity.

(Confucius, Date: unknown, Kindle Loc. 568)
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ABSTRACT

This study looks at the observable effects of influences on students’ concentration or engagement in learning in the classrooms of two publicly-funded and one private Montessori elementary schools. Using a phenomenological method of inquiry within the paradigm of qualitative research, the study explores literature and collects data through observations and interviews to determine the nature and origins of these influences in the above selected schools. The findings show three sources of influence affecting students' concentration at varying degrees, depending on the type of the selected school: 1) the duality of objectives, caused by the phenomenon of applying Montessori method in synchrony with some demands of state and federal standards and assessment laws, 2) the Montessori affiliation features, and 3) the teachers’ qualifications and competences in coping with such duality of objectives and Montessori affiliation features in their classrooms. Findings show the effects of these influences as modifications in Montessori teaching practices and materials, management of classroom, and management of children’s individual work and groupwork. These effects are more observable in the school with no Montessori affiliation and to a lesser extent in the public Montessori school that is accredited by the American Montessori Society (AMS). In the private school, accredited by the Association Montessori Internationale (AMI), findings suggest that duality of objectives and affiliation features of the school do not significantly impact teacher’s competences and practices, are not major influences on students’ concentration and engagement in learning, and do not result in observable modification of Montessori materials, environment, and pedagogics.
DEFINITIONS OF TERMS

The definitions of some terms and concepts used in this paper are summarized below to clarify their intended meanings. I will be using the acronyms I have assigned to some of these terms throughout the content in this paper in order to reduce redundancy and increase conciseness of the text.

Adults:

This term is used interchangeably with the words “guide and teacher” and refers in this paper to a person or a group of individuals over the age of 18 in a public/private Montessori learning environment. It includes the main guides (the Montessori term for teachers) and their assistants, school administrators, parents, and all other caregivers and volunteers.

CAOSE (Children, Adults, Objects, Scenes, Events):

CAOSE, is an acronym that is formulated in this paper to refer to all components of the learning environment, such as children, adults, objects, scenes, and events. The observable effects originating from anyone of these components can affect all the others. These effects are considered influences by this paper and are subjects for data collection. They include anything that one can touch, hear, see, or feel kinesthetically, such as children’s behavior working individually or in groups, preparedness of the adults (e.g., their qualifications and competences), the nature and quality of academic materials used in Montessori program for the elementary level), preparedness of the classroom environment, scenes (e.g., conflict resolution, visits by older students), and events, (e.g.,
Exercises of Practical Life, Cosmic Education, regular Montessori lesson presentations, lessons of grace and courtesy, and visits by specialists).

**Concentration on Learning (COL):**

This term refers to a state of mind, or engagement in learning, during which a learner focuses his or her attention and energies entirely on learning or mastering some knowledge that the learner is seeking to attain by engaging voluntarily in some type of purposeful work or play. (See Chapter Two for cited literature on this term.)

**Influences:**

This term refers to qualities of all factors/components (Children, Adults, Objects, Scenes, Events) in any given learning environment. Both negative and positive qualities of any of these factors or components in the environment are referred to as “influences” on students’ ability to concentrate on finishing work.

**In-school Factors:**

This term refers to factors that are school-born and are within a school’s authority to control. They originate from the components of a learning environment like the children, adults, objects, scenes, and events (see CAOSE for more information).

**Learning Environment:**

This term refers to all locations in a school where students engage in purposeful work or play. Classrooms, music labs, libraries, gyms, art rooms, etc. are examples of such learning environments, which are intended to lead students to learning.

**Normalized:**
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This concept in the learning environment of a Montessori school refers to a state of preparedness children reach in their growth, when they initiate work spontaneously and at their own free will. Normalized children no longer need to be told by the adults what to do (Montessori, 1983).

**Out-of-school Factors:**

Race to the Top, high-stakes testing, test-based accountability, competition, and school choice (charters and vouchers) in public education are examples of out-of-school factors that affect public school (Ravitch, 2013). These out-of-school influences, according to McNichols Chattin (2016), make it very hard for teachers and administrators to achieve good implementation of the Montessori method in a public school setting.

**Purposeful Work:**

This term refers to any type of age-appropriate work or play in a Montessori learning environment that a student initiates at his or her own will, or undertakes at the suggestion of an adult that, when completed, results in the student gaining a certain desired knowledge or capturing an anticipated outcome.

**Unprepared:**

This is a Montessori term that refers to conditions of disarray in the learning environment. This term will be used interchangeably with the term “unqualified” when it refers to an uncertified or inexperienced adult(s) in the learning environment.

**Zone of Proximal Development (ZPD):**

This term refers to the space between what a learner can do unassisted and what the learner can do with assistance (Vygotsky, 1978).
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CHAPTER ONE

Introduction

This chapter starts with some glimpses of my schooling experiences and personal life growing up because they parallel certain aspects of traditional schooling experiences of my children in the U.S. and some characteristics of their experiential learning when they were attending private Montessori schools in their early childhood years. Making these connections is important for the purposes of this paper which is to investigate what happens when these two vastly different methods of education come together in schools that are conceived on the idea of converging them in their pedagogy and in the learning environment of their classrooms. This convergence of two methods creates a learning environment with dual objectives for the teachers in their classrooms, which will be also referred to as the structural feature of such schools in this paper. Data were collected in three selected schools consisting of one private and two publicly-funded Montessori elementary schools, one of which is a charter school. The focus of data collection is on the observable effects of duality of objectives and Montessori affiliations on all the components of the learning environment (children, adult(s), objects, scenes, and events) and how they influence students’ concentration and engagement in learning in such types of schools.

With regards to Montessori affiliation, it must be said here that when a Montessori school seeks affiliation with or accreditation by a major Montessori organization that school must follow certain guidelines for Montessori practices and standards of quality in order for their affiliation or relationship to stay current. Different
Montessori organizations have different sets of expectations for their affiliates/members. Two of these major organizations that are well recognized in the U.S. are AMI (Association Montessori Internationale) and AMS (American Montessori Society). The demands that these organizations place on member schools are designed to accomplish different goals and are, at times, even contradictory to another. For example, AMI, which was established in 1929 in Denmark by Maria Montessori herself, is “the steward of the Montessori educational approach developed over 100 years ago, building upon her work to apply it in every setting and to each child without compromising the integrity of the approach” (https://montessori-ami.org/about-ami), implying adherence to original Montessori standards in terms of teachers’ practices and materials. On the other hand, Nancy McCormick Rambusch founded the American Montessori Society (AMS) in 1959 and recommended that the major tenets of the method be integrated with traditional American educational practices (Jones, 2006). In other words, AMS is not against modifying Montessori materials or teachers’ practices if such modifications fit the common core of American cultural needs, e.g., Pledge of Allegiance replacing cosmic education, Disneyland’s coloring books next to Red Inset activities, and fantasy cartoon books next to books about real issues of the world. Therefore, affiliation of a school to either of these organizations could have an influence on the practices of the teachers and the nature of materials on the shelves of their classrooms. Teachers’ practices and competences in how they handle duality of objectives and Montessori affiliation demands of their schools without compromising the core principles of Montessori method in the learning environment of their classrooms are among the influences that can have the
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greatest impact on students’ work and concentration. Exploring the effects of teachers’ practices on students’ concentration in the selected schools constitute a significant portion of the collected data in this study.

The theoretical foundations and the philosophical underpinnings of the above two methods involved in the academic objectives of the selected schools are covered in more details in Chapter 2, but, it is necessary here to briefly touch upon the main distinction between them, not only for laying the ground for further discussion on this subject later on, but also for highlighting the reasons why understanding duality of objectives in the selected schools is paramount to understanding what this study is about.

David Elkind (2003) makes the argument that the traditional educational method, like all other methods, presupposes an epistemology, but it does not require teachers to start their day in school “from a set of explicit philosophical assumptions” (p. 1). He says practices of teachers are not always “derived from some theoretical persuasion or translated into any general abstract epistemology” (p. 1) and that “for some educators their pedagogy is an outgrowth of their day-to-day experiences with children in the classroom. It is only when these innovators try to articulate their methods that they seek out a philosophy that provides a rationale for their practice.” (p. 1). Elkind (2003) asserts that to compare such traditional teachers to those in the Montessori’s constructivists approach “only from the perspective of their epistemologies rather from that of their practices” (p. 1), it becomes apparent that Montessori teachers start their day in school form an explicit and well defined Montessori epistemology and attempt to stay in line
with their philosophical predispositions. (Elkind, 2003). (See Chapter 2 for more distinctions between the above methods.)

This chapter will continue with making a statement of the nature of the problem on which the research questions are based, followed by some words on the rationale for this study, what the research questions are, the study’s significance, its limitations, and a summary of the chapter at the end.

**Story of my Schooling**

My schooling experiences growing up showed me firsthand how young children go from having a love of learning and paying attention to everything to a life of, as Krishnamurti (2015) puts it, “rolling along in inattention.” This quote was taken from one of his televised lectures, which he gave in the 1960s, on the topic of inattention and the gap between understanding and action.

I was raised in Afghanistan in a Montessori-like environment that provided me with the security and freedom to move about outdoors in nature, where most of the things we played with, like kites, checkerboards, and marbles, were handmade with materials that were locally available, as Montessori would later incorporate into her teaching method in India. Because we had no television or gadgets to entertain us, we had plenty of time to socialize with members of the family and community and learn the ways of the culture through play, a key tenet of the Montessori method. Likewise, we were given chores to do at home and had to learn to contribute to the family and become independent early on in life, which is another cornerstone of the Montessori method. In sum, all the opportunities we had for free movement, socialization, usage of our hands in making
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things with natural materials, freedom of choice of activities, etc. in the environment of that community were very comparable to the learning environment of an authentic Montessori school from both theoretical and practical points of view.

In contrast, my experiences with formal schooling, which began at the age of six, were characterized by a curriculum and pedagogy based on transmission of knowledge, repetition, rote memorization, and dispensing of rewards or punishment for success and failure. As students we had no voice in what, how, and why we needed to learn what the curriculum had decided for us to learn. Furthermore, most of the teachers did not have a college-level education and did not know the basics of how to teach or how children learn in their various stages of development. An effective teacher was considered to be someone who made sure we sat quietly, paid attention, and absorbed the disconnected content in their daily lesson plans. We were not allowed to ask questions or make any noise nor were we allowed to socialize, do groupwork, or talk to other children during our daily class periods. Any student who exhibited signs of boredom or disinterest or questioned the legitimacy of what was being offered as “facts” was labeled, humiliated, and bullied into silence by the teacher or sent to the principal’s office to be disciplined and receive their punishment, which often included a good beating. Such restrictions in our classrooms went against the demands of our physical and psychological health and against the needs and tendencies of our childhood formative and developmental years, as noted by Montessori and other educators. Moreover, the content included in the official curriculum, at every level of schooling, came in the form of textbooks and did not relate to our lived experiences. Progress from one year to the next was determined by grades on
final exams, and successful performance on those exams depended on rote memorization of the content. Students who failed these exams were subjected to ridicule and humiliation and would usually drop out of school.

The purpose of the above narrative is to suggest that my school did not prepare me for the world I live in today. I was, in fact, afraid to go to school and since schooling of children was mandatory I did not have a choice. It was the quality of life and the experiential learning in the environment of my extended family and in the community where I grew up that sustained me. It was my own search for knowledge, my interest in making things with my hands, poetry reading, storytelling, socializing with children of various ages, and the vibrancy of my other experiences that schooled me on values like equality, reciprocity, fairness, and independence. It was having the freedom of choice, freedom of movement, and absence of controlling adults in that environment that prepared me for life and helped me to become the person I am today, qualities that are at the core of the Montessori doctrine and appear in the classrooms of an authentic Montessori school, as well.

It was the memories of my own schooling, as narrated above, and the positive experiences of my children in various Montessori schools in the U.S. and elsewhere that fostered my interest in Montessori as an alternative to the type of rote education I had received. It gave me the energy to go back to school in my senior years to better understand the advantages of a Montessori education as well as some of the challenges of combining Montessori education in public school settings, also referred to as duality of objectives, to be discussed further in Chapter Two. It is necessary, not only for the
purposes of this paper to articulate the likely main source of problems in publicly-funded Montessori schools, but also I feel obligated to make sure, as Diane Ravitch (2013) puts it, “the institution of public education [is] preserved for future generations” (Kindle Loc. 267) because “the future of our democracy depends on it” (Kindle Loc. 267).

I started, at the age of 55, by enrolling in the Montessori Training Center of Minnesota’s (MTCM) primary (3-6) teacher training program. MTCM’s umbrella organization, Association Montessori Internationale (AMI) is located in The Netherlands. Following completion of this program, I transitioned to Loyola University in Maryland, where I completed a M.Ed. in 2011. Energized by all that I had learned and the desire to take my knowledge of Montessori to the next level, I applied and was accepted into the Ed.D. program at Hamline University in 2013. In-between graduating from Loyola and my acceptance into Hamline, I worked for Lake Country Montessori School in south Minneapolis and as a substitute teacher for various other private Montessori schools in the Twin Cities area. During that same period, I also served on the Board of Directors of Sunny Hollow Montessori School, a private Montessori school located in the Highland Park neighborhood of St. Paul.

**Statement of the Problem**

This paper views three issues as possible sources of problems that can stand in the way of proper application of the Montessori method, and consequently affect students’ concentration on learning and all other components of the classrooms in the selected school types.
The first issue is the structural feature of each of the selected schools. It means that the publicly-financed schools in the selection are structured as such that they are obliged to meet the state’s standards and assessment requirements (e.g., preparations for standard tests) at the same time that they are obliged to adhere to the principles of their adopted Montessori method of education. This feature, as mentioned earlier, creates duality of objectives for teachers in their classroom which could create confusion for students and teachers alike and could affect concentration on learning. The private school in the selection is also expected to meet the state’s standards and assessment requirement, but to a much lesser degree. Ravitch (2013), argues against the overemphasis of standardized testing in public schools. She wants regulators to better understand the corrosive effects of programs like NCLB, Race to the Top, high-stakes testing, test-based accountability, competition, and school choice (charters and vouchers) on public education. Preparations for standardized tests (PST) is considered in this paper to be an out-of-school factor and an influence on students’ concentration and engagement in work in a Montessori classroom setting. It is an imposed obligation that schools, even with the support of the “opt-out” movement, which is backed by a majority of teachers, have not been able to get out of. (The Dallas Morning News, 2012).

To clarify the mechanics of preparations for standardized testing (PST) for the 1st and 2nd graders, it must be said here that although students in the lower level elementary classrooms of selected Montessori schools are not tested (i.e., based on communications with teachers) until they step into their 3rd grade levels, but the work of preparing them for tests starts from the day they enter the lower elementary classrooms in such schools.
This is because in the lower level elementary classrooms in Montessori schools mix, the first, second, and third grade students together, which means that the teachers have the students for three years to prepare them for the testing that begins in their 3rd grade level. (Chapter Four will provide analysis on how the work of preparation for standardized tests with third graders affect components of the classroom and creates duality of objectives for teachers in the classrooms of the selected schools).

The second issue is the hiring of teachers with traditional teaching licenses and no Montessori qualifications and competences. The hiring of teachers not qualified in the Montessori method originates from the requirement that public Montessori schools not hire teachers unless they have a traditional teaching license. Some public Montessori schools with good resources also require their teachers who have a traditional teaching license to go back to school and get training in the Montessori method of education, but some others like charter schools do not. Charter schools, which include Montessori charter as well, often hire teachers who do not even have a full state certification, let alone Montessori training. The report from the U.S. Department of Education that came out in December of 2016, suggests that “By most measures examined in this report, charter schools had higher percentages of uncertified teachers than all schools” (p. 14). Their finding was that 40 percent of charter schools had uncertified teachers in general; the percentage was as high as 79% in some high poverty districts. (U.S. Department of Education, 2016). Having a discussion at this juncture on the subject of unqualified teachers and their practices is relevant to the topic of this study, because teachers who are hired with only traditional teaching licenses and lack competence and training in
Montessori method of teaching often fall back on applying positivist pedagogy or rote learning techniques in their classrooms to be more effective and thus become a source of negative influence on students’ concentration and on all the other components of the learning environment in the above types of Montessori schools. Efforts at the privatization of public education are contributing factors in the ever-growing presence of unqualified teachers in regular public schools as well as in publicly-funded charter Montessori schools. In her book *Reign of Error: The Hoax of the Privatization Movement and the Danger to America’s Public Schools*, Diane Ravitch (2013), one of the most recognized names in education today, argues that privatization movement programs (e.g., charter, voucher, and choice) have played an important role in the deterioration of public schools. Privatization, Ravitch (2013) argues, has allowed beneficiary charter schools to lower their standards and, unlike traditional public schools, ignore teacher’ unions and hire unqualified teachers. This is no exception in the case of publicly-funded charter Montessori and public Montessori schools in economically distressed school districts.

Most charter schools, she argues, have distanced themselves from their original purpose, which was to empower teachers, help the profession of teaching, improve student achievement, and be a support to traditional public schools (Quintero, 2014). Instead, she says, the charter movement has become an attractive target for investors and private money managers with commercial motives (Ravitch, 2013), “zealots and the profiteers” (Molnar, 1996, p. 3), who hire private and for-profit EMOs (Educational Management Organizations) and non-profit CMOs (Charter Management Organizations) that use public money and run charter and online schools without proper oversight. Such
practices, Ravitch (2013) contends, have hurt children, their families, and society. Some
of these teachers, such as those with Teach for America, have no more than a two-year
contract and only five weeks of training before they are assigned to schools, mostly to
inner-city impoverished schools. Some other teachers have been in the system for a long
time and due to their seniority or tenure status can stay in their jobs indefinitely (Ravitch,
2013). Dana Goldstein (2015) asserts that many teachers “have academically mediocre
backgrounds (below-average SAT scores) and have graduated from nonselective colleges
and universities” (p. 2).

The third issue is the selected schools’ Montessori affiliation features, which is
about their accreditation or recognition by Montessori organizations such as Association
Montessori Internationale (AMI) or American Montessori Society (AMS).

The factors and issues mentioned above affect each selected school differently.
This issue is discussed in more detail in Chapters four and five when the results of the
data collection are in and conclusions are drawn.

It is important here to mention that in addition to the above large issues and
factors affecting selected type schools, there are many other smaller influences within the
classrooms of such schools that can also affect the learning environment of a Montessori
classroom. Some of these factors originate from out-of-school factors and are outside the
control of the schools to fix, such as poverty, segregation, students’ family circumstances.
And there are others that originate from in-school factors, which also wield influence on
students’ concentration or engagement in learning, such as the dysfunctionality of the
school in general.
The effects of out-of-school factors are not always observable and are often beyond the ability of most urban schools to fix, especially the ones that originate from students’ cultural experiences, family life, traumas and other unknown psychological issues of students and their parents. Studying the effects of these types of influences on students’ concentration on learning is not the purpose of this study and is not included in the design of the data collection instruments. The effects of some out-of-school factors, like a student’s physical or mental irregularities, can be observed and recorded, but those types of influences are not the objects of focus in this study.

In-school factors refer to the qualities of all components of the learning environment within a school, which include the children, adults, objects, scenes, and events (CAOSE; for more information see Definition of Terms on page 6). I will refer to qualities of each of these factors as influences on students’ concentration on learning (see Appendices E and F for classifications of these qualities). These in-school factors have observable and unobservable effects/influences as well. The observable influences consist of physical aspects of the learning environment (as shown in Appendices E and F), nature of the curriculum and pedagogy (positivist or rote learning vs constructivist), observable qualities of the adults (e.g., teachers, assistants, specialists, volunteers, etc., as shown in Appendices E and F), and qualities of learning materials (as shown in Appendices E and F). It is these types of factors – observable in-school factors – that are included in the collection instruments. The unobservable qualities of in-school factors are hard to study by way of a small qualitative study such as this. They might be related to the accumulated damage of ineffective curriculum and pedagogy on each individual
Student, unprepared teachers’ practices, the dysfunctionality of the school, and so on. Studying the influences of these types of factors on students’ concentration on learning, even though they originate from in-school factors, would require a longitudinal quantitative pursuit of cause and effect, which is outside of the scope of this study.

**Rationale for this Study**

The rationale for conducting this study is to identify qualities in all the components of the learning environment of three selected schools that affect their students’ concentration in order to help them assess students’ progress and create the right conditions for their students’ work of self-construction. Although this study is limited and small in scale and “…will not be the definitive work that will revolutionize the field of education” (Anderson & Arsenault, 1998, p. 36), it is a unique study and will add new knowledge on how concentration or engagement in learning can be nurtured and safeguarded in the environment of schools that fit the descriptions of the selected Montessori school in this study.

Ken Robinson (2013) makes the assertion that Death Valley is not really dead; it is dormant. It has seeds of possibility under the floor of the landscape waiting for the right conditions to come about, and with organic systems, he suggests, when the conditions are right, life is inevitable; it only needs the right climate for growth. I believe one of those seeds of possibilities that Robinson is referring to can be the creation of an environment in the classroom that is free of negative influences and is nurturing to students’ concentration or engagement in learning.
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This study hopes to identify some of these influences and thereby contribute toward improving the learning environment in the classrooms of the participating schools in this study and in the classrooms of public and private Montessori schools in general.

Research Questions

The purpose of this study is to bring to light the effects of in-school factors that are observable on students’ concentration or engagement in learning in the classrooms of three different types of Montessori schools: a privately funded Montessori school, a public Montessori school, and a publicly-funded Montessori charter school. Publicly-funded charter and public Montessori schools function between traditional method and Montessori systems of education at the same time. These two systems are quite different and at times make opposing demands. Factors that affect students’ concentration or engagement in learning in such schools come from both traditional and Montessori dimensions of their operations and will be explored further later in this study.

There are two types of factors: out-of-school and in-school factors. Both sets of factors have qualities that are either positive or negative. Throughout this paper, I refer to the positive and negative impacts of these qualities on students’ concentration on learning as “influences.” These influences are either observable or unobservable, regardless of what type of factors they originate from.

It is hoped that this study will make a small contribution toward better understanding the role those factors play in the classrooms of different types of Montessori schools, as one way schools can work to improve learning conditions in their classrooms. The differences between the selected schools, which will be discussed further
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in Chapter Three, are due to their locations (rural vs. urban), the demographics of their student populations, sources of funding (public vs. private), and affiliation with Montessori organizations.

The Main Research Question

The main research question in this study is: What influences in the classrooms of selected Montessori elementary schools affect students’ concentration or engagement in learning?

The only out-of-school factor that this study collected data on was preparation for standardized tests (PST). Administering these tests requires a lot of preparation work, involving both teachers and students, and can have visible effects on students’ concentration on learning as well as the proper application of the Montessori method in any type (private or public) of Montessori school. Because of its importance, this factor is the subject of my secondary question, based on the assumption that there would be activities related to preparations for standardized tests in the classrooms for first and second graders at the time of my classroom observations.

Secondary Research Question

The question is: How does the preparation for standardized tests in the publicly-funded Montessori schools of this study affect students’ concentration or engagement in learning in visible ways?

To answer these questions, I will explore literature and collect data on the observable qualities of in-school and out-of-school factors and the single out-of-school factor, PST, that affect students’ concentration on learning in the environments of three
selected schools. The in-school factors encompass all components of a learning environment, such as the child, adult(s), objects, scenes, and events. (See CAOSE in Definition of Terms for more information.) The observable qualities (influences) of these in-school factors include observable qualities of the physical environment, observable qualities of the students, observable qualities of the adults, and observable nature of the materials and their correct usage by the adults, or the usage that is consistent with the Montessori method of education. (See section of Montessori System of Education in Chapter Two for more discussion of “correct usage” by adults. See Appendices E and F for classifications of these factors and their qualities.)

Significance of the Study

The significance of this study to me as a Montessori guide is that the study might be able to show that through observations (as a tool of research) a school can isolate influences that visibly affect students’ concentration or engagement in learning and correct them (i.e., if the means of correcting them are available). It will also show that isolating and correcting influences with observable effects on students’ concentration, are easier and more cost effective ways of improving students’ learning in comparison with closing schools or dismantling the entire public education system, as some critics suggest. I believe the results of this study will bring to light the existence of many negative in-school factors that affect students’ concentration or engagement in learning in the classrooms of my selected schools. Identifying these influences will be discussed in Chapter Four in more detail. Chapter Five will include my summary and examples of how to address these influences in the classroom.
Summary

This chapter described the topic, theoretical assumptions behind the topic, the nature of the problem it will explore, and the rationale for the study. It explained the types of factors that are explored in the study and the different types of schools where data were collected. It introduced the challenges of applying Montessori method in the context of a public Montessori school setting, a topic that is discussed more fully in Chapter 2. Finally, it made a statement regarding the significance of the study and concluded with explaining its limitations.
CHAPTER TWO

Review of the Literature

This chapter, first, explores the concepts of concentration and learning generically and what they mean in the contexts of traditional and Montessori methods of education. This coverage leads to briefly exploring the theoretical foundations and the core tenets of these two methods of education and the distinctions that exist between them. Understanding this theoretical knowledge is prerequisite to understanding what “publicly-funded Montessori schools” are and what factors in such schools affect students’ concentration on learning, subjects that are part of the focus of data collection in this study.

The purpose of creating this theoretical backdrop is to also understand the duality of objectives that the convergence of two different methods of education (i.e., traditional and Montessori methods) creates and how it affects the qualifications, competences, and practices of the teachers in the above types of school. And as mentioned in The Statement of the Problem section in Chapter One, qualities of a teacher are some of the most important influences not only on students’ concentration on learning but also on all other components of the classroom like the children, adults, objects (i.e., the physical environment and teaching materials), scenes, and events (CAOSE).

The hope is that the theoretical findings in this chapter together with the findings from observations and interviews in Chapter Four show consistency among them when they are triangulated in Chapter Five so the answers to the research questions can be found.
Concentration

Concentration is a state of the human mind. Educators and psychologists have, for centuries, studied and written on the characteristics of this state of mind. As far back as 1894, Francis W. Parker, in his book *Talks on Pedagogics: An Outline of the Theory of Concentration*, made the assertion that concentration is the focusing of the power of will upon an activity that is “aroused by one’s inner desires, which the ego is to know, to analyze, to compare, to classify, and to make the basis of all inferences” (p. 118). Paul Tough (2013), almost 125 years later, describes this power of will during concentrate as “flow.” He wrote that flow moments most often occur “when a person’s body or mind is stretched to its limits in a voluntary effort to accomplish something difficult or worthwhile” (p.136).

The fundamental understanding of concentration has not changed with the passage of time. Even though concentration has been used interchangeably with other terms such as focus, transfixation, deep engagement, paying attention, and flow state, it continues to refer to entering the flow and a heightened state of awareness in which, according to Mihaly Csikszentmihalyi (1990), distractions (i.e., those that are avoidable) recede to the background and one’s sense of time passing is minimized. Concentration is entering “a state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it” (p. 4). Wendy L. Ostroff (2012) identifies the conditions under which this heightened state of mind can occur as: “Challenge plus relevance can lead to superior concentration, interest, and attention” (p. 87). For Ostroff (2012),
engaging voluntarily in concentrated work or play “is the driving desire behind all actions and is the precursor and cornerstone to learning” (p. 7), suggesting that experiencing such intense focus appears to be effortless when concentrating is unforced. Ostroff (2012) also suggests that concentration is essential if one is to tune out extraneous information and stimuli, implying that people are constantly being bombarded with information and trying to attend to all of it all the time can leave people feeling “constantly overwhelmed” (p. 54). Concentrating, she says, “is the mechanism our brains use to attend only to that which is interesting and important in a given moment, while ignoring the rest” (p. 54).

A child’s state of flow or concentration on learning might take the shape of engagement in play, during which the child might become animated and verbal. Jean Piaget in *The Child’s Conception of the World* (1960) states that among early school-age children, the processes of conceiving thoughts and words are closely related. He says that in young children there is no distance between talking and thinking because they do their thinking as they speak their thoughts out in words.

Dr. Montessori conceived of concentration as a psychological state of mind, a platform, a place from where the child steps into the realm of self-discovery, acquiring willpower and self-mastery, a place where his or her energies are unleashed and fatigue and boredom are replaced with tranquility and satisfaction (Lillard, 2005).

Furthermore, for Montessori (1912), concentration is maximized when students decide for themselves what to learn. Otherwise, as Anne E. George (1912) suggested over a century ago, “The mind of one who does not work for that which he needs, but commands it from others, grows heavy and sluggish” (p. 92). The assumption is that to
have searched for and found a path to a goal of one’s own choosing provides greater satisfaction and longer lasting learning than following in a path assigned by someone else. George (1912) adds that, having found a viable way on one’s own to solve a problem boosts one’s motivation to search further, implying that even if the initial solution is cumbersome, costly, or inelegant, a search is prompted for a more satisfactory one. Montessori’s view, as per the words of numerous authors, is that “an interesting piece of work, freely chosen, which has the virtue of inducing concentration rather than fatigue, adds to the child’s energies and mental capacities, and leads him to self-mastery” (Steffe & Gale, 1995, p. 207).

The overarching theme in all the literature above suggests that concentration is a learner’s voluntary entry to the state of flow or heightened awareness in which distractions that are avoidable recede in the background and the energies of the learner are unleashed to capture a desired result. Furthermore, concentration is based on interest and attention and cannot be forced upon the learner.

In the context of an authentic Montessori elementary school, students are not asked, based on the above cited literature, to pay attention or concentrate on work or activities that they themselves have not selected of their own will. The primary job of a trained adult is to make sure that students’ concentration on their work or play is safeguarded during a day’s morning and afternoon work cycles. When students cannot finish their work in one day, the unfinished Montessori work remains on their work-mat overnight for the next school day. In other words, no one is allowed to pick up the unfinished work, including the janitor who comes at night to clean up, because that would
disrupt the child’s concentration on learning (COL). “The uninterrupted work cycle is the heart and soul of a Montessori environment” (Keys, 2015, p. 22). Montessori argued that students’ COL must be protected if they are to internalize knowledge and integrate the concepts in which they are engaged (Montessori & Holmes, 1912). Keys (2015) supports this idea and adds that “people learn best when they focus, implying that a school must give priority to creating an environment that is most conducive to concentration” (p. 22).

In the context of a traditional classroom, students’ concentration on learning (COL) is not the focus of day-to-day programming. John Dewey (1913) makes the assertion that when students are asked to pay attention, they may exhibit quietude and show that they are paying attention, but those are manners of compliance students must learn to stay in line with the school’s rules and are different from voluntary concentration. According to Dewey (1913), students cannot protest against what they have no interest in learning or distance themselves from influences that affect their concentration in a traditional classroom setting. Under such conditions, children may not finish their activities or experience the state of flow, where real learning takes place (Keys, 2015). This feeling of powerlessness can also break students’ willpower, affect their grit and ability to self-regulate, and, according to Tough (2013), lead children to a life of pessimism and low achievement.

Despite widespread knowledge and acceptance of the importance of concentration in the learning process, unqualified teachers and the schools that hire them may not fully understand that concentration needs to be voluntary and must not be forced on a learner. Thus, they might try to force a child to pay attention, sit motionlessly, and retain
information that may be devoid of meaning or relevance to them. Unqualified teachers, especially those in poor urban schools, engage students in boring activities and conduct lessons in ways that do not engage students intellectually (Goldstein, 2015).

Over a century ago, Dewey in *Interest and Effort in Education* (1913) argued that mere attendance at school is no guarantee that learning will take place. He thought that compulsory school attendance at a certain age could not fulfill the objectives and purposes of education. He made the argument that compulsory education can only guarantee the physical presence of the child, and yet mentally, he or she could be divorced from what is happening around him or her in the classroom. He made the point that a child might appear to be occupied or paying attention to an assigned task and might even be able to pass a test related to that task, but these apparent accomplishments do not guarantee “the educative training of the child’s mind and the development of his willpower” (p. 133). He suggests that students in such situations might be forced to split their attention between how to project an appearance of being engaged, or faked concentration, in the lesson while thinking about something entirely different.

If students are not interested in what they are being asked to learn or do, boredom settles in and concentration or engagement in learning cannot be achieved. Ken Robinson (2013) asserts that “many children are bored and restless in school not because they have a condition but because they are children and what they are required to do is actually boring” (p. 73).
Learning

Although the focus of this study is on the observable effects of the influences on concentration or engagement in learning, and not on learning itself, it is necessary here to briefly look at what the generic meaning of learning as a concept is and how it is achieved. This is because the deduced suggestion in the title of this paper implies that there is a connection between concentration and learning.

The generic and dictionary definition of learning suggests that learning is a change in the behavior of an organism as a result of the absorption of knowledge through repeated practice. (Retrieved from: https://www.britannica.com/science/learning-theory). Matthew Olson (2009) confirms the above definition by saying that learning in the paradigm of behaviorism is indeed “a relatively permanent change in behavioral potentiality that occurs as a result of reinforced practice” (p.1).

According to Montessori, learning as the process of accumulating meaningful knowledge by the learner experientially for the purpose of adding it on top of what the learner knows already or for the purpose of fulfilling an unforced desire by the learner to capture a certain new knowledge. In other words, learning is at the discretion of the learner and that the learner is an active participant in the act of learning. Montessori believes that when learning is voluntary the learner is already motivated to get engaged in the act of learning. The learner in such a context does not need motivation coming from outside in the form of prizes, competitions, rewards, or punishment (Montessori, 2012). This view parallels the constructivists’ view of learning, which is explained later in the next segment under “Constructivist View on Knowledge and Learning.”
These definitions of learning necessitate that one has to know what knowledge is before discussing the transmission of it to the learner. Below are two major theories on how knowledge is created and how learning is achieved, which are relevant to the topic of this paper.

**Behaviorist View on Knowledge and Learning**

Olson (2009) claims that the above perspectives on learning are rooted in behaviorism. From the perspective of behaviorism, knowledge is objective and that learning of objective knowledge is measurable and re-enforceable by either repetition or reward and punishment, a process that is described as “operant-conditioning” in the psychology literature. (Retrieved from: http://infomotions.com). Psychologists such as John B. Watson, Ivan Pavlov, and B. F. Skinner (Dastpak et al., 2017) were pioneers of behaviorism as a school of thought. According to Albert Bandura (2001) Watson is known for his work on “conditioning baby Albert” (p. 231). Watson, Bandura (2001) adds, wanted to condition the subject baby to fear a white rabbit by associating the appearance of the rabbit with a loud sound. After repeating the experiment for a while, the sound was no longer necessary to scare the child -- just the appearance of the rabbit alone was enough. Watson thought of language as just another skill and a behavior that could also be taught to a child through such conditioning techniques. Skinner is synonymous with the behavior modification chambers or “conditioning boxes” (p. 232) in his Behavior Research Laboratory (BRL) and Pavlov with “Pavlov’s dog” (p. 231). Bandura (2001) coined the theories of “social cognitive” and “social learning,” both of which are based on the idea that most of an individual’s behavior and learning are created
as a result of observing others in social contexts. In other words, learning is learned behavior and is not constructed by the individual’s own initiatives, prompting Henry Giroux (2020) to say that knowledge in such context is rote learning and it implies, according to Eva Dobozy (2004), that knowledge is an objective reality and/or the ultimate truth that exists out there “independent of the knower” (p. 3). This fact or ultimate truth, Giroux (2020) says “becomes the foundation for all forms of knowledge, and values and intentionality lose their political potency by being abstracted from the notion of meaning” (p. 37).

The above positivist definition of knowledge was formulated by a French philosopher, Auguste Comte, who lived from 1798 to 1857. Positivism was to replace the outdated and dogmatic religion and theology of that era. Compte proposed a religion of humanity and called it positivism (Retrieved from: https://www.britannica.com). Andrew Wernick (2001) makes the remark that this new religion was to be based on love, order, and progress and it was based on a foundation of science and human progress. (Wernick, 2001)

Comtean positivism, according to Joe L. Kincheloe and Kenneth Tobin (2015), adopted the utilization of the scientific approach to create social realities. The tenets of the scientific approach now serve in many sectors as “referents used to judge the value of research in social science” (p. 517), suggesting that this positivist view of social realities, which was joined with similar genres of empiricism discerned a central and “mainstream ideology that was accepted virtually without debate and served as an unquestioned set of referents underpinning research in the social sciences” (Kincheloe & Tobin, 2015, pp. 15-32). According to Kevin J. Brehony
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(2009), the knowledge, the science part in particular, contained in the curriculums of both traditional and Montessori systems of education are rooted in empiricism. These two systems differ from one another only in their pedagogical methods of transmission of this type of knowledge to the learner. Brehony (2009) makes the assertion that G. Stanley Hall had Maria Montessori on his side when “Hall was a leading propagandist or ideologist for a positivist, science of education.” (p. 15)

Traditional method relies more on rote memorization and uses “good grades” and “bad grades” in tests as rewards and punishment to improve large groups of students’ levels of attention in the classroom and make learning happen, whereas, Montessori adopted a constructivist approach for the transmission of its curriculum through didactic materials to the students individually. According to Keith Whiescarver and Jacqueline Cossentino (2008) Montessori method allows a great deal of freedom to choose what the students want to learn as individuals, when they want to learn it, and at what pace.

**Constructivist View on Knowledge and Learning**

Knowledge from the constructivist view is what “one constructs from his experiences, beliefs and mental structures, which are used to interpret objects and events” (Essays, 2018, p. 1). This view allows for learners’ participation in the creation of knowledge and does not support the transmission of such knowledge to the learner through rewards and punishment (Fosnot, 2005).

Constructivism, as a theory of knowledge and active learning, was developed as a “philosophical movement” by developmental psychologists, such as Jean Piaget, Lev Vygotsky, Jerome Bruner (i.e., Bruner’s more recent views), and David P. Ausubel. It
states that “knowledge is unique and emerges out of an interaction with the society, constructed by the individual with the help of senses and produced actively” (Koleva, et al., 2015, p. 73). Bruner’s earlier views on passing the knowledge to the learner, according to Keiichi Takaya (2008), was more behavioristic in comparison to his more recent views, which emphasize that students experience meaning making and learning in a community in which diverse types of learning happens. (Takaya, 2008). Mustafa Cakir (2008), believed that “rote learning may involve interference with previous similar learning, and exhibit some of the difficulties in patterns of recall, including fail to notice associations.” (pp. 193-206)

Catherine T. Fosnot (2005) argues that learning in the framework of constructivism is concrete, contextualized, and meaningful. It engages learners, so they can raise questions, reflect on them, perfect them, abstract them, and debate them. It allows the learner to draw meaning from the new knowledge and compare his or her own knowledge against it (Fosnot, 2005). Sharon A. Reyes and James Crawford (2012) think of constructivist learning “as a process of reconciling prior knowledge and understanding of the world with new experiences and social interactions, resulting in new knowledge and new understandings” (Kindle Loc. 334). These authors suggest that understanding of what knowledge is, and how it is constructed, has wide implications on education. They say that “if knowing is inherently subjective” and is conceived of as the result of a learner’s unique experiences, then it cannot be transmitted from a teacher to students by way of lectures or homework (Reyes & Crawford, 2012, Kindle Loc. 334).
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Ellen J. Langer (1997) stated that learning is an inherently pleasurable activity if it is at the discretion and pleasure of the learner: “Pleasure is the state of being brought about by what you learn. Learning is the process of entering into the experience of this kind of pleasure. No pleasure, no learning. No learning, no pleasure” (p. 66), implying that for learning to be effective, it needs to be pleasurable for the learner. Sir Percy Nunn (1920) called this inherent inner pleasure that comes from learning “horme” (Kindle Loc. 448). It refers to drives, urges, or impulses of an organism to do something, setting itself in motion, starting an action whether consciously or not, or arriving at an end. He suggested that horme begets curiosity, and curiosity begets investigation, which leads to knowledge, learning, and understanding (Nunn, 1920).

According to Vygotsky (1978), learning takes place in the Zone of Proximal Development (ZPD), which he defined as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adults’ guidance, or in collaboration with more capable peers” (p. 86), in other words, the area between what a learner can do with and without assistance. Vygotsky (1978) believed that the purpose of education is to provide learners with tasks that are within their ZPD, and in a Montessori context the learning environment must fully facilitate this. But, ZPD is not easily understood by adults if adults do not have foundational knowledge on how to observe a child or have no understanding about the individual child’s stage of development. For Vygotsky (1978), like Montessori, interaction with more knowledgeable or skillful peers
is as beneficial as interaction with a teacher. They both favored cooperative learning experiences, where more experienced or competent students help those who are less able.

Researchers who have built on Vygotsky’s ideas coined the term “scaffolding” to describe those activities that an educator or more experienced peer provides as a learner moves through the ZPD. David Wood, Jerome S. Bruner, and Gail Ross (1976) defined scaffolding as a process “that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts” (p. 90). For Wood et al. (1976), scaffolding requires “controlling those elements of the task that are initially beyond the learner’s capability, thus permitting him to concentrate upon and complete only those elements that are within his range of competence” (p. 90). For Vygotsky, much learning takes place during what is often called “play.” But play is not a trivial activity, nor one that, in an educational setting, can readily be distinguished from “work.” In play, Vygotsky (2013) suggested, “a child is always above his average age, above his daily behavior; in play it is as though he were a head taller than himself” (p. 410). Play contains “all developmental tendencies in a condensed form” (p. 411). Play is rooted in a child’s interest in some object or idea. Dewey (1913) noted the main task of an educator is to have an awareness of the random interests, energies, or mind wanderings of a child and be able to bring them “to a focus in action” (Kindle Loc. 187). Otherwise, they are just short-lived “excitations resulting in listlessness” (Kindle Loc. 187). The adults must know that there are powers within a child that are developmental and urge the child to put them into action. But, children need to be supported in their efforts to make their urges become real, thus completing the calling of their natural desire for self-construction and
independence. These efforts never degenerate into drudgery “. . . because the self-construction remains concerned throughout” (Dewey, 1913, Kindle Loc. 188-189). The efforts come mostly because of the child’s intense love of learning.

Fosnot (2005) views learning to be constructivist in nature and suggests that “constructivism is fundamentally non-positive and as such it stands on completely new ground, often in direct opposition to behaviorism and maturationism” (Kindle Loc. 316-317). In a Montessori environment, learning and creation of knowledge are at the discretion of the child. An important assumption of Montessori education is that all children are born with a capacity for and love of learning (Montessori, 2012). Dr. Montessori referred to that capacity as a “psychic power” (p. 3), a “vital and divine force, which belongs to life itself and is the promoter of all evolution” (as cited in Kramer, 1988, p. 123). She thought that learning begins long before formal schooling (Kramer, 1988). She argued that young children learn about the size, shape, texture, and weight of objects, and whether things are cold or hot and so on “by touching them” (as quoted in Kramer, 1988, p.199). When they do that, they pay close attention to the qualities of those objects. Sometimes they take an object and wander about with it, babbling utterances to themselves. To untrained adults, the child appears to be idling and not doing anything, completely unaware of the fact that the child is constructing knowledge and is in the state of flow or deep concentration (Kramer, 1988). Adults must be aware of these developmental and learning needs of children and prepare the learning environment, whether it is at home or school, to meet these needs (Kramer, 1988).
Early Childhood Education and Learning

The foundations of child-centered early life education go back to the establishment of the first kindergartens in Germany by Friedrich Froebel in the mid-1800s (Cavallo, 1976). In 1908, Nina Catherine Vandewalker wrote the first comprehensive history of the American kindergarten. Since then, historians agree that the theory and pedagogy of kindergarten have attracted the attention of other types of progressive educationalists like Maria Montessori and educational psychologists like James Stanley Hall, who initiated a critique of the Froebelian pedagogy upon which the kindergarten curriculum had been based since its introduction into the United States in the 1860s (Cavallo, 1976). According to Molly Kayes Ransbury (1982), Froebel’s “ ‘Unity of Life’ philosophy hypothesized that everything functions in a relationship to God, the total unity” (pp. 104-106). In applying this thinking to teaching children, Froebel said the ultimate goal of education should be to enlighten the human soul so they feel their oneness with the Divine (Ransbury, 1982). Froebel saw every child as unique and that all stages of the child personality develops through action and, which he referred to as Play. Froebel argued that play, therefore, should be the basis from which all educational programs for children originate (Ransbury, 1982). DOM Cavallo (1976) suggests that by 1920, after a long battle with Froebelian proponents, progressives emerged as victors in taking control of the kindergarten pedagogy.

Rote Memorization vs Constructivist Learning

Gary Thomas (2013) thinks that not many people know “why schools exist as they do today; the intellectual traditions that have shaped education seem to be invisible to most observers” (p. XI). Even most teachers, according to Elkind (2003), “do not start
their day in school from a set of explicit philosophical assumptions” (p. 1), as mentioned in Chapter One. It is only when teachers try to articulate their methods that they seek out a philosophy that guides their practice. Thomas (2013) adds that in the mainstream culture most people are familiar with big names in other fields like Darwin in biology, Marx or Keynes in economics, Einstein in physics, van Gogh in the arts, and so on, but perhaps no one knows anything about Dewey or Piaget in education. For instance, he says people (i.e., outside the circle of educational scholars) do not know that in 1928, Dewy -arguably the greatest thinker about education in modern times- was hailed as “the second Confucius” (p. X1) by the rector of the National University at Peking, China, a comparison judiciously made by China that brought honor to both Dewey and America. It is this “lack of understanding [about education] that has contributed to the dearth of creativity about how to improve it” (p. XI).

Among the scholars, though, there are several schools of thoughts on the nature of education in the U.S. There are scholars like Nancy File, Jennifer J. Mueller, and Debora Basler Wisneski (2012) and Diane Ravitch (2013) who believe that after the desegregation of schools in 1954 and President Johnson’s War on Poverty in the 1960s, early childhood education in the U.S. took a turn from its Froabelian past toward a more secular and progressive approach to educating the young. They say that the Perry Preschool Project (1972–2009) and the Abecedarian Study (1972–2009) opened the door for a more child-centered type of education. These two studies were the result of increased attention during the 1960s and 1970s to psychologists, such as Piaget, Bloom, and Erikson, and to cognitive development in the early years of life (File, Mueller, &
Wisneski, 2012). These studies produced two well known curriculums named as High Scope and Creative Curriculum. These Curriculums were designed to take children’s physical, emotional, and cognitive developmental perspectives into account (File, Mueller, & Wisneski, 2012). Ravitch (2013) thought that due to the above two studies, “The case for early childhood education is based on sound research, conducted over many years. The evidence is overwhelming. Early childhood education works” (Kindle Loc. 4741). She says, “Early intervention can make a lasting difference in children’s lives. It is expensive to do it right. It’s even more expensive to do half measures or not to do it at all” (Kindle Loc. 4741).

There are other scholars, like Eva Dobozy (1999) of the University of Notre Dame, who think that teaching was and still is largely as positivist or rote learning and a practice of transmitting knowledge via lecturing or direct instructional teaching. Feminist scholars, have challenged the above positivistic view of the teaching and learning process on epistemological grounds and philosophical ideas that challenge the acceptance of established hierarchies, and privileged dominant social realities (Dobozy, 1999). Giroux (2020) views this positivist nature of knowledge and learning as objectivism, which he thinks is rooted in the culture of positivism in public education.

**Montessori Method and the Public Montessori Concept**

The Montessori method is different from the traditional method. Montessori is centered around the learning needs of children within the confines of its curriculum. According to April Jones (2006), Montessori principles can be summed up as follows:

1) Movement enhances thinking and learning.
2) Learning is at the discretion of the learner.

4) Extrinsic rewards and punishment negatively influence the motivation for learning.

5) Learning in groups is conducive to learning especially in elementary level Montessori schools.

6) Prepared adults are essential to learning.

8) Prepared environment is needed for learning.

Other basic tenets required in a Montessori classroom are: the 3-year age span in each elementary classroom like 6-9 in lower-level and 9-12 in upper-level arrangements (Chattin, 2016).

Montessori founded the first Montessori school in Rome in 1907. The Montessori method of education was introduced in the U.S. in 1911. It served 4- to 7-year-olds from low-income families in a full-day program. Montessori schools grew in number in Europe and India, and there was a great deal of U.S. interest in Montessori’s Methods from 1910 to 1920. In this period in history both Montessori and Dewey were aiming at creating miniature samples of a democratic society in their schools, where pupils could exercise their basic human rights and liberties like freedom of choice and movement (Dobozy, 2004). These educators and others like them were challenging the accepted methods of education in Europe and in the U.S. and advocating for a humanistic version of public education into the classrooms (Thomas, 2013). Dewey started to educate people on the difference between information and knowledge, suggesting that “schools concentrate on the former at the expense of the latter. ‘Covering the ground’ is the
primary necessity; the nurture of mind a bad second” (Thomas, 2013, p. 52). Dewey spoke of the damage that testing of success could do to children’s natural love of learning by simplistic means. He said, “There is no great difficulty in understanding why this ideal [i.e. testing] has such vogue. The large number of pupils to be dealt with, and the tendency of parents and school authorities to demand speedy and tangible evidence of progress, conspire to give it currency” (Dewey, 2016, Kindle Location 44656).

After this initial period of boom, Chattin (1992) suggests that “Montessori methods were all but forgotten in the U.S. until the late 1950s” (p. 2). Then, a second wave of Montessori private schools serving mostly the middle-class began to appear. In the late 1960s, people in many districts began to demand the Montessori model for their elementary school children. “Today, more than 100 U.S. school districts have some type of Montessori program” (Chattin, 1992, p. 2) in their schools.

Publicly-funded Montessori schools are new genres of schools and a new phenomenon in the paradigm of public education in the U.S. According to John Chatting-McNichols (2016), the first publicly-funded Montessori school was Sands Montessori School, which opened in 1967 in Cincinnati. Since then, as more and more states have allowed charter schools, Montessori has become a popular choice (Chattin, 2016).

Public Montessori school must also keep in mind in their operations the fundamental principles of the traditional public education, which, as Kathleen Fulton (2002) suggests, are:

1) to produce an education of the quality needed to effectively prepare young people:
   (a) to lead fulfilling and contributing lives,
(b) to be productively employed, and

(c) to be responsible citizens in a democratic society,

2) promote a cohesive American society by bringing together children from diverse backgrounds and encouraging them to get along,

3) help to form a shared American culture and to transmit democratic values,

4) guarantee a public education that is universally accessible to all children within the governing jurisdiction and is free of charge to parents and students,

5) provide the same quality of education for poor children as for non-poor children,

6) treat all children justly and without discrimination based on race, ethnicity, gender, disability, religious affiliation, or economic status,

7) ensure that education supported with public dollars remains accountable to taxpayers and the public authorities that represent them,

8) be responsive to the needs of local communities and afford citizens a voice in the governance of their schools,

9) provide a public education that is religiously neutral and respectful of religious freedom. (p. 17)

**Converging Rote Memorization and Constructivist Learning Methods**

Asghar Iran-Nejad (1995) makes the assertion that applying constructivism in a traditional classroom requires teachers to bring into the fold a holistic way of thinking about how knowledge is constructed and passed on to the learner, which is quite different from the methodologies of direct instruction and rote memorization. There is no doubt that today, constructivism is becoming a popular concept in contemporary teacher
education programs and, more often than before, creative and talented teachers in traditional schools use constructivist techniques to deliver or transmit knowledge, which is usually prescribed in the curriculum, to their students (Iran-Nejad, 1995). These teachers make attempts at presenting lessons using many different techniques, such as self-directed, learner driven, active learning, service learning, project-based learning, and integrating subject areas, etc.

Despite teachers’ best efforts in being good at what they know best, which is teaching, and their innovative ideas on how to work with children collaboratively, still according to Dana J. Wright (2018), there a “grossly inferior caliber of persons making decisions that dictate what, how, and when things are taught in American classrooms” (Kindle Loc. 134). She states, “You have listened to everyone else. I now invite you to listen to me; one of the only education experts in America, an actual classroom teacher” (Kindle Loc. 141). And with this appeal to American people, Wright wants America to realize that these people, the educational leaders, with no teaching experience “have created a cataclysmic rift between what students need and what education leadership demands” (Kindle Loc. 141). She thinks that the “real victims in all of this are American students” (Kindle Loc. 141). The programs they have created such as NCLB (No Child Left Behind), Common Core, College and Career Ready, and others are not created by teachers or are based on their expertise, but rather by persons who might have intentions other than improving children’s education. Giroux (2020) claims that in such a context “manipulation takes the place of learning, and any attempt at intersubjective understanding is substituted for a science of educational technology in which choices exist only when they make the systems more rational, efficient, and controllable” (p.38). Fosnot (2005) thinks that the flaw in the educational
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system is in the transmissionist and/or realist view of knowledge at the leadership level and in what they propose as solutions to educational problems. She thinks “exams are used to test the acquisition of memorizable information or skills, not the conceptions possessed by the students” (Kindle Loc. 5124).

Ravitch (2013) in her book Reign of Error: The Hoax of the Privatization Movement and the Danger to America’s Public Schools tells the story of a teacher’s response to Jamie Vollmer, who was making a comparison between his successful blueberry ice cream business and running a public school, in some meeting. She says that the teacher asked Vollmer, “When you're standing on your receiving dock and you see an inferior shipment of blueberries arrive what do you do?” (Kindle Loc. 6037) She says Vollmer answered by saying that he would send it back. The story goes that the teacher jumped to her feet and barked, “That’s right!, and we can never send back our blueberries. We take them big, small, rich, poor, gifted, exceptional, abused, frightened, confident, homeless, rude, and brilliant. We take them with ADHD, junior rheumatoid arthritis, and English as their second language. We take them all!” (Kindle Loc. 6037). Ravitch (2013), in this story, makes the point that schools are not businesses and cannot be run as such. The exams and solutions, rooted in a positivist orientation toward learning and teaching that comes down from the top, blame the teachers and make their already difficult job even more difficult.

Dobozy (1999) of the University of Notre Dame, makes the point that “despite the persuasiveness of constructivist theory development and the themes emerging across many educational research projects and articles, the application of these theories in mainstream classrooms is neither widespread nor systemic” (pp. 11-13). She adds that
mainstream schools might benefit from greater individualisation of educational methods that are in harmony with constructivist ideas, like they are in Montessori schools (Dobozy, 1999). Dobozy (1999) also makes the argument that a real concern arises with the constructivist concept’s application in traditional classroom settings, because many traditional teachers and teacher educators claim that knowledge in their classrooms is constructed, without appreciating the epistemological and pedagogical implications such a claim entails. She suggests that teachers need to understand that constructivism is not a “quick fix solution” (p. 12) but rather they should become accustomed to working with quite different goals like not burdening themselves with trying to empower students, motivate them, and make them collaborate, as children are intrinsically motivated and do not need external words of praise and punishment to do all that. All they need is the right environment for learning, independence, concentration, and the liberty of movement and choice. Dobozy (1999) suggests that educators review their practices and reflect on the relationship between their personal beliefs and values and the choices they make in regard to the power/knowledge nexus” (p. 12). Teachers need to let children work collaboratively, and they should nurture their intrinsic motivation, self-discipline, and responsibility. These efforts cannot be achieved simply through learning and applying constructivist techniques, but rather, teachers need to turn the responsibility for learning over to the student, view students as knowledgeable, and trust them to take control over their learning and construct their own meaning (Dobozy, 1999). This is because children themselves, according to John Taylor Gatto (2000), have natural tendencies for those qualities which teachers try to instill (Kindle Loc. 215). Gatto (2000) says that children
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have a great capability for hard work and will engage in learning with a high level of attentiveness when they have an interest in the work that they are asked to do. He argues, “Schools must thus become far more tolerant of individual variation and far more reliant on self-initiated activities” (Kindle Loc. 215). Dobozy (2012) adds that to make students become lifelong learners, itt may be necessary that teacher training programs offer nonformal education (NFE) on the concepts of metacognition and self-regulation, and “self-directed and motivated to seek out opportunities for peer-to-peer ‘P2P’ support” (page number not provided by Questia), to better prepare their teachers (Dobozy, 2012).

Another distinction between rote and constructivist learning approaches is that in a positivist environment the focus of assessment is summative, and the focus is on the question “Are the students learning what the teacher is teaching?” To answer this question, the students need to be tested to find out if they are learning the knowledge that the teacher is delivering to them during a specific scheduled time period and on a specific subject. Assessment in a constructivist Montessori learning environment is formative and is done through observation of each child by the teacher and by way of “the three period” lesson (TPL) (Montessori, 1912, Kindle Loc. 2806), which are presentations given by the adult at the request of the child. These presentations have multiple stages, and within each stage, the teacher asks a series of questions to determine if the child has understood the information in a given stage, and if not, the guide takes one step back to the previous stage and revisits the material. This type of assessment is continuous within every lesson for every child; it is concerned with the question “Is the student learning what the student chooses to learn?” To answer this question, Montessori teachers have a professional
obligation, based on Montessori theory of education, to observe students individually and make sure each student is learning what he or she chooses to learn and it is within his or her Zone of Proximal Development (Vygotsky, 1978).

The assessments used in traditional and Montessori education are fundamentally different and have different effects on students. In traditional schools, assessment is used as a tool to encourage students to pay attention to the knowledge that is being delivered by the teacher. In contrast, Montessori assessment practice uses a child’s own interest to increase his or her attention and engagement in work. This assessment practice, which is formative, and as explained above, is done through observation of each child’s progress by way of “the three period” lesson (TPL) (Montessori, 1912, Kindle Loc. 2806). These different assessment practices reflect two very different understandings of how to promote concentration on learning (COL) in students, which could create a lot of confusion in the minds of children who are attending schools with dual objectives. If children are left with no choice but to move from one subject to the next against their will, they cannot exercise their independence to continue their work and resist something they do not want to do. Children’s will power gets broken and they give up finishing their work in one area, related to their self-construction, in exchange for meeting the expectations of the teacher and the school. Montessori (1912) states,

We often hear it said that a child's will should be “broken,” that the best education for the will of the child is to learn to give it up to the will of adults. Leaving out of the question of the injustice which is at the root of every act of tyranny, this idea is irrational because the child cannot give up
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what he does not possess. We prevent him in this way from forming his own will-power, and we commit the greatest and most blameworthy mistake. He never has time or opportunity to test himself, to estimate his own force and his own limitations because he is always interrupted and subjected to our tyranny, and languishes in injustice because he is always being bitterly reproached for not having what adults are perpetually destroying. (Kindle Location 5155)

Summary

This chapter explained that concentration is a state of mind during which one voluntarily focuses one’s mind or body in acquiring a certain knowledge or accomplishing a task. This state of the mind cannot be forced upon a learner, for it will not lead to learning.

Learning from the behaviorism point of view is a measurable change in the behavior of the learner as a result of the acquisition of a certain knowledge. And that transmission of knowledge to the learner can be achieved through repeated practice -also known as rote memorization- involving tests and conditioning of the learner by administering rewards and punishment.

The constructivists view learning (i.e., the acquisition of knowledge or meaning) as the byproduct of voluntary concentration on an activity involving learner's experiences.

All schools transmit the knowledge that is contained in their curriculums and academic materials to their students using one of the above learning approaches
depending on what type of school they are. In schools, where rote memorization for tests and the constructivist learning method of Montessori are converged, a duality of objectives gets created that can challenge teachers' abilities to safeguard their students’ concentration and make learning happen in their classrooms. Chapters Four and Five will shed light on the effects of such duality of objectives on students concentration in the context of three Montessori elementary schools that were selected for this study.
CHAPTER THREE

Methodology

Introduction

The research approach and the design for this study are covered in this chapter. The design discusses what the data collection process entails. It provides information on the participants, specifically the participating schools, classrooms, and teachers, and the steps that were taken for their ethical treatment and protection, selection of the sites (participating schools) and methods of data collection, the role of the researcher, and on the instruments that were used for collecting data.

Research Approach

This study, due to its size and worldview on social constructivism, falls within the paradigm of qualitative inquiries. It intends to reflect on human behavior subjectively and does not lend itself to statistical analysis (Patton, 2001). There are different types of qualitative studies to choose from, such as phenomenology, case study, ethnography, grounded theory, and narrative research, each with different levels of complexity (Creswell, 2003). A phenomenological research approach serves the needs of this project well. This type of qualitative research typically involves a small group of participants, thus making it easier for the researcher to understand the events and what they mean within the unique contexts they occur (Maxwell, 2013). It is a system of inquiry that has its roots in philosophy and psychology. It is a way to investigate a contemporary phenomenon within its real-life context (Yin, 2015), which in the case of this study
allows me (the researcher) to describe the lived experiences of my participants (e.g., teachers), culminating in the essence of their experiences as they have lived through the phenomenon (specifically, the application of Montessori methods in public schools) (Moustakas, 1994). This approach’s three main characteristics are: 1) it is inductive and is not oriented toward cause and effect, 2) it is subjective and creates in-depth meanings, perspectives, and concepts that cannot be measured in a lab, and 3) it is about a context in a specific time and space with specific details of its chosen subjects, in this case the participating schools, classrooms, and teachers. The choice of approach in a study shapes the design or “procedures” of that study (Creswell, 2007, p.3). This qualitative research utilized procedures to study lower/early elementary students in classrooms of three different types of elementary schools consisting of one private and two publicly-funded Montessori elementary schools, one of which is a charter school. See the segment “Data Collection Sites (Participants)” below for more details.

Below are the procedures that were devised to go forward with this study.

**Data Collection Methods**

The main method for data collection in a phenomenological study like this typically involves conducting interviews that have roots in psychology with “strong philosophical underpinnings” (Creswell, 2003, p. 14). In addition to transcripts of interviews, this study used, as Yin (2015) suggests, other sources of data, including classroom observations and other relevant documents, such as fieldnotes, internet sites, photographs, videos, email correspondence, and so on. In the following discussion, the
data collection methods used in this study are discussed in the order they were implemented.

**Classroom Observations**

As discussed in Chapter One, data were collected on observable influences of in-school factors and one out-of-school factor. Other influences that originate from out-of-school factors like family abuse, socioeconomic conditions, physiological abnormalities, or psychological issues such as their fears, anxieties, or developmental needs were not included in my instruments, even though they might have had some effects on students’ work. This study was too small to include them. The only out-of-school influence I observed was preparations for standardized tests. Although there were no preparations for testing of 1st and 2nd grade students during the observations for this study, the influences of this particular out-of-school factor on students’ concentration or engagement in learning were observable in some aspects of the classrooms and were noted. (Details of these findings are discussed in Chapter Four.

The nature of the data that were collected through my observations and interviews is qualitative. The collected data focused on the observable effects of influences that originate from in-school and out-of-school factors. They focus on the observable effects of these influences on students’ concentration or engagement in learning only, and not on learning itself. The theoretical foundations and linkage between concentration and learning were established in Chapters One and Two. In the next two chapters, any interpretations made in the analyses regarding the effects of observed influences on learning are qualitative and originate from this theoretical base in the literature, as the
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objective of data collection for this study was not about studying cause and effect
between concentration and learning. That kind of undertaking would require an empirical
(experimental) quantitative type of data collection over a long stretch of time
(longitudinal) that could not be accomplished by means of a small qualitative study such
as this. This is not to suggest that producing a qualitative report on changes in students’
learning because of certain influences on their concentration was not possible. It was
possible, but that would have involved experiments and interviews with students and
their parents, which would have made data collection exceedingly difficult, if not
impossible. Many more months would have been needed to organize and get
authorization for that type of data collection, efforts that might not have produced
positive results in the end.

In order to ensure that my observations were conducted objectively, I read some
of Dr. Montessori’s quotes on the nature of a prepared Montessori environment before
going to my observation sessions. I also listened to the recordings of my favorite
philosopher, Jiddu Krishnamurti (2015), on learning through observation. Krishnamurti
(2015) claims that learning is the art of learning how to unlearn. He says past knowledge
can become a filter and the sensor or even a resistance to receiving new knowledge
through observation. He suggests that the analyzer within the observer wants to come to a
conclusion and resists learning new knowledge through observation. To learn, he says,
you must free yourself from your past accumulations of biases and cultivate curiosity and
intensity within yourself. Biases that create psychological pain in you make you think
about words to reject or justify new knowledge or experience. To learn through observation, he adds, is to first observe the sensor within oneself.

My observations were what DeWalt and DeWalt (2002) call passive participation, that is, I did not participate in classroom activities nor interact with participants while they were being observed. While observing, I was especially attentive to the observable influences of in-school factors that originate from the environment, especially qualities of the adults as they have the most influence on the students’ concentration or engagement in learning. In particular, teacher pedagogical practices in relation to how they present lessons, how they manage groupwork and Exercises of Practical Life (EPL), and their overall preparedness (the qualities of adults are shown in Appendix E) are indicators of their abilities to cope with the duality of objectives they encounter within the context of a public Montessori school. In observing students at work, I was also alert to the phenomenon described in Chapter One that a student might appear to be engaged with the task at hand but be experiencing divided attention (Dewey, 1913).

The focus of my observations was on observable influences that were present in the classrooms of the participating schools and affected concentration or engagement in learning of normalized children, not special-needs children or children who had not been normalized. As per the Definition of Terms, “normalized” refers to a state of preparedness children reach in their growth, when they initiate work spontaneously and at their own free will. Normalized children no longer need to be told by the adults what to do (Montessori, 1983). The way I wanted to go about distinguishing normalized students from special-need students and those who had difficulty normalizing, was to ask the
teachers to put a check mark next to those students’ names on the group photos they give me when I first entered their classrooms. Teachers were not willing to, for privacy of information reasons, share that kind of information with me, thus my observations of children was not narrowed down to just the normalized children. Children that were observed included a few who might have been special-need students or some who were still not fully normalized, or both.

**Interviews**

Interviews were with selected lower elementary teachers in the participating schools. I also had a 30-minute recording of an interview I held with a focus group made up of two retired individuals from the Montessori teachers’ community. Originally, I had wanted to use the data from that interview for triangulation purposes in this chapter. I had to scrap that idea for two reasons because 1) the recording was poor quality and 2) one of the interviewees never provided written or oral approval to use their interview data.

I engaged the participants in what Rubin and Rubin (2005) called a “responsive interviewing” experience, which is a participatory and interpretive mode of conversation. This type of interviewing is inductive because the conversations are built from ground up; the responses to questions get more in-depth as the participants discover more to say about the questions they were asked (Rubin & Rubin, 2005). During such interviews, “a conversational partnership” develops between interviewer and interviewee (p. 87). In addition, “depth is achieved by going after context; dealing with the complexity of multiple, overlapping, and sometimes conflicting themes; and paying attention to the specifics of meanings, situations, and history” (p. 35). This type of interviewing is based
on constructivism and is “a dynamic and iterative process, and not a set of tools to be applied mechanically” (Rubin & Rubin, 2005, p. 15). This approach also implies that the interviewer considers qualities such as gender, racial and ethnic background, and socioeconomic status, and is transparent about how those variables affect one’s interpretation of the results. A potential concern about responsive interviewing is that it is more of an art than a science, and the success of it is dependent on the sensitivity and skill level of the interviewer (Rubin & Rubin, 2005).

Interview questions were open-ended (Appendix D), allowing for maximum input from participants. Follow-up questions were used to probe participants for deeper comments and to bring the discussions back on track if they steered too far away from the subject of the questions. At the beginning of each interview, I attempted to establish a personal rapport with the interviewees, but certain restrictions did not allow for such acquaintance to be established in advance of my scheduled observations in their classrooms. Interviews with participant teachers took place at times and places convenient for the interviewees. The interviews each lasted approximately 30 minutes. Interviews were conducted only after my observations in their classrooms were completed. That way I was able to connect the teachers’ responses more readily to what I had observed in their classrooms. Interviews were audio-recorded (i.e., with mutual agreement), transcribed, and coded for themes in preparation for data analysis, the results of which are presented in Chapter Four.
Other Documents

In addition to the data recorded through observations and interviews using my instruments, photos and video clips of all components of the classroom, and handwritten fieldnotes were also used to note some unanticipated influences in the classrooms. Videos and photos were not included in the appendices as they contained identifying information. (See Chapter Four.) The handwritten fieldnotes document information about influences on learning that were not included as pre-entered attributes on the data collection tools (Appendices E, F, and G) but needed to be recorded and made part of the data analysis. (See Chapter Four.) These fieldnotes also included descriptions of events that happened during the interviews.

Furthermore, I examined other documents that were given to me by the principals and teachers of the participating schools during my visits. Such documents included visuals and demographic information about their schools. In the analysis stage in Chapter Four, I will also review other relevant documents about the participating schools from other sources, such as reviews of the schools on the internet, news articles, and public records. Information relevant to the research questions in any of the above documents was harvested and used in the data analysis stage.

Role of the Researcher

As the sole researcher, I conducted all classroom observations and individual interviews, and I was exclusively responsible for coding, analyzing, and interpreting its results. When collecting data, I tried to set aside my own preconceptions and biases. As Maxwell (2013) noted, what the researcher brings to the research from their own
background and identity has traditionally been treated as bias, something whose influence needs to be eliminated from the design, rather than be understood as a valuable component of it. This tendency has been true to some extent even in qualitative research, even though qualitative researchers have long recognized that the researcher is the instrument of the research in qualitative studies (Maxwell, 2013). As Mills (2007) argued, “The most admirable scholars . . . do not split their work from their lives. They seem to take both too seriously to allow such dissociation, and they want to use each for the enrichment of the other” (p. 195). Maxwell (2013) concluded that “separating your research from other aspects of your life cuts you off from a major source of insights, hypotheses, and validity checks” (p. 45).

**Data Collection Sites (Participants)**

Last year, beginning in April 2019, I spent several months sending “Request for Research Approval” letters (Appendix B) to several targeted Montessori elementary schools. In my letters to the principals of these schools, I described in detail what my project was about and answered their questions, in order to gain their trust and approve the study. Due to such open and candid communication, I was able to secure agreements from three of them, granting me the permission to collect data in their designated lower elementary classrooms and to hold 30-minute interviews with their teachers. In Fall of 2019, I observed 7 and 8-year-old students in four lower elementary classrooms in these schools and interviewed their teachers.

Two of the participating Montessori schools are urban-based (one private, one public charter), and the third one is rural with a public Montessori status. The private
urban school is accredited by the AMI (Association Montessori Internationale). The second one, which is an urban charter school, is governed by the State Charter Schools Association and has no national or local Montessori accreditation or affiliation. The third participating school is a rural-based public Montessori school and is accredited by the American Montessori Society (AMS). The reason I targeted these particular schools was that I wanted to have one representative from each of the three types of Montessori elementary schools in my selected group. The types chosen are important to the topic this study is exploring.

After permission was granted to conduct my study at the participating schools, two Letters of Consent (Appendices C₁ and C₂) were sent to the schools, one for the consent of the parents (in case it was required by the school) and one for the consent of the participant teachers. Additionally, to be compliant with protocols that govern the ethical treatment of participants in a study, participating teachers were informed in the consent letter and then reminded at the beginning of the interviews that they could terminate the interview at any time for any reason, if they wished to do so. To protect the privacy and identities of participating schools, classrooms, and their teachers, names, locations, and any other specific information about these schools that could be used to identify them or the participating classrooms or teachers are not mentioned in the text of this study. Further, in the presentation of data from the interviews, initials of pseudonyms for teachers are used.

The rationale for limiting the student pool to 7 and 8-year-olds is based on the idea that children in this age group become 1st and 2nd second graders and officially join
the “elementary” level student population. Children entering the elementary level are also entering their second stage of development, which Montessori referred to as the “childhood” stage. Children, who are just stepping into the childhood stage of development, get normalized to the new environment working alongside older children (9-12 years in age). They develop reasoning minds and want to know why they are learning the lessons that are presented to them. They become more interested in groupwork, socializing, and continuing their Exercises of Practical Life (EPL) work. Groupwork and Exercises of Practical Life (EPL) are important influences on students’ concentration or engagement in learning and on their work of self-construction in the second stage of development; thus, it was this age group that needed to be observed in the lower elementary classrooms of my selected schools in order to collect data for answering the main research question: What influences in the classrooms of selected Montessori elementary schools affect students’ concentration or engagement in learning?, and the secondary question: How does the preparation for standardized tests in the publicly-funded Montessori schools of this study affect students’ concentration or engagement in learning in visible ways?

Data Collection Instruments

From past experiences observing in classrooms, I learned that doing observations in a classroom full of young children is similar to the art of photography, especially when your observation time is short, and you are observing more than one child. A good photographer must be very quick at capturing the scenes they like at the right moment in time or they will miss the opportunity. Similarly, when observing in a classroom full of
young children with all types of activities happening, a researcher must be very quick at registering their comments about what they are observing or they will get behind in their observations and will miss other observable scenes. To collect data through observations for this study, I had to have a way to quickly register my thoughts on the effects I wanted to observe during my classroom observations. I had to devise a system to help me record events as quickly as they came to my attention. Thus, for the observation tools (i.e., Appendices E, F, and G), one column contained the desired influences to be observed and another column (Fieldnotes) contained attributes (expressions, words, phrases to describe the qualities or effects for each influence) that were entered in advance. All attributes that I could think of were filled in in advance of starting observations in classrooms to make the process of recording the attributes more efficient; that way, the attributes did not have to be repeatedly written down manually in each classroom. Symbols, or grading signs, were also added to indicate the perceived level of positivity or negativity of the effects of the in-school and out-of-school influences on students’ concentration on learning, specifically ✔, >, ✗, and <, indicating satisfactory, more than satisfactory, absence of quality or effect, and less than satisfactory, respectively. During observations, one of these symbols was then circled, depending on what was observed. These symbols substituted for handwritten fieldnotes, making the task of commenting on the attributes even more efficient. They also simplified the work of analyzing and interpreting the data by visualizing the process. Alternately, if something was observed (or stated in the interviews) that had not been entered in advance as an attribute on the data collection tool, it was handwritten as fieldnotes.
Appendix D lists the nine open-ended and semi-structured questions that the participant teachers were asked during the interviews. The questions were worded to evoke conversations with interviewees regarding the two most important influences in the Montessori classroom: teacher qualifications and competences in the Montessori method of education.

Appendix E is the basis for Rubric 1, which was designed to record observable influences of all components of the learning environment in the classrooms of participating schools (CAOSE), such as children’s behavior working individually or in groups, preparedness of the adults (i.e., teachers/guides), the nature and quality of academic materials (i.e., Montessori curriculum), preparedness of the classroom environment, and qualities of scenes (e.g., conflict resolution, visits by older students) and events (e.g., Exercises of Practical Life (EPL), Cosmic Education (CE), regular Montessori lesson presentations, lessons of grace and courtesy, and visits by specialists). The section of this observation instrument that concerned the preparedness of the adults recorded the pedagogics (methods, practices, and strategies) teachers used in the classrooms for presenting Montessori lessons to students, for managing groupwork, and handling of events.

Appendix F is the basis for Rubric 2, which was designed to record observable influences of teachers’ practices in relation to preparations for standardized tests (PST) and how those preparations affect students’ concentration and engagement in learning. Information collected with this instrument was intended to answer the secondary question in this study. Rubric 2, which was based on Appendix F, did not record any influences of
this particular out-of-school factor on the 1st and 2nd graders due to the fact that teachers
did very little or no preparations for testing this group of students in the classrooms of
participating schools during my observations. (See Chapter Four for details.)

Appendix G is the basis for Rubric 3, which was originally designed to record
observable influences of all the components of the learning environment (CAOSE) and
preparations for standardized tests (PST) on individual students’ levels of concentration
while engaged in individual work. This tool had to be modified in order to also record
students’ concentration in the context of groupwork, as well. As previously discussed,
this study collected data in lower elementary classrooms of Montessori schools. due to an
interest in how 7- and 8-year old children, who are just stepping into their second stage of
development, get normalized to the new environment. It was presumed that their
adaptation to the socializing age was going to be gradual and that it would still be
possible to see them engaging in individual work and observe the influences that affected
their concentration on learning (COL) while engaged in individual work. However, the
frequency with which children were working in groups, playing and socializing together,
instead of doing individual work necessitated revising the data observation and analysis
tools to record not only students’ individual work but their behavior in groups as well.
Based on students’ behavior in groups, the groups were also classified into four different
types: Type 1, 2, 3, or 4, described in Chapter Four. Appendix G was thus modified to
create room for the observations of these types of groups, which were entered alongside
categories of concentration on learning (COL) in individual work that were already
present. (See Figure 7 in Chapter Four.)
In addition, one of the columns in Appendix G (Fieldnotes) was modified to record effects of the teachers’ competences in safeguarding students’ concentration on learning (COL) while doing groupwork or working in groups. (See Figure 7 in Chapter Four.) Thus, Rubric 3 worked as a supplement to the Teachers’ Competences in Appendix E and thus Rubric 1.

Appendix H, which is the basis for Rubric 4, lists the predetermined attributes that the researcher was looking to gather information about through each of the interview questions. These attributes are based on the Montessori methods of education and depending on their presence or absence can be influences on children’s concentration and engagement in learning. For example, the interview question “Which of these core Montessori tenets: ‘following the child’, ‘promoting independence/self-construction’, and ‘safeguarding children’s concentration’ are you able to consistently uphold?” sought information about key tenets of Montessori education. Later, with the help of the recordings of the interviews, the information reported by each participant teacher, or that could be inferred from their response, was added to the rubric along with quotes from the teachers that related to the presence or absence of that attribute. The attributes were then evaluated based on the degree to which they were present in the teacher’s responses. For example, the above question sought information about the following attribute: Knowledge of Montessori Method, including all components of the environment: child, adults, objects, scenes, and events (CAOSE). The degree of its presence was then noted with one of the following grading signs: ✓, >, ✗, and <, indicating satisfactory, more than satisfactory, absent, and less than satisfactory, respectively. The analyses of these
attributes, displayed in Rubric 4 in Chapter Four, emerged from the comparison between the sought-after attributes and attributes in teachers’ responses. These attributes, which were chosen as predetermined themes for data collection, were also used for purposes of coding and analysis.

**Data Collection Tools (DCT)**

Data collection tools (DCT) included Appendices D, E, F, G, and H, as described above, handwritten fieldnotes, photos, and video clips, for the purpose of collecting and analyzing data from observations and face-to-face interviews in each selected school. (See Chapter Four for more information.)

**Data Analysis Tools (DAT)**

Data analysis tools (DAT) are Rubrics 1, 2, 3, and 4, which were based on the Appendices mentioned above. (See Chapter Four for how these tools were applied in the data analysis.)

**Data Interpretation Tools (DIT)**

Data interpretation tools (DIT) are tables and figures that display analyzed data from all the data collection tools in each selected school side by side for interpretation purposes.

**Summary**

In this chapter, I described the justification for selecting a phenomenological qualitative approach for this study, based on the types of participating schools, and the methods used to collect data to answer the research questions. The chapter also described the data collection instruments and how they were designed to facilitate the recording of
observable qualities of in-school and out-of-school factors in the classrooms of the participating schools. The design made it possible to describe the observable qualities using pre-entered attributes and grading tags to prepare the data for analysis at the same time that they were being collected. This process will be covered in more details in Chapter Four, which follows next.
CHAPTER FOUR

Results

Introduction

This chapter analyzes and interprets the data collected at three selected Montessori elementary schools for this study.

Analyzing and interpreting the collected data in this chapter is part of the process of creating a narrative for the assumptions that were made and the questions that were explored in this research. John Creswell (2007) suggests that in qualitative research “we shape our narrative—a narrative with many forms…a story that unfolds over time” (p. 43). The narratives that emerged from the results of data analysis in this chapter are presented in text format; visual representations of these narratives are exhibited in the form of tables and figures in Appendices E, F, G, and H.

Before describing the data analysis process or discussing the results, it is important to restate the argument that this study is based on, as implied in the title of this study “Concentration: A Pathway to Learning,” that concentration is a pathway to learning. This argument, according to Creswell (2014), is a theory. Creswell says that qualitative research uses theory, much like quantitative research, “as a broad explanation for behavior and attitudes, and it may be complete with variables, constructs, and hypotheses” (p. 64). The above argument, or theory, suggests that concentration is the force that affects learning. Although concentration has been used interchangeably with other terms such as focus, transfixation, engagement, paying attention, and others, concentration continues to refer to entering the flow or a heightened state of awareness that an individual learner enters into when all the conditions for learning are
optimal (see “Concentration” in Chapter Two for more information). This study explored and cited literature in Chapters One and Two to create a theoretical base of support for the argument or theory that this study is based on. Then, contextualized data was collected through classroom observations and face-to-face interviews, as described in Chapter Three, to find out whether the above argument can be validated in real-life applications. This validation depends on whether the results from observations parallel the results from interviews and the literature, and whether they provide answers to the primary and secondary research questions: “What influences in the classrooms of selected Montessori elementary schools in this study affect students’ concentration on learning?” and “How do the preparations for standardized tests in the selected public Montessori elementary schools in this study affect students’ concentration on learning?”

This study was designed to explore the phenomenon of applying the Montessori method of education alongside the traditional state standards and assessment laws and what effects such application has on students’ concentration on learning (COL) in the selected schools. The data collected through observations and interviews are qualitative and were focused entirely on what affected students’ concentration on learning, and not on learning itself. The theoretical foundations and linkage between concentration and learning were established in Chapters One and Two. Any interpretations made in the analyses in this and the following chapter about the results regarding the effects of observed influences on learning are qualitative and are based on the researcher’s perceptions (or perspectives) of what was observed, grounded in the literature cited in this study.
Definition of Terms

Included below are definitions of terms and their associated acronyms that are used in the text of Chapters Four and Five.

Attributes:

The term “attributes” refers to words, phrases, or expressions that describe positive or negative qualities of the influences observed during my classroom observations, influences that originated from either in-school or out-of-school factors and affected students’ concentration on learning (COL) in classrooms at the time they were observed.

Children, Adults, Objects, Scenes, and Events (CAOSE):

The research proposal created the acronym CAOSE to refer to children, adults, objects, scenes, and events, which are components (pillars) of a Montessori classroom. Each one of these components is an in-school factor and each has positive and negative qualities. These qualities are sources of influence and have positive or negative effects on students’ concentration on learning, depending on what they are. These effects are either observable or unobservable. This study looked at only the observable effects of components of CAOSE on each other and on children’s concentration on learning. Thus, when the term “effects of CAOSE” appears in the text of this paper, it refers to the observable effects of the influences of the in-school factors (e.g., children, adults, objects, scenes, and events). The unobservable effects of in-school factors are difficult to study by means of a small qualitative study such as this. The negative effects might be related to the accumulated damage of ineffective curriculum and pedagogy on each individual student, the accumulated side-effects of unprepared environments or teachers’ practices, the effects of the dysfunctionality of the school, and so on. The unobservable positive
effects might be found in the long-term grit of the teachers and their positive outlook, the commitments of staff to make the best of what they have to make the school work, positive cooperation between the parents and their children’s schools, and so on.

In addition, pseudonyms like Amicus, Amsdale, and Noah, are used to refer to the three participating schools in this study. These fictitious names are formulated as such that the first three letters in each one (i.e., AMI, AMS, and NOA, respectively) represents an acronym that contains information about each school’s Montessori affiliations as well. For instance, AMI in Amicus’ shows affiliation with Association Montessori Internationale; AMS in Amsdale’s shows affiliation with American Montessori Society, and NOA in school Noah shows NO affiliation to any Montessori organization. Schools Amicus, Amsdale, and Noah, are shown as (School-AMI, School-AMS, and School-NOA, respectively) in figures and tables in this and the next chapters. Also, this study uses fictitious names for teachers who were interviewed for this study. Anne Zion from School Amicus; Marie Waz, Michille Shuftal, Katie Orca from School Amsdale; and Kossie Callan and Manta Peera from School Noah. These teacher names are shown as (AZ, MW, MS, KO, KC, and MP, respectively) in all the figures and tables in this and the next chapters.

Data Collection Tools (DCT):

These tools refer to appendices, handwritten fieldnotes, photos, video clips, and any other means of data collection, which were created by the researcher for the purpose of recording data from observations and face-to-face interviews. The appendices in this collection of tools have a built-in column (the Analysis Column), where the analyzed and tagged attributes for all observed influences were entered. (The tagging of attributes is explained later in this chapter.)
Data Analysis Tools (DAT):

These are Rubrics 1, 2, 3, and 4. Each of these tools also has Fieldnotes columns where the tagged attributes from appendices were joined with other grouped and tagged attributes from handwritten fieldnotes, photos, video clips, and other sources, for further analysis. The Results columns of the rubrics display the final analysis of all tagged attributes from all data collection tools (DCTs) for each classroom.

Data Interpretation Tools (DIT):

These are Tables 1, 2, 3, and 4 that display the results (i.e., analyzed data dispersed from the Results columns of the rubrics) from each classroom in each selected school side-by-side for interpretation and discussion.

Exercises of Practical Life (EPL):

Exercises of Practical Living (EPL) are practical activities that are performed daily, which are carried out in the Children’s House (classroom), in order to maintain and restore proper conditions in the environment. On the importance of EPL, as mentioned before, Montessori (1983) gives EPL a permanent place in children’s work of self-construction and concentration on learning. The different areas of practical life include preliminary activities for familiarizing the child to the environment (e.g., where everything is located and how things work), care of self, care of the environment, grace and courtesy lessons, and control of movement. EPL help children to be part of taking care of themselves and beautifying their environment (Montessori, 1983). EPL, Gettman (1987) suggests, can immediately begin to satisfy the young child’s inner need to be self-sufficient. He adds that “children conduct the
practical life activities for the sake of working through the processes and mastering their manipulative skills rather than for the sake of their results” (p. 39).

Preparations for Standardized Tests (PST):

This acronym refers to the observable effects of Preparations for Standardized Tests (i.e., during the few times when PST was exercised during my observations) on 3rd grade students’ concentration and on other components of CAOSE (children, adults, objects, scenes, events).

Some teachers’ competences and practices influenced the effects of PST in the classrooms I observed, but the effects were present in the environment of the selected Montessori schools. The requirement of PST originates from an out-of-school factor (state laws) that schools cannot ignore. Therefore, PST was included in the observation tool as an out-of-school factor during the classroom observations.

Data Analysis Process

As Glesne and Peshkin (1992) suggest, the data analysis for this study involved organizing what had been seen, heard, and noted, in order to make sense of what was learned from the classroom observations and interviews. Common wisdom suggests that since “each qualitative study is unique, the analytical approach used will be unique” (Miles & Huberman, 1994, p. 433) as well. In that regard, the data analysis for this study relies on a customized, proprietary system, a process that has been ongoing since the first work on it began in 2017.

Figures 1 and 2 (Combined) include information about the number of cycles (three hours in the morning and three hours in the afternoon) spent observing in each of the classes at the three selected schools: At School Amicus, one teacher (Anne Zion) was observed for 10 cycles. At School Amsdale, three teachers were observed in two different classrooms for 10 cycles, 6
cycles in one classroom (Marie Waz) and 4 cycles in the other classroom (Teachers Michille Shuftal and Katie Orca). At School Noah, two teachers were observed in two different classrooms, for a total of 8 cycles, 4 cycles in each classroom (Teacher Kossie Callan and Teacher Manta Peera). Figures 1 and 2 (Combined) also identifies the steps in the data analysis process, from collecting the data (using the Data Collection Tools or appendices), analyzing that data (using the Data Analysis Tools or rubrics), and interpreting the data (using the Data Interpretation Tools or tables).
**Summary of Data Collection and Analysis**

<table>
<thead>
<tr>
<th>School</th>
<th>Classroom</th>
<th>Day</th>
<th>Cycles</th>
<th>Data Collected</th>
<th>School</th>
<th>Classroom</th>
<th>Day</th>
<th>Cycle</th>
<th>Data Collected</th>
<th>DATs</th>
<th>DFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>School-AMI</td>
<td>AZ's Class</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
<td>School-AMI</td>
<td>AZ's Class</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day 2</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
<td>School-AMI</td>
<td>AZ's Class</td>
<td>Day 2</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day 3</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
<td>School-AMI</td>
<td>AZ's Class</td>
<td>Day 3</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day 4</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 2</td>
<td>School-AMS</td>
<td>MW's Class</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day 5</td>
<td>Both Cycles</td>
<td>Appendices G, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
<td>School-AMS</td>
<td>KO &amp; MS Classes</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
</tr>
<tr>
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<td>MW's Class</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day 2</td>
<td>Morning Cycle</td>
<td>Appendices F, fieldnotes, photos, videos</td>
<td>Rubric 2</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 2</td>
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<td></td>
<td></td>
<td>Day 3</td>
<td>Afternoon Cycle</td>
<td>Appendices G, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 2</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 2</td>
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<td>Day 4</td>
<td>Afternoon Cycle</td>
<td>Appendices G, fieldnotes, photos, videos</td>
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<td>KC's Class</td>
<td>Day 2</td>
<td>Afternoon Cycle</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 2</td>
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<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
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<td>KC's Class</td>
<td>Day 1</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
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<tr>
<td></td>
<td></td>
<td>Day 2</td>
<td>Morning Cycle</td>
<td>Appendices F, fieldnotes, photos, videos</td>
<td>Rubric 2</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 2</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day 3</td>
<td>Afternoon Cycle</td>
<td>Appendices G, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 2</td>
<td>Afternoon Cycle</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
</tr>
<tr>
<td>School-NOA</td>
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<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 1</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 3</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Day 2</td>
<td>Morning Cycle</td>
<td>Appendices F, fieldnotes, photos, videos</td>
<td>Rubric 2</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 3</td>
<td>Both Cycles</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
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<tr>
<td></td>
<td></td>
<td>Day 3</td>
<td>Afternoon Cycle</td>
<td>Appendices G, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
<td>School-NOA</td>
<td>KC's Class</td>
<td>Day 3</td>
<td>Afternoon Cycle</td>
<td>Appendices E, fieldnotes, photos, videos</td>
<td>Rubric 3</td>
</tr>
</tbody>
</table>

The sections below describe in more detail the steps that were involved to organize, code, reduce, disperse, and interpret the collected data. Articulating the data analysis process is necessary for understanding how the results and conclusions evolved from the raw data.

**Organizing the Data**

Organizing the data involved repeatedly reading and reviewing the data gathered from the different data collection tools from each classroom in each school. Attributes that had been identified in the classrooms and marked with grading signs (✔, >, ✗, and <, indicating satisfactory, more than satisfactory, absence of quality or effect, and less than satisfactory, respectively) were then aggregated in their proper rubrics for analysis.

**Coding the Data**

Creswell (2014) states that “coding is to organize collected data into chunks or segments of text and assigning a word or phrase to the segments in order to develop a general sense of it”
(p. 197). Saldaña (2015) suggests that a “code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p. 3). The coding process used in this study is comparable to that described in the above quotes. The attributes and their accompanying grading signs (see symbols above) are the critical link between the observed influences and the meanings they generated, as described later in Chapter Five. The influences that these attributes describe are Montessori concepts, and for that reason they were selected to be used as coding categories or themes for the collected data. These influences (or themes in this context) are, what Creswell (2017), calls “predetermined codes” (p. 199). Any un-anticipated influences (i.e., the ones that were not in the appendices, for which attributes had not been entered in advance in the Fieldnotes column) were recorded by handwritten fieldnotes, audio, or video means. These data were then aggregated with similar themes in their appropriate rubrics, as described later in this chapter. Although the traditional approach in qualitative studies, according to Creswell, is to allow the codes to emerge during the data analysis, the predetermined Montessori codes created in the appendices could not support that kind of an approach to data analysis, as explained above.

Reducing the Data

The coding process, as described above, helped to identify and group relevant information in the rubrics. In some of the data collection tools (e.g., interview transcripts, handwritten fieldnotes, and video clips), the qualitative raw data were large and diverse. One important step in organizing the data was to, as Brinkmann (2013) suggests, “reduce” (p. 112) the data into useful information. Reducing the data was a necessary step in the analysis process that had to be taken before dispersing the coded attributes to their respective places.
The process of data reduction involved reviewing each data collection tool several times in order to find and sort information relevant to answering the research questions. For example, transcriptions of the interviews showed that the interviewees sometimes responded using attributes that were different from those included in advance in the Fieldnotes of the related data collection tool. In such instances when the information was not related to the interview question, it was not included in the analysis of the interviews but was set aside as a possible source of support in other parts of this chapter and the next, as needed.

**Analyzing and Dispersing Data**

After the coding and reduction of the data from each data collection tool (DCT), data from all DCTs had to be combined for analysis of each classroom and each teacher. A series of data analysis tools or DATs (i.e., Rubrics 1, 2, 3, 4) was generated for this purpose: Rubric 1 for the effects of in-school factors (i.e., CAOSE or children, adults, objects, scenes, events), Rubric 2 for the effects of out-of-schools factors (i.e., PST or preparations for standardized tests), and Rubric 3 for the effects of individual vs. groupwork on students’ concentration on learning. (Rubric 4 was designed to analyze the transcripts and is discussed later in this chapter.) Each rubric, included an Analysis column, where the results from other data collection tools for observations (e.g., handwritten fieldnotes, photos, and video clips) were factored in the analysis and interpretation of the data from the observation tools. For example, attributes describing the effects of teachers’ competences and practices in the classroom, gathered from handwritten fieldnotes, photos, and video clips, were added to the effects of adult influences already observed and noted in the observation tools. In other words, attributes scattered across the different data
collection tools (DCTs like appendices, transcripts, handwritten fieldnotes, photos, and video clips) were dispersed to their appropriate data analysis tools (DATs or rubrics) for analysis.

**Analyzing and Dispersing Observation Data**

The observation data were dispersed to the corresponding rubrics where they were joined or aggregated with observation data from 158 handwritten fieldnotes, photos, and video clips for further analysis. Thus, to interpret an observed influence the attributes that had been marked with one of the grading signs, ✔, >, ✗, and <, indicating satisfactory, more than satisfactory, absence of quality or effect, and less than satisfactory, respectively, were tabulated. If the majority of the attributes were marked with grading signs that were negative (< or less than satisfactory), then the influence of that attribute was interpreted as deficient (D) in the Results column of the rubric. If the majority of attributes were marked with grading signs that were positive (✔ or >, indicating satisfactory or more than satisfactory), then the influence of that attribute was interpreted as adequate (A). When there were different combinations of negative and positive signs for attributes, then they were weighed against each other (i.e., each positive grading sign was canceled out by a negative one) and the influence was interpreted accordingly. In other words, an influence with one positive and one negative attribute was interpreted as negligible (N). The grading sign ✗ was used to indicate the complete absence of an influence in the classroom.

The best way to understand the above process is to consider this example: In one of the classrooms observed, one of the adults in the room was wearing high-heeled boots. Her heels made a clicking sound every time she walked from one part of the classroom to the other. Two younger children who were working as a group were seen pointing at the teacher’s shoes, saying
things to each other, and laughing. The effect of that particular teacher’s quality of Attire, one of the adult influences in the classroom based on Montessori principles of education, was observable and had a negative effect on students’ concentration on learning (COL). The quality of the teacher’s attire was marked with the grading sign < in front of the attribute “noise from shoes”. In the Results column, the teacher’s Attire was interpreted as deficient, indicated by the letter D. As part of their training, Montessori teachers are taught to wear comfortable walking clothes and shoes when at work. so they can kneel or sit cross-legged on the floor to work with children.

All data collected from the classroom observations were analyzed using the above data analysis tools (DATs), or rubrics, and the procedure described in the above example. Shortened versions of the above rubrics are shown in Figures 3-8 below.

Figure 3 below shows a shortened section of Rubric 1, the data analysis tool for the effects of in-school factors on students’ concentration on learning (COL). It shows the application of grading signs to the attributes in the Fieldnotes column, based on classroom observations.

**Figure 3**

*Sample Rubric 1 with Grading Signs for Predetermined Attributes*

<table>
<thead>
<tr>
<th>CAOSE</th>
<th>Influence</th>
<th>Fieldnotes</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>Appearance</td>
<td>Tired, ✔enthusiastic, &gt; energetic, ✔happy, sad, stern</td>
<td>A N D</td>
</tr>
</tbody>
</table>

Attributes like enthusiastic, energetic, and happy are traits of positive adult influences, whereas tired, sad, and stern represent negative influences of an adult in a Montessori environment. To
interpret Appearance as a quality of an adult that influences children’s concentration on learning (COL), the grading signs (✔, >, ✗, <) to the left of the attributes were tabulated to determine the letter to be assigned in the Results column: A for adequate, N for negligible, and D for deficient, based on which attributes were tagged, what grading signs they were tagged with, and how those signs were tabulated. Figure 4 below shows that there were three positive attributes about the observed teacher’s appearance, so her appearance was interpreted as adequate (A) in the Results column.

**Figure 4**

*Sample Rubric 1 with Grading Signs and Results for Predetermined Attributes*

<table>
<thead>
<tr>
<th>CAOSE</th>
<th>Influence</th>
<th>Fieldnotes</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>Appearance</td>
<td>tired, ✔enthusiastic, &gt; energetic, ✔happy, sad, stern</td>
<td>A</td>
</tr>
</tbody>
</table>

For influences that were not observed or could not be observed, such as Exercises of Practical Life (i.e., EPL), the note: “There was no way to observe this influence” was added in the Fieldnotes column and the predetermined attributes were crossed out. The complete absence of this influence was also indicated by the grading sign ✗ in the Results column. Figure 5 below shows a shortened section of Rubric 1, where the absence of EPL activities was noted.

**Figure 5**

*Absence of EPL as a CAOSE Influence*

<table>
<thead>
<tr>
<th>CAOSE</th>
<th>Influence</th>
<th>Fieldnotes</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>EPL Activities</td>
<td>There was no way to observe this influence.</td>
<td>✗ ✗ ✗</td>
</tr>
</tbody>
</table>
The same procedure was used to analyze the effects of out-of-school factors (i.e., preparations for standardized tests or PST) on students’ concentration on learning (COL). Figure 6 below shows a shortened section of Rubric 2, where no effects of PST on Exercises for Practical Life (EPL) were observed, but for Academic Materials the effects of PST were observed to influence students’ concentration on learning (COL).

**Figure 6**

*Effects of Preparations for Standardized Tests (PST)*

<table>
<thead>
<tr>
<th>PST</th>
<th>Influence on CAOSE</th>
<th>Fieldnotes</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>PST</td>
<td>EPL Activities</td>
<td>There was no way to observe this influence.</td>
<td>☓ ☓ ☓</td>
</tr>
<tr>
<td></td>
<td>Academic Material</td>
<td>&lt; completeness, &lt; authenticity, &lt; substitutions, &lt; modifications, ✔ topical organization</td>
<td>D</td>
</tr>
</tbody>
</table>

Rubric 3 was originally designed to record students’ level of concentration during individual work, but had to be revised to include students’ level of concentration during groupwork and working in groups, as well.

Based on how the students were behaving in their different work setups, and how frequently the groups formed and dissipated during the timeframe of the observations, the groups were classified into four different types. In Appendix G, these are coded as Types 1, 2, 3, and 4. Children in Type 1 groups engaged in groupwork, stayed stationary in one area (e.g., math, language, or sensorials) for longer periods of time, and were not noisy. Type 2 groups were smaller in number (2-3 children) and consisted of children who were younger in age and were mostly observers. They would join different groups at different times just to observe their work and were not noisy. Children in Type 3 groups were mostly socializing and playing, moved from one area to another as they kept talking, and were
noisy. And then there were students in Type 4 groups, usually numbering 2-3 older children, who came together and did not engage in any type of purposeful work, observations, or play. They wandered in different directions and interfered with other students’ work and play. Negative group behavior was more apparent in School Noah and School Amsdale, which are publicly funded Montessori schools, than in School Amicus, a private Montessori school. The reasons for such differences might be related to the structural and affiliation features of these schools, features that might also be the source of negative effects on teachers’ effectiveness in managing their classrooms.

Figure 7, which is a shortened version of Rubric 3, shows the various levels of concentration and engagement of students working individually and in groups and teachers’ competences in managing students in those configurations. In this rubric the grading signs for the adult competences were determined by their students’ levels and types of concentration and engagement working individually and in groups. In the first instance, the teacher’s competence in classroom management was marked with the grading sign ✔ as the students in the classroom were observed to be Type E & F (Engaging in individual work and finishing). Thus, she received an A for adequate for this competence. In contrast, the teacher in the last instance was marked with two grading signs: ✔ and < as the students in the classroom were observed to be Type NEBO (Not engaging in individual work but observing). Generally, a child who is not engaging in work but observing others is considered, in the Montessori method, to be engaged in learning but from others. However, in this situation, the student was not concentrating
even when observing others, so the teacher received an N for negligible as the two grading signs were weighed against each other.

Figure 7

Observation of Students’ Concentration and Engagement in Individual Work and Groupwork

<table>
<thead>
<tr>
<th>Date: XXX</th>
<th>Classroom ID: XXX</th>
<th>School ID: XXX</th>
<th>Adult ID: XXX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Types of Concentration and Engagement of Students Working Individually</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engaging &amp; Finishing (E&amp;F)</td>
<td>Engaging But Not Finishing (EBNF)</td>
<td>Not Engaging But Observing (NEBO)</td>
<td>Not Engaging Not Observing (NENO)</td>
</tr>
<tr>
<td><strong>Types of Concentration and Engagement of Students Working in Groups</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 1</td>
<td>Type 2</td>
<td>Type 3</td>
<td>Type 4</td>
</tr>
<tr>
<td>Doing GW, Not Noisy, Not Mobile</td>
<td>Playing, Noisy Not Mobile</td>
<td>Playing, Noisy Mobile</td>
<td>Not Playing, Noisy, Disrupting Mobile</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th># of Days Observed</th>
<th>Cycles</th>
<th>Type of Concentration</th>
<th>Fieldnotes: Adult’s Competences</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Morning</td>
<td>E&amp;F</td>
<td>✔ Managing Classroom</td>
<td>A</td>
</tr>
<tr>
<td>Day 1</td>
<td>Morning</td>
<td>Type 3</td>
<td>&lt; Managing Groupwork</td>
<td>D</td>
</tr>
<tr>
<td>Day 1</td>
<td>Morning</td>
<td>Type 3</td>
<td>&lt; Managing Groupwork</td>
<td>D</td>
</tr>
<tr>
<td>Day 1</td>
<td>Afternoon</td>
<td>Type 4</td>
<td>&lt; Managing Work Groups</td>
<td>D</td>
</tr>
<tr>
<td>Day 1</td>
<td>Afternoon</td>
<td>NEBO</td>
<td>✔ &lt; Managing Classroom</td>
<td>N</td>
</tr>
</tbody>
</table>

Analyzing and Dispersing Interview Data

Data produced from face-to-face interviews with lower elementary teachers in the selected schools consisted of five transcripts. To prepare the transcripts for analysis, all the attributes each teacher used to describe their qualifications and competences were highlighted and aggregated in each teacher’s rubric (Rubric 4) for analysis. In order to isolate information relevant to the attributes that were sought in the interview and research questions, it was necessary to, as Seidman (2006) suggests, “organize excerpts from the transcripts into categories” (Kindle Loc. 2674) and connect them with the themes of those questions.
The rubrics were then consolidated into Table 4. Thus, the results in Table 4, which are interpreted as Adequate (A), Negligible (N), or Deficient (D), include excerpts from the interview transcripts and other sources of data like handwritten fieldnotes, photos, and video clips, as explained earlier. Names and any identifying information from the transcripts were removed in Table 4. Due to concerns about privacy and confidentiality of data, no samples of photos and video clips are included in this section as these files contain personal identifiers.

A shortened version of Rubric 4, in Figure 8 below, shows a snapshot of one teacher’s responses to the first question and how they were analyzed and interpreted. Four attributes were marked with the grading sign >, indicating that the teacher’s qualifications were “more than satisfactory” and together were interpreted as Adequate (or A).

**Figure 8**

*Analysis of Teachers’ Qualifications in Interview Responses*

<table>
<thead>
<tr>
<th>Questions</th>
<th>Influences Sought in Questions</th>
<th>Analysis of Attributes Found in the Answers</th>
<th>Results</th>
<th>Q #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question: Please tell me something about yourself and how you became interested in Montessori education.</td>
<td>Qualifications: General Education Level: Certification Traditional: Montessori Certification: Job Experience</td>
<td>&gt; My Major was in Education in college. &gt; I have a traditional teaching degree. &gt; I have both AMI and AMS Certificates. &gt; 22 years job experience</td>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

As mentioned above, handwritten fieldnotes (see Figure 9A below) were also used in the interpretation of the interview data and are factored into the results of Table 4. A sample of the 158 fieldnotes that were handwritten during the observations is included below to illustrate the kind of supplemental information that was factored into the interpretation of the results from the
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interviews, specifically in assigning Adequate (A), Negligible (N), and Deficient (D) to the attributes reflected in the teachers’ responses to questions.

Figure 9A

*Sample of Handwritten Fieldnotes on the Influences of CAOSE (in this case, the Adult)*

<table>
<thead>
<tr>
<th>Handwritten Fieldnotes on Observable Influences of CAOSE During Observations (Supplement to Rubrics 1, 2, 3, 4)</th>
<th>School</th>
<th>Teacher</th>
<th>Related to Adult’s Influence</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Type 3 𝘤: hanging out by the window, but not distracting.</td>
<td>School-AMI</td>
<td>AZ</td>
<td>Managing Groupwork</td>
<td>✔</td>
</tr>
<tr>
<td>Half the class is in music room today</td>
<td>School-AMI</td>
<td>AZ</td>
<td>Competences</td>
<td>&gt;</td>
</tr>
<tr>
<td>Student #19, 1, 9, 3rd grader – Type 1 writing individually but around the same table</td>
<td>School-AMI</td>
<td>AZ</td>
<td>Managing Groupwork</td>
<td>&gt;</td>
</tr>
<tr>
<td>Student #14 E&amp;F writing</td>
<td>School-AMI</td>
<td>AZ</td>
<td>Managing Groupwork</td>
<td>✔</td>
</tr>
<tr>
<td>Student #2 E&amp;F individual joins groupwork with #19, 1, 9, 3rd grader</td>
<td>School-AMI</td>
<td>AZ</td>
<td>Managing Groupwork</td>
<td>✔</td>
</tr>
<tr>
<td>Student #7, 3rd grader, 5 TYPE 1 with French expert and lessons on small red insets</td>
<td>School-AMI</td>
<td>AZ</td>
<td>Managing Groupwork</td>
<td>✔</td>
</tr>
<tr>
<td>Main guide tells student #14 that his decorations on his workbook need to be more than just pumpkins</td>
<td>School-AMI</td>
<td>AZ</td>
<td>Qualifications</td>
<td>&lt;</td>
</tr>
</tbody>
</table>

Pre-triangulation Results From Observations

Michael Huberman and Mathew B. Miles (1994) suggest that “Valid analysis is immensely aided by data displays that are focused enough to permit viewing of a full data set in one location and are systematically arranged to answer the research question at hand” (p. 432). After dispersing the data from collection tools to analysis tools, other tools were created to help compare the results from the observation tools for each classroom with results from other classrooms in the same school, and against classrooms in other schools, as suggested in the above quote. Tables 1, 2, and 3 are the data interpretation tools (DITs) that were created to show the effects of in-school factors (children, adults, objects, scenes, events or CAOSE), out-of-school factors (preparations for standardized tests or PST), and students’ levels of concentration.
on learning (COL) individually and in groups for all classrooms in all schools, respectively. Put differently, these tables are syntheses of data collection tools (DCTs) and data analysis tools (DATs), which combine data from the appendices with handwritten fieldnotes, photos, and video files: Table 1 is the synthesis of Appendix E and Rubric 1; Table 2 is the synthesis of Appendix F and Rubric 2, and Table 3 is the synthesis of Appendix G and Rubric 3. And again, for reasons of privacy and confidentiality of data, samples of photo and video files could not be provided in the presentation of the data; however, they were figured in the interpretation of the data, in other words, in assigning Adequate (A), Negligible (N), or Deficient (D) to the qualities of the attributes. However, some samples of handwritten fieldnotes that do not contain identifiers and were included in the interpretations of the data, are shown below later in this section.

The results (i.e., Adequate, Negligible, and Deficient, represented by letters A, N, and D) shown in these tables are pre-triangulation results, before triangulation with the results of interviews and the literature, discussed as conclusions in Chapter Five.

**Results of Observations in Table 1**

Table 1, as explained above, is the synthesis of all tools used to observe and analyze the effects of the qualities of children, adults, objects, scenes, events (CAOSE) on students’ concentration on learning. For example, if the effects of a given adult’s Competences were interpreted as Adequate (A) in Rubric 1, that (A) was transferred from Rubric 1 to Table 1. That (A) in Table 1, represents a visual narrative of the subject adult’s competences, which goes back to how the attributes were recorded and interpreted in all data collection and analysis tools. All interpretations of the participant teacher’s competences in Table 1 originate in classroom observation and are only the researcher’s perspectives at this stage. Some of these effects, which
have been interpreted as Adequate, Negligible, and Deficient (using A, N, and D, respectively), are visually self-explanatory like the Care of Self and the Environment, physical and aesthetic qualities of the Environment, Quality of Furniture. However, other results in Table 1 need to be explained further and are compared across three classrooms, one representing each type of selected school: Anne Zion's classroom in School Amicus, Marie Waz's classroom in School Amsdale, and Kossie Callan’s classroom in School Noah, in that order.

The first observation result that needs explanation is Student Concentration. In Anne Zion's classroom in School Amicus, which otherwise received the most As for other qualities, it was interpreted as Negligible (N), whereas in Kossie Callan’s classroom in School Noah, which otherwise received the least number of As and the highest number of Ds, it was interpreted as Adequate (A).

These results are pre-triangulation and do not include information from the interviews. More information about Student Concentration was revealed during the interviews, so this result from the observations is reinterpreted with the results of the interviews and discussed in Chapter Five.

Another result that needs to be explained further is Independence. This quality was interpreted as Adequate (A) in Anne Zion's classroom in School Amicus and as Deficient (D) in the classrooms of the other two schools. During observations in Anne Zion's classroom, there were very few instances of children seeking help from their teacher with their work, whereas in the other two schools, children approached the teachers for help numerous times for various reasons relating to assistance with work, discipline, and developmental issues. It was also observed that in School Amsdale and School Noah, there were between 5-6 adults in both
classrooms helping and correcting children’s work. While this might be considered helpful in a traditional classroom, it is considered a distraction to students’ concentration on learning (COL) in the Montessori classroom.

The interpretation of this result is as follows: In School Amsdale and School Noah, there were too many adults in both classrooms helping and correcting children’s work; thus, it may be that children did not have the opportunity to benefit from the didactic nature of Montessori materials, which help children discover their own mistakes if they are given enough time to re. This dependency of students on receiving help from adults may also be due to the fact that assignments were given to students that may not have been the work that they chose to do on their own or work that they may not have been familiar with and was not in their zone of proximal development (Vygotsky, 1978).

The results for Adult Competences also needs to be explained, in particular results from the handwritten fieldnotes (see Figure 9B). This influence was interpreted as Adequate (A) in Anne Zion's classroom in School Amicus but as Negligible (N) in Marie Waz's classroom in School Amsdale and Deficient (D) in Kossie Callan’s classroom in School Noah. In Anne Zion's classroom, the students were engaged in their work and finished their work both individually as well as in groups, indicating Anne Zion's competence in managing individual work and groupwork in the classroom. Examples that illustrate Anne Zion's competences in this regard are included in the handwritten fieldnotes in Figure 9 below.

Figure 9

Sample of Handwritten Fieldnotes on the Influences of Adult Competences

<table>
<thead>
<tr>
<th>Handwritten Fieldnotes on Components of CAOSE During Observations (Supplement to Rubrics 1, 2, 3, 4)</th>
<th>School</th>
<th>Teacher</th>
<th>Influences on CAOSE Related to Adult Competences</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
</tbody>
</table>

Sample of Handwritten Fieldnotes on the Influences of Adult Competences

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<th>Handwritten Fieldnotes on Components of CAOSE During Observations (Supplement to Rubrics 1, 2, 3, 4)</th>
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<th>Teacher</th>
<th>Influences on CAOSE Related to Adult Competences</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
</tbody>
</table>

Sample of Handwritten Fieldnotes on the Influences of Adult Competences

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<tr>
<th>Handwritten Fieldnotes on Components of CAOSE During Observations (Supplement to Rubrics 1, 2, 3, 4)</th>
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<th>Teacher</th>
<th>Influences on CAOSE Related to Adult Competences</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
</tbody>
</table>

Sample of Handwritten Fieldnotes on the Influences of Adult Competences

<table>
<thead>
<tr>
<th>Handwritten Fieldnotes on Components of CAOSE During Observations (Supplement to Rubrics 1, 2, 3, 4)</th>
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<th>Teacher</th>
<th>Influences on CAOSE Related to Adult Competences</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
<tr>
<td>✔ &gt; x &lt; #</td>
<td>School</td>
<td>Teacher</td>
<td>Influences on CAOSE Related to Adult Competences</td>
<td>Analysis</td>
</tr>
</tbody>
</table>
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| Student #11 goes to the 3rd grader to remind her of her job of the day (creative distraction) | School-AMI | AZ | Qualifications | > | 8 |
| Two youngest plus one 3rd grader 🡪 youngest helped 3rd grader carry the large green math cube into the hallway | School-AMI | AZ | Managing Groupwork | ✔ | 55 |
| Student #12 giving lesson to #2 TYPE 1 standing by the sink working on a joint project | School-AMI | AZ | Managing Groupwork | ✔ | 56 |
| Student HR working individually ☒ E&F | School-NOA | MP | Managing Individual Work | ✔ | 108 |
| Student EM working individually ☒ E&F with high levels of concentration | School-NOA | MP | Managing Groupwork | > | 109 |
| Student AJ working ☐ E&F small metal inset and filling it in with lines ☐ she engages in conversation with the other student at the table | School-NOA | MP | Managing Individual Work | ✔ | 110 |

The first handwritten fieldnote (#8) describes the behavior of two students: “Student #11 goes to a 3rd grader to remind her of her job of the day.” This is an example of creative distraction, that is, a distraction that has positive effects for both children, and shows that the teacher has fostered collaborative learning among children.

The interpretation of this result is as follows: When there is that kind of working relationship among children, it reflects the teacher’s competence in fostering a positive working environment in the classroom. It also reflects Anne Zion's qualifications as a Montessori-trained teacher, that is, she understands the theoretical importance of collaborative learning and the role of creative distraction, that is, a student distracting another student in the classroom can have a positive influence.

Adult Competences were also captured in the interview transcripts, the results of which are discussed in Pre-triangulation Results from Interviews later in this chapter and in Chapter Five, as part of the triangulation of data.

Other results that are important to comment on are Exercises of Practical Life (EPL) and the materials associated with it. Both rows contain ✗ for all classrooms in all schools; this reflects the lack of EPL and EPL materials in these classrooms.
The interpretation of this result is as follows: EPL are practical activities that are supposed to be performed daily in the Children’s House (classroom), in order to maintain and restore proper conditions in the environment. The different areas of practical life include preliminary activities, care of self, care of the environment, grace and courtesy lessons, and control of movement. On the importance of EPL, as mentioned in Chapter One, Montessori (1984) gives EPL a permanent place in children’s work of self-construction and concentration on learning. Exercises of Practical Life (EPL) help children to be part of taking care of themselves and beautifying their environment (Montessori, 1983). EPL, Gettman (1987) suggests, can immediately begin to satisfy the young child’s inner need to be self-sufficient. He adds that “children conduct the practical life activities for the sake of working through the processes rather than for the sake of their results” (p. 39). In other words, they are interested in mastering their manipulative skills more than anything else.

The fact that EPL was not present in any of the classrooms that were observed suggests a departure from the essential principles of Montessori education. The topic of EPL came up again in the interviews, the results of which are discussed in Interpretation of Interview Results later in this chapter and in Chapter Five, as part of the triangulation of data.

The result that relates to Groupwork Dynamics also needs explanation. Groupwork Dynamics was interpreted as Adequate (A) in Anne Zion's classroom in School Amicus, but Deficient (D) in Marie Waz's classroom in School Amsdale and in Kossie Callan’s classroom in School Noah. Children in School Amicus were observed to be using “please” and “excuse me” and other expressions of common courtesy, whereas in the other two schools, these expressions were not observed consistently during interactions within and among groups of children. In
addition, there were instances of children distracting each other in School Amsdale and School Noah, which was not observed in School Amicus. Thus, in School Amicus, the nature of the interactions among children was aligned with principles of grace and courtesy and was interpreted as Adequate (A), whereas in the other schools, the interactions were not. However, in School Amsdale, the children were not as consistently distracting to one another as in School Noah.

The interpretation of this result is as follows: Groupwork Dynamics is facilitated by the use of common expressions of courtesy, which are usually part of grace and courtesy lessons in the Montessori classroom. When these expressions are not used consistently, Groupwork Dynamics lack grace and courtesy, both of which are necessary characteristics of behavior in the Montessori classroom. Since no lessons of grace and courtesy were observed in any classroom, the absence of grace and courtesy in student interactions during groups was not unexpected.

Cosmic Education was not observed during the scheduled observations in the schools and thus was as Deficient (D) across all classrooms.

The interpretation of this result is as follows: In the true Montessori setting, every day starts with a practice of cosmic education as that is one of the cornerstones of the Montessori method, as discussed in Chapter One. It is intended to give children some basic knowledge about the orderliness and preparedness of nature for life (e.g., geology, glaciers, climatology) (Herbst, Gruber-Fuchs, & Herbst, 2008). Montessori (1949) said that “If we have a vision of the cosmic plan in which every form of life in the world is based on purposeful movements, having their purpose not in themselves alone, we shall be able to understand and to direct the children's work better” (as cited in Herbst et al., 2008, p. 211).
The absence of Cosmic Education was a significant Montessori element that was missing from all the classrooms in all the schools observed for this study.

Cultural Presentations was not observed as a separate activity in School Amicus; the interpretation of this quality was Deficient (D). In contrast, in School Amsdale, one teacher was consistent with the Pledge of Allegiance first thing in the morning. Although this does not qualify as a Montessori cultural presentation, in the context of the American traditional education system, it holds a place of cultural significance, and so was interpreted as Adequate (A). In School Noah, the cultural lesson was manifested in stories by Black authors and writers during circle time in one of the classrooms, and so was interpreted as Adequate (A).

The interpretation of this result is as follows: Cultural Practices in School Amsdale and School Noah seems to have replaced Cosmic Education. These practices were not consistent with cosmic education, as originally envisioned in Montessori education and described above. This result is considered to be an effect of affiliation with American Montessori Society, a result that was also revealed during the interviews and is thus discussed in Pre-triangulation Results of Interviews later in this chapter and in the conclusions in Chapter Five.

Another result that needs further explanation is Lessons and Observations, which was interpreted as Deficient (D) in all classrooms, indicating that during the classroom observations, there were no Montessori lessons with Montessori materials that were presented to individual or small groups of students. There were adults working with groups, but they did not resemble a typical Montessori lesson, where the adult presents the lesson with Montessori materials and the children observe.
The interpretation of this result is as follows: This results suggests that the teachers were not presenting lessons based on their observations of the developmental needs of the children. This suggests a disconnect between Montessori theory and teachers’ practices in the classroom.

Finally, the result of Specialist Work needs further explanation. In Anne Zion’s classroom at School Amicus, several specialists (language, music, art) came to the classroom and worked with students at various times. Thus, Specialist Work in this classroom was interpreted as Adequate (A). In School Amsdale, there was a Chinese language specialist who came once during the observation period, and thus Specialist Work was interpreted as A for that classroom. In contrast, in Kossie Callan’s classroom in School Noah, there were no specialists who worked with students for extracurricular activities during the observation period; thus, Specialist Work was interpreted as Deficient (D) in that classroom.

The interpretation of this result is as follows: The lack of specialists to provide extracurricular activities can be interpreted as the school not having the resources to pay for them or the pressures of preparations for standardized tests (PST), which do not leave enough time for enrichment programs. Additional results regarding Specialist Work were revealed during the interviews and are thus discussed in Pre-triangulation Results of Interviews later in this chapter and in the conclusions in Chapter Five.

Overall, the results in Table 1 show that in School Amicus, the in-school factors (children, adults, objects, scenes, and events or CAOSE) had the highest number of positive observable effects on students’ concentration on learning (COL). The influence of those factors was interpreted as Adequate (A), as evidenced by 22 “As” in one classroom, followed by School Amsdale, with 22 “As” across two classrooms, and School Noah, with 3 “As” across two
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classrooms. Similarly, School Amicus had the lowest number of negative observable influences interpreted as Deficient (D), as evidenced by 7 “Ds” in one classroom, followed by School Amsdale, with 28 “Ds” across two classrooms, and School Noah, with 48 “Ds” across two classrooms. Negligible (N) influences follow the same pattern, with School Amicus showing the lowest number, with 2 “Ns” in one classroom, followed by School Amsdale with 9 “Ns” across two classrooms, followed by School Noah with 7 “Ns” across two classrooms. The different areas of exercises of practical life (EPL), which include preliminary activities, care of self, care of the environment, grace and courtesy lessons, and control of movement, did not exist during observations in any of the participating schools.

Results of Observations in Table 2

Table 2 is the synthesis of tools used to observe the effects of out-of-school factors, specifically preparations for standardized testing (PST), on all components of the classroom (children, adults, objects, scenes, events or CAOSE) and thus on students’ concentration on learning (COL).

Most boxes in the data collection tools (DCT) for the effects of preparations for standardized tests (PST) on students’ concentration on learning (COL) were marked with the ✗ sign, indicating that no effects of PST for 1st and 2nd grade students during scheduled observations in the selected schools were observed.

During the interviews, teachers provided some explanations for the lack of preparations for standardized tests (PST) for 1st and 2nd graders during classroom observations. These explanations are discussed in the Pre-triangulation Results from Interviews later in this chapter and in Chapter Five, as part of the triangulation of data.
With the 3rd grade students, however, the effects of preparations for standardized tests (PST) were present in the classrooms observed and were interpreted as Negligible (N) and Deficient (D). Although 3rd graders were not a selected group of students for this study, it was possible to observe and record the effects of PST on the components of children, adults, objects, scenes, events (CAOSE) for those students and thus on their concentration on learning (COL).

One quality in the classroom that was influenced by preparations for standardized tests (PST) for 3rd graders was Montessori Academic Materials. Academic materials for traditional education were shelved next to Montessori materials in School Amsdale and School Noah. With the exception of Anne Zion's classroom in School Amicus, Montessori materials were out of sequence and mixed with non-Montessori materials, such as Disney coloring books and other commercial brands, like STEM (Science, Technology, Engineering, Math). Thus, for those four classrooms, Academic Materials were interpreted as Deficient (D).

The interpretation of this result is as follows: This particular quality, as discussed in Chapter One, refers to duality of objects and its impact on the authenticity of materials. Academic materials in the Montessori classroom can be compromised due to preparations for standardized tests (PST) that are rooted in the traditional curriculum. This result not only affected the sequence of Montessori materials but also compromised the authenticity and the intention of the Montessori method behind the materials.

Another quality in the classroom that was influenced by preparations for standardized tests (PST) for 3rd graders was Attitude, both the attitudes of children and the attitudes of teachers. In some instances, PST affected the attitude of individual children as well as the attitude of the adult in the classroom who was involved in the preparations. In one instance (or
scene) in one of the classrooms in School Noah, one 3rd grade child was observed having a hard time sitting around the table with the main guide and paying attention to the lesson the guide was giving to prepare students for a standardized test. The main guide was trying to console the student, who was upset at being interrupted and could not focus on the lesson at hand. The guide’s response was noted in the data collection tool (DCT) as an effect of PST on the child’s attitude and was then interpreted in the data analysis tool (DAT) as Deficient (D).

In the same school, in Kossie Callan’s class, there was another scene involving the teacher saying “no” to a child in a manner that was not consistent with the Montessori rules of grace and courtesy. The teacher was busy with a group of older students and, judging by the non-Montessori materials they were using, she was presumably preparing the students for some sort of test. The teacher’s response was noted in the data collection tool (DCT) as an effect of PST on the adult’s attitude and was then interpreted in the data analysis tool (DAT) as Deficient (D).

The interpretation of this result is as follows: The students’ and teacher’s attitude in the classroom are affected by the need for teachers to prepare 3rd graders for standardized testing. As a result of PST, teachers did not have time to do individual lessons or attend to requests of individual children for individual presentations and sometimes responded with an attitude that was not mindful of the Montessori principles of grace and courtesy. Teachers’ preoccupation with preparations for standardized tests (PST) limited their ability to attend to the needs of the younger children.

Another quality in the classroom that was influenced by preparations for standardized tests (PST) for 3rd graders was Comfort Level in Environment. In all three classrooms, the main guides were giving lessons preparing students for standardized tests to large groups of 3rd graders
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in the middle of the main room, which made passage for 1st and 2nd graders uncomfortable. This quality was interpreted as Deficient (D) in both classrooms in School Amsdale and in both classrooms in School Noah.

The interpretation of this result is as follows: Children in Montessori classrooms need to have uninterrupted, continuous spaces to move about. Any activity that interrupts the ease and flow of movement violates the Montessori principle of free movement in the classroom and is considered to be disruptive to children’s work. Because preparations for standardized tests (PST) were done with large groups of 3rd graders that created obstacles for other children in the classroom, PST affected Comfort in the Environment.

Independence was another quality in the classroom that was influenced by preparations for standardized tests (PST) for 3rd graders. In several instances (scenes) in both classrooms at School Amsdale and School Noah, students’ independence was noticeably compromised as they were either part of the group involved in PST and not able to engage in Montessori work or their Montessori work was restricted by the group involved in PST. Thus, this quality was interpreted as Deficient (D) in both classrooms at School Amsdale and School Noah.

The interpretation of this result is as follows: Preparations for standardized tests (PST) interfered with students’ ability to work independently. Because teachers were occupied with preparing different groups of 3rd graders for standardized tests, they were not able to guide 1st and 2nd graders in their individual or group work and students not engaged in PST were not able to engage in individual or group work on their own.

Limiting Spaces was another quality in the classroom that was influenced by preparations for standardized tests (PST) for 3rd graders. When groups of 3rd graders were gathered in one
area for PST, it limited access to that area by other children, namely by 1st and 2nd graders. This quality was interpreted as Negligible (N) in both classrooms of School Amsdale and as Deficient (D) in both classrooms of School Noah. In School Amsdale the space in the classroom observed was bigger than the classroom at School Noah, but students from two classrooms were combined, thus necessitating a much larger space, as noted in the handwritten fieldnotes during observations. Thus, the classroom at School Amsdale was not deficient, but it was also not adequate.

The interpretation of this result is as follows: Similar to lack of Comfort in the Environment, Limiting Spaces also limits the Montessori principle of free movement in the classroom. Thus, preparations for standardized tests (PST) affects the Montessori principle of free movement in the classroom.

Managing Groupwork was also affected by preparations for standardized tests (PST) for 3rd graders. In both classrooms of School Amsdale and School Noah teachers were busy with 3rd graders for too long, which appeared to be at the expense of other students who were not being prepared for testing. Thus, this quality was interpreted as Deficient (D) in both classrooms at School Amsdale and School Noah.

The interpretation of this result is as follows: Preparations for standardized tests (PST) for large groups of students for extended periods of time take the teacher away from their other responsibilities, such as managing students’ individual and group Montessori work, and attending to disciplinary issues.

Finally, Observing Students, was another quality that was also affected by preparations for standardized tests (PST) for 3rd graders. The main teachers in both classrooms at School
Amsdale and School Noah were not seen observing 1st and 2nd graders doing their daily Montessori work during the times they were occupied with PST. Thus, this quality was interpreted as Deficient (D) in both classrooms at School Amsdale and School Noah.

The interpretation of this result is as follows: Preparations for standardized tests (PST) for large groups of students for extended periods of time take the teacher away from their other responsibilities, including observing 1st and 2nd graders doing their daily Montessori work during the times they were occupied with PST, possibly because they were busy with PST with the 3rd graders.

Overall, the results on the effects of preparations for standardized tests (PST) on students’ concentration on learning (COL) in Table 2 show that there were no qualities in School Amicus that were interpreted as Negligible (N) or Deficient (D). In contrast, in School Amsdale, there were 9 qualities that were interpreted as D, 7 of which were interpreted as D in both classrooms of the school and 2 of which were interpreted as D in one classroom. Another quality was interpreted as Negligible (N) in both classrooms. In School Noah, there were 12 qualities that were interpreted as D in both classrooms of the school and one quality that was interpreted as D in one classroom.

The interpretation of these results are as follows: The effects of preparations for standardized tests (PST) are much more prevalent in School Amsdale and School Noah, both of which are publicly funded Montessori schools, than in School Amicus, which is a privately funded Montessori school. It seems clear that the two publicly funded Montessori schools are under more pressure to adhere to requirements of state assessments than the privately funded Montessori school. This finding is consistent with results from interviews with the teachers and
is discussed in more detail in Pre-triangulation Results from Interviews later in this chapter and in Chapter Five, as part of the triangulation of data.

**Results of Observations in Table 3**

Table 3 is constructed from the observations of students’ levels of concentration on learning (COL) working individually and in groups. The results in Table 3 demonstrate the levels of student concentration and engagement in individual work and working in groups in the classrooms of each participating school. The results show that there was more individual work in School Amicus than in School Amsdale and in School Noah. In Anne Zion's classroom in School Amicus, there were six different students who on different occasions engaged in individual work on their own and continued concentrating until they finished their work. In addition, there were three other individual students who were not engaging in work themselves but were observing the work of other students, which is an expected type of learning in that age group, according to the principles of Montessori education.

Furthermore, there was a greater frequency of groups in Anne Zion's classroom in School Amicus that were engaging in learning through socializing and playing in groups and that were not interfering with the work of other groups. There were more Type 2 (Playing, Noisy, Not Mobile) and Type 3 (Playing, Noisy, Mobile) groups than Type 4 (Not Playing, Noisy, Mobile, Disrupting) groups in School Amicus. There were ten instances of Type 3 groups during the classroom observations in Anne Zion's classroom, compared to one to five instances in the classrooms of the other two schools. In Anne Zion's classroom, there were two instances when Type 4 groups were observed forming and dissipating, but the behavior of the group members was different than Type 4 group members in School Amsdale and School Noah. Although Type
4 groups at School Amicus were noisy and moving around, they were not disturbing the work of other groups, as Type 4 groups were doing in the classrooms in the other two schools. In School Amsdale and School Noah, Type 4 groups were disruptive and interfering with other student groups. In addition, Type 4 was more prevalent in School Amsdale and School Noah, where there was little individual work taking place in either school, in contrast to School Amicus. The frequency of group formation and dissipation in general was higher in School Amsdale and School Noah compared to School Amicus. However, there were five instances of Type 1 (Doing Groupwork, Not Noisy, Not Mobile) groups in School Noah but not in the other two schools. While at first glance this observation may seem contradictory, it is also consistent with the results of observations regarding Student Concentration and with results from the interviews and will be discussed in Chapter Five, as part of the triangulation of data.

The interpretation of these results are as follows: The results of Table 3 regarding levels of student concentration and engagement in individual work and working in groups also make a statement about each teacher’s qualifications, competences, and levels of experience in handling students’ individual work and work in groups in their classrooms. The results also suggest that each school’s structural and affiliation features might have affected teachers’ handling of the groups. In Chapter Five in the triangulation stage, when conclusions are drawn, these features and their effects on the behavior of students’ groups and teachers’ competences in managing the groups are discussed further.

Pre-triangulation Results from Interviews

The results in this section are based on the information in Table 4, which is a synthesis of Appendix H and Rubric 4. Figure 10 (in Appendix H) shows the responses to Questions #1, 4, 5,
6, and 7 from three main teachers/guides who were interviewed, one from each type of selected school: Anne Zion from School Amicus, Marie Waz from School Amsdale, and Kossie Callan from School Noah. These five questions were selected because they cover the most important points related to the objectives of the study. Responses to the other questions (#2, 3, 8, and 9) are not discussed here. (See Appendix D for a complete list of the nine interview questions.)

Tabulation of the results in Figure 10 is more visual and easy to understand, as suggested by Huberman and Miles (2002).

In the environment of Montessori schools, the influences of adults encompass not only their competences in creating a suitable Montessori environment that supports concentration and independence, but also in managing the other requirements of the Montessori method, such as presenting work to individual students and small groups, safeguarding children’s concentration, and observing their progress when working individually and within groups. The interview questions were designed to solicit information on the above influences of the teachers and also on how they adhered to the laws of standards and assessment (i.e., the effects of preparations for standardized tests or PST) while attempting to uphold the core principles of the Montessori method at the same time, a phenomenon or structural feature in their schools that, as explained earlier, creates duality of objectives in teachers’ classrooms and impacts their ability to prepare an authentic Montessori environment for their students.

For example, Interview Question #2 “How would you describe your job as a Montessori teacher?” was designed to elicit from a participant teacher attributes that could point to his or her knowledge about the role that a Montessori teacher must assume in a Montessori environment. The Montessori method requires the teacher to follow the children and their interests and guide
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them to where their inclinations for self-construction and independence take them. (For more information on the role of the preparedness of the adult in Montessori education, see Chapter Two).

The following section discusses responses to the five selected interview questions and the interpretation of those responses, as Adequate (A), Negligible (N), or Deficient (D), with three main teachers, one representing each of the selected school types. The following teachers’ responses are discussed in this order: 1) Anne Zion in School Amicus, 2) Marie Waz in School Amsdale, and 3) Kossie Callan in School Noah.

**Results from Teachers’ Responses to Interview Questions**

**Question # 1:** “Please tell me something about yourself and how you became interested in Montessori education?” This question sought attributes about the teachers’ qualifications with regard to traditional and Montessori education and their years of teaching experience.

1) **Teacher Anne Zion in School Amicus** revealed that she had a college teaching degree as well as training from both AMS and AMI, and had 22 years of teaching experience. She has worked at two different Montessori schools, one AMS-affiliated and the other AMI-affiliated. In both cases, the schools sponsored her Montessori training: “This school sponsored me to do my AMS” and “This school is an AMI affiliated school, so then I took the AMI training, sponsored by the school.” Her attributes revealed in her response parallel all the attributes sought in this question and were interpreted as Adequate (A). Anne Zion's narrative suggests that she is a qualified and prepared Montessori adult. Her qualifications are part of the adult’s positive influences on students’ concentration on learning in the classroom, as observed in Anne Zion's classroom and discussed in the section “Results from Observations.”
2) Teacher Marie Waz in School Amsdale stated that she has a traditional graduate licensure program certificate for 1st through 8th grade as well as an AMS Montessori certificate, and 6 years of teaching experience. She was especially enthusiastic about “Montessori’s ideas of how children learn and how best to spark that joy of learning inside children and in their hearts.” Marie Waz's attributes stated in her response parallel all the attributes sought in this question except for AMI certification and overall were interpreted as Adequate (A). Marie Waz's narrative suggests that she is a qualified and prepared Montessori adult. Her qualifications are part of the adult’s positive influences on students’ concentration on learning in the classroom, as observed in Marie Waz's classroom and discussed in the section “Results from Observations.”

3) Teacher Kossie Callan in School Noah indicated that she has credentials in the traditional method of teaching but does not have AMS or AMI certification in Montessori teaching. Kossie Callan stated about the value of a Montessori education: “I wanted to give that experience to more children, and especially Black children, because Montessori has been a very white space and I think that it has a lot to offer for children of color who have been done a disservice by the educational system. So that's what drew me to becoming a Montessori educator.” Her quote suggests that she has a desire to make Montessori education available to the disadvantaged children in her community, but when she was asked the question “Are you Montessori certified?”, her reply was “I am not Montessori certified. I did one semester in a Montessori training program but I have a traditional teaching license,” indicating that Kossie Callan is a qualified traditional teacher but not a prepared Montessori adult. The attributes used in her response with regard to her Montessori qualifications do not parallel the attributes sought in this question and were interpreted as Deficient (D). Her lack of Montessori education is part of
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the negative influences that were noted during observations in the classroom, as discussed in the section “Results from Observations.”

**Question #4** “Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why?” This question sought attributes about knowledge of Montessori method and importance of CAOSE, specifically knowledge of child, importance of adult role, importance of materials/objects/physical environment, management of scenes (unplanned occurrences), and management of events (planned occurrences).

1) **Teacher Anne Zion in School Amicus** thinks that all the pillars in the question are important. But, she places the child first on the list of importance; second place goes to the environment; in the third place is the adult; and materials take the fourth place in her list. As she said, with regards to the importance of the child, “Without the child you don't have a classroom.” Except for the importance of the adult’s role, Anne Zion's attributes used in her response parallel all the attributes sought in this question. Her knowledge about the Montessori method, and the influences of the components of CAOSE (children, adults, objects, scenes, events) was overall interpreted as Adequate (A). Her narrative suggests that she is a qualified and prepared Montessori adult.

2) **Teacher Marie Waz in School Amsdale** thinks that all the above pillars in the question are important. The reason why she thinks they’re all important is “because if any one of them is not functioning in a way that contributes to the whole structure working, it’s not going to work.” Adults have the responsibility to find out why one of the pillars is not working well. Marie Waz's attributes used in her response parallel all the attributes sought in this question, with the
exception of the importance of materials, based on a comment she made regarding a child not needing to know the classification of a specific flower. This comment was interpreted as a modification of Montessori materials caused by the duality of objectives in the classroom, as the teacher referred to time constraints and the need to move the child from focusing on the classification of the flower to another activity related to preparation for standardized testing. Otherwise, Marie Waz’s narrative suggests that she is a qualified and prepared Montessori adult and her knowledge about the Montessori method and the influences of the components of CAOSE (children, adults, objects, scenes, events) was overall interpreted as Adequate (A).

3) Teacher Kossie Callan in School Noah stated, “Who do I need to keep with me longer, who needs a reteach, who needs to go ahead and go because they have it, and now I am holding you back but by making you stay here with me?” In Montessori education, teachers never restrict a child’s movement or their choice of activity in order to teach them something that the teacher thinks they need to learn. Although Kossie Callan may recognize the importance of children, adults, objects, scenes, and events (CAOSE), this quote suggests confusion about how to implement these attributes in the Montessori environment.

Her response suggests she is the one who decides who needs to learn what and groups children accordingly, including holding back students or restricting their movement based on an assessment of what she thinks they have learned. Kossie Callan’s attributes included in her responses do not correspond to the attributes sought in this question. Her narrative suggests that she is a qualified traditional teacher but not a well-prepared Montessori adult. Most of the attributes Kossie Callan has used to respond to the different parts of the question are affected by structural features of School Noah, a charter school, and are not consistent with the Montessori
method. School Noah is not affiliated with any Montessori accreditation institutions, like AMI and AMS. Kossie Callan’s knowledge about the Montessori method, and the influences of the components of CAOSE was interpreted as Deficient (D).

**Question #5** “Which of these core Montessori tenets: following the child, promoting independence/self-construction, and safeguarding children’s concentration on learning (COL) are you able to consistently uphold?” was designed to elicit the interviewees’ knowledge of the Montessori tenets and skills in following the child, promoting independence/self-construction, and safeguarding children’s COL, as well as upholding these tenets all at the same time.

1) **Teacher Anne Zionin School Amicus** stated that she is most conscious of promoting independence and self-construction, but does not do well with following the child, as required by the Montessori method. Anne Zion wants children to be ready to understand what they are learning and make the leap from sensorial understanding of facts to understanding them when they are on a piece of paper, which suggests the need to do more than just follow the child because otherwise, they would not be prepared for standardized testing. Furthermore, she stated that if she is following the child and realizes that the child is not spending their time being productive, she thinks she can interrupt the child’s work to have them work on what she thinks they should be working on, specifically working on subjects that can help prepare students for standardized tests.

This view is not supportive of the child developing independence and reflects the effects of preparation for standardized tests (PST) on the adult’s decision to interrupt the child. In contrast to following the child, which is a foundational principle in Montessori education, Anne Zion wants to make sure that children benefit from all the other knowledge that she makes
available in the classroom. She stated: “Math does need to happen; it’s part of what we do in the world. So always playing with that balance, and maybe it’s sure, you go first thing in the morning to the music room and spend a bunch of time there, but if I see after a couple days that you're still not getting math done, we’re going to need to put a different system in place for you.” This statement from Anne Zion indicates that she was struggling between balancing adherence to the Montessori method and her obligation to prepare children for math and other subjects, like science, that are required by the state standards and assessment laws. To make sure that I understood her perspective on this issue, I asked her a follow-up question: “Is that [the need to prepare students for all subjects] based mostly on your observation of an individual child? Making sure they are exposed to all the elements of the environment equally by the end of the year? You want every child to get a little work on math, and a little bit of geography or geometry?” to which she replied: “Yes, because what’s the saying: ‘Follow the child but not off the cliff?’ You know, that’s why I’m here -- I’m that little buffer. ‘I’m really glad you’re excited about your sculpture of a pigeon and we need to talk about this other thing that you’ve been avoiding!’ Like, I am not doing you a service.” This answer suggests that she feels obligated to interrupt a child’s self-selected activities, such as music or art, in order to prepare the child for subjects that would help them pass standardized tests. The above statements are a clear indication of the influence of the duality of objectives and the AMS-affiliation in Anne Zion's overall Montessori teaching approach, consistent with AMS’ philosophy to modify the Montessori method to work within the U.S. educational system. Anne Zion's attributes used in her response do not parallel the attributes sought in this question, specifically skills related to following the child, promoting independence/self-construction and upholding the tenets
simultaneously, and were interpreted overall as Negligible (N). (For similar quotes indicating the impact of duality of objective and AMS-affiliation on Anne Zion's teaching, refer to Figure 10 in Appendix H.)

2) **Teacher Marie Waz in School Amsdale** wants to make sure that she covers the material that she thinks that children need to have. Marie Waz does not prepare individualized lessons, which means that she does not observe individual children as to where they are in their development. She stated, “But following the child does not mean that the child will learn everything about their favorite football team even though they are deeply passionate about it. My role is to help them develop passion in many other areas in the classroom. So, for me following the child means helping them with their independence but spark enough excitement so they believe in themselves that they can start saying, ‘Oh, I can do this.’”

The first sentence in this statement contains attributes suggesting that instead of following the child, a foundational principle in Montessori education, Marie Waz wants to make sure that her students are introduced to all the subjects and they are not limited to learning one thing even though they may be passionate about it. Although this sounds like a good idea on the surface, the idea is affected by the duality of objective in the sense that the standards and assessment requirements oblige a teacher to uniformly prepare all students in all the subjects that are contained in the tests. The attributes used in “helping them with their independence” in the second sentence in Marie Waz's quote point to the challenge that she feels between supporting her students’ independence in choosing their own work and the obligation to prepare them in all the subject areas that are included in the standardized tests. So, again, the above statements are a clear indication of the influence of the duality of objectives and the AMS-affiliation in her
overall Montessori teaching approach, consistent with AMS’ philosophy to modify the Montessori method to work within the U.S. educational system. Although Marie Waz has knowledge of the Montessori tenets of following the child, promoting independence/self-construction, and safeguarding children’s concentration, as well as upholding all at the same time, her competences in implementing them in the classroom were interpreted as Deficient (D).

3) Teacher Kossie Callan in School Noah responded to the question about the key Montessori tenets as follows: “Following the child is again one of the ones that I use a lot. I try to keep that at the center of my planning. Even just planning week by week, I have an idea of where I want to go. But where we were last week will determine where we are this week. If I just plan my whole year, then where’s the room for me to follow the children? Like we were at recess and somebody found a leaf. They brought it in: ‘What’s this, what kind of leaf is this?’ Okay, I am going to pull out the leaf posters. I’m not going to tell you I didn’t plan to do leaves today. So, I pulled out the leaf poster. We figured out it’s a maple leaf. We were like: ‘Oh, could we do maple syrup? Is that possible in the city?’ So now we are looking up urban maple syrup tapping. Or now we are taking a nature walk and looking around, trying to figure out which tree is a maple tree. So, following the children. Letting them know that they mean so much to me that they told me they were interested in this. I went to the library and got them a book because they wanted to know about this. And I was like, let’s go look it up. That, to me, will also show I want them to carry that right. And like, if I want to know something, I can find out. I do not have to wait for somebody to show me it; I can find it out. That is really huge for me.”

Although Kossie Callan’s response shows her desire to follow the child, her response also illustrates that she has taken one child’s interest in a maple leaf and created a lesson for all the
children in the classroom. In addition, the teacher seems to have taken charge of the child’s construction of knowledge. Thus, the statements in Kossie Callan’s quote, to follow the child and support their independence, do not support one another. They contain many attributes that stand in contradiction to following the child, promoting independence, and safeguarding children’s concentration, tenets that were sought in the interview question and are at core of the Montessori method of education. A The quote also suggests that since Kossie Callan has no formal Montessori education, she falls back on her traditional teaching inclinations to do things for the entire class, to take control of the class and be the one who decides what needs to be taught to the whole group of students, when, and how instead of trusting that children are capable of making those determinations themselves. A trained Montessori teacher should not make plans for the entire class: “Even just planning week by week, I have an idea of where I want to go. But where we were last week will determine where we are this week” about an entire classroom of students as if they all have the same interests, like a herd of cattle. This kind of falling back to traditional practices, as was explained in Chapter Two, within the context of a “supposed” Montessori environment is an indicator of a teacher with no Montessori training and low levels of competence operating ineffectively in a public or charter Montessori classroom with dual objectives. Kossie Callan’s competences related to implementing the two most important Montessori tenets of following the child and promoting independence/self-construction, as well as safeguarding children’s concentration and upholding them all at the same time were interpreted as Deficient (D).

**Question #6** “Would you tell me what influences in your classroom exert positive or negative effects on your students’ work and concentration as you try to uphold the above
tenets? ’ intended to seek from the teachers information about their competences in identifying the influences of in-school and out-of-school factors on their students’ concentration on learning (COL) and on their own abilities to manage groupwork and exercises of practical life (EPL) in their classrooms.

1) Teacher Anne Zion in School Amicus stated: “So, I was thinking that having this three-year cycle and building a class culture is a really important and positive influence. Because as you work to have this expectation about quality of work, or just what working looks and sounds like, those returning students can help build on that from year to year. I had also written that returning students can have a positive influence. At this very moment I’m feeling like, well not so much ’cause this has been a little bit of a rough week, but in general, I certainly think I overall do a really good job of modeling what I call ‘friendliness with error.’ Like, if you don’t ever try something new, if you don’t ever risk making a mistake, you’re really going to limit yourself in terms of what you can learn. So, I think new students come in being worried about being right or wanting to not make mistakes. In terms of a negative effect, or something that has a negative impact is children's skills, you know. Often more than half of my youngest children aren’t yet reading and aren’t yet writing when they come into this classroom. And my training says, ‘They'll know all their math facts before they come up, so you just jump into these other things,’ and that’s not actually the reality. And then that creates such a wide gap between those returning students who have gotten those things and the new students, who in some ways are pretty helpless. Like, it’s hard to be independent if you can’t read the board yourself, and you need to rely on others.”
Anne Zion’s statement regarding the role of older students in her classroom, in fact, parallels Dr. Montessori’s claim that young children learn better from older children and it is a basic tenet of the Montessori learning environment, a point that is mentioned in Chapter Two. The part in Anne Zion's statement when she says, “Students come in being worried about being right or wanting not to make mistakes” suggests the pressure of the duality of objectives in her classroom and on the students. As mentioned in Chapter Two, there are no tests or exams in a Montessori school outside of preparation for standardized tests. Children worrying about making mistakes in her classroom might be connected to the fear or anxiety they feel about not performing well in standardized tests and/or disappointing the adults. In a Montessori classroom, children do not normally worry about making mistakes or cry, as she mentioned, about getting something wrong when they are doing a self-selected activity. The formative ways of assessment that are built within the layers of Montessori lesson presentations do not make a judgment about the child or assign a label “i.e., in the form of a score ” if the child is not getting something right or is making mistakes when they want to learn something of their own will. From Anne Zion's statements and other quotes that are listed in Figure 10, it becomes apparent that Anne Zion counts on the pleasant, cooperative learning culture she has created in the classroom and the returning older children to help the new students learn. She has created a positive attitude about making mistakes; they are not viewed as set-backs. Instead, they are an opportunity for older children to help the younger ones. On the other hand, when newcomers come in with minimal skills in language and math, even though that is an opportunity for the older children to teach the younger ones, it takes time away from other activities that she wants to plan for the children as a whole. Anne Zion believes that the culture of cooperative learning in the classroom can help
children to normalize even if they come to school from backgrounds where they did not have the chance to learn to read and write. What has a negative effect on students’ concentration on learning (COL), in her classroom, according to Anne Zion, is the scheduling of specialists during the cycles of the day. Having specialists coming and taking children out of the classroom to prepare them in subjects of science and math is also part of the preparations for standardized tests, which reflects as the duality of objectives, discussed elsewhere in this paper. Visits from specialists, especially the ones that are hired to prepare children in subjects of the tests, cause children to leave their Montessori work in order to take lessons from them. When asked if she had any control over the scheduling of the specialists and how many children have to leave their work and go for lessons with the specialists, she said no. She thinks that these visits have a negative effect on children’s work and concentration, and on her daily schedule. Overall, Anne Zion's competences in understanding the positive and negative influences in the learning environment on students’ concentration on learning (COL) were interpreted as Adequate (A).

2) Teacher Marie Waz in School Amsdale focused on the negative effects in her classroom, which she thought had to do with the level of noise and the fact that children do not have an understanding of the discipline that is required to work together. She thinks that the noise disrupts other children’s concentration on learning (COL). She thinks that a positive influence on students’ concentration would be to have a corner where loud children can be isolated. Reducing the level of noise is necessary, she thinks, in order to increase the level of concentration. She states, “I would say over the years we have worked really hard to help the children develop awareness of their actions and their voice levels and their choices on other people. So if there isn’t a sense of understanding about how important it is that they use quiet
voice levels, although I know that they’re excited and they speak loud, but that is a real problem. And for some children it is very hard for them not to interrupt and blurt out and not get excited and want to jump up and show you something that they’re doing and you’re in the middle of a lesson. That is hard. Those things take time and for some children it takes longer. But to have standards and hold on to those standards is really important. I remember from my past when I was learning and observing classrooms having assigned spots for those who needed to be isolated and work alone, I thought it was very wrong, but it is necessary. It is a tool that will help them. It is our job to help them understand that about themselves.”

An analysis of Marie Waz's answer to the question reveals that although Marie Waz's desire to reduce noise in the classroom and increase concentration is well intended, but as a trained Montessori teacher, she should be more aware of how children learn, and how great of a need children have for socializing and being noisy, especially those who are in the 7 to 9 years of age, as in her classroom. Her answer might also be related to the fact that she is operating between two different methods of education and is under pressure due to the duality of objectives that is created as a result. Marie Waz's quote suggesting all noise levels be reduced to improve concentration and isolating noisy children to a corner are not Montessori-prescribed measures for improving concentration and go against children’s need to self-construct and learn through play and socializing. Based on her response to this question, Marie Waz’s competences in understanding the positive and negative influences in the learning environment on students’ concentration on learning (COL) were interpreted as Deficient (D).

3) **Teacher Kossie Callan in School Noah** stated: “To be honest, when we’re really strict about their movement, that has a positive effect on their productivity and their
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Concentration. So, one of the ideas in Montessori is that you are free to move. But that is also one of the things that negatively affects their productivity and their concentration. People are getting up in the middle of whatever and just going somewhere else. So, when we say you cannot move for the next 20 minutes, you have to stay at this spot and do this thing. Now, that doesn't mean I didn’t let you pick. So, I gave you five minutes to walk around and pick what you're going to do and get all your stuff. Okay, but now you’re not going to stop. Five minutes in, you’re not going to change. No, you’re going to stay here and you’re going do it. So, like forcing them to be still is literally having a positive effect on getting an actual piece of work done. Or completing a task with a material you have to do certain things with. Doing what you need to do the entire time, then cleaning up and putting it back. I think, to be honest, being a bit restrictive and strict about movement can have a positive effect on productivity. Sometimes the freedom to move and choose has a negative effect on their concentration because they’re already scattered. You’re six or seven years old, so I don't know why I thought you could concentrate all morning anyway.”

Kossie Callan believes that although freedom of movement is one of the basic tenets of the Montessori method, at the same time, it is a source of frustration for her because she is not able to have children sit still for periods of time in order for her to go through her daily lesson schedule. Her idea to restrict children's movement in order to achieve higher productivity and concentration in the classroom is a good example of a teacher operating under the pressure of duality of objectives, with no Montessori training trying to implement tools of traditional education in the context of a Montessori environment. Restricting children’s movement is contrary to the most essential tenet of Montessori philosophy. Freedom of movement is the cornerstone of Montessori philosophy and is considered to be the unfolding of life itself. For
Kossie Callan to suggest that “the freedom to move and choose has a negative effect on students’ concentration because they’re already “scattered” goes not only against Montessori’s guidelines for education of character and rules of proper conduct for adults in the classroom, but is also potentially damaging to children’s sense of self-worth.

When Kossie Callan was asked “Ok so freedom of movement is one of the negative influences, what would be the next one?” Her response was “The freedom to choose. As an adult, you regulate yourself. I've picked this and now I have to do this until I'm done. As a child, they get bored and want to pick something else. So, how do I teach them that balance? Yes, you do have the freedom to choose, but now that you've chosen, you have to stick with this for 20 minutes and finish it. So, they go both ways. Of course, you can concentrate more when it’s your choice. I always tell them, if you don’t, I think I’m going to pick for you. And they are like, No, I want to. So, when they pick, it gives them that agency to concentrate because they picked it. But then the pull of the movement comes, that other work I wanted to do. She picked that, I wanted to do that, too. It is like the saying: The same thing you love is the same thing you hate. Freedom to move, freedom to choose, freedom to repeat: these are Montessori basics. But it would also drive me crazy. Sit down, be still, pick something. You are wandering everywhere, okay you are repeating it. I know you have the freedom to repeat it, you have done it 30 times. I need you to do the next one. But, that is the beauty, that is the rub.”

This quote suggests that Kossie Callan also likes to make the choice of activity for children if they don’t have an idea as to what to work on as quickly as she would like them to make that choice. She sets time frames for children to not move and not get out of groupwork. She is against children repeating their activities as much as they want to. Kossie Callan’s quote
suggests that she is for the arrest of spontaneous movements and the imposition of arbitrary tasks, two practices that are contrary to successful application of Montessori principles. Kossie Callan’s competences in understanding the positive and negative influences in the learning environment, especially her disregard for the importance of freedom of movement and choice, were interpreted as Deficient (D.) (To see the summative effects of Kossie Callan’s other quotes on the interpretation of these competences, refer to Figure 10 in Appendix H.)

**Question #7** “How do you prepare your students for the various state-required tests without interrupting students’ concentration on their Montessori work?” sought attributes regarding their knowledge of the Montessori method and competences in preparing students for standardized tests (PST) while maintaining students’ concentration on learning (COL).

1) **Teacher Anne Zion in School Amicus** was asked if she uses the packet of material that teachers receive for standardized tests. Her response was: “We don’t, no, not at all. So with this MAP (Measures of Academic Progress) assessment test that we administer, just to our oldest children, there are reams of documentation on the kinds of things that are expected. And to be honest, I think we hardly look at that at all. But those MAP test questions as I understand it are based on Minnesota state standards in different areas. And over the years I’ve become familiar with the kinds of things they are. So those are in the back of your mind, or just knowing that setting and character development are terms that people use. And if you move to another educational environment, even though those aren’t album lessons that I have, I make sure that children have exposure to those things at one point or another.” Anne Zionsays that she prepares her students by incorporating test preparations into her Montessori album. She says that she does not use the materials because she is familiar with them and knows what to work on to get the
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children ready for standardized tests. Anne Zionis concerned with how her children do on standardized tests because if they don’t do well, it reflects badly on her. Having children for three years relieves the pressure on her to pull the children out of their activities to prepare them for standardized tests. And since 1st and 2nd graders aren’t tested in her school, Anne Zion has the luxury of indirectly preparing these students over time for testing in their 3rd year. Anne Zion was then asked “Do your children do well on the standardized tests? to which she replied: “Yes, because as I tell the children, their results on the MAP tests say as much about me as they do about them. And so there’s a section on the MAP test where they’re expected to know decimals, and if I don’t ever give decimal lessons until the end of the third year, then I’m to blame. That’s on me, that’s not on the child.” Anne Zion says that she prepares her students for standardized testing in a gradual fashion, but it’s a source of concern if the child does not do well and that has to be explained to the parents. From her other quotes, I gathered that she does fewer lessons on preparing for standardized tests with individual children; most of her work is with small groups showing them how to use features of Chromebook to practice so they can be ready for when they are tested.

The above strategies that Anne Zion employs to prepare her students for tests and comply with standards laws suggests that Anne Zion is able to manage the impact of duality of objectives on her students’ Montessori work and keep its impact on students’ concentration on learning (COL) to a minimum. Anne Zion's competences in her knowledge of Montessori method and her practices preparing students for tests while safeguarding their concentration on Montessori work were interpreted as Adequate (A).
2) **Teacher Marie Waz in School Amsdale** answered the question by saying, “In our school we don't have a model to dictate to us what to do to prepare 3rd grade students for standardized tests. But they still get those standardized tests. It’s remarkable how well they do considering that we don't prepare them that much for those tests.” Michille Shuftal is pleased with her students’ results on the ELA (English Language Arts) tests considering how little preparation they do in those areas in comparison to other traditional schools. Although she has some standardized test materials on those subjects that she gives to her students to practice, she gives credit to her students’ self-directed learning of those subjects. I asked Marie Waz if testing authorities provided a schedule for her to follow to prepare students for the tests. She said they did not, but she knows where the Montessori method falls short with regard to themes and subjects of the tests and with regard to materials for meeting children’s needs in today’s world. But she thinks she is aware of those needs and helps her students to fulfill those needs.

These “needs in today’s world” that Marie Waz is referring to are needs for subjects and materials that are not part of Montessori curriculum for elementary levels and yet the students must be ready to pass the tests on them. Thus, preparing the students to do well in these subjects is connected to the effects of duality of objectives and the AMS affiliation in Marie Waz's classroom, a pressure that she must deal with on a day-to-day basis. Marie Waz provided no specific strategy in her practices to suggest that she is handling the effects of duality of objectives in ways that can protect students’ concentration on learning (COL). And her attributes alluding to the shortcomings of Montessori method and the fact that she thinks she is aware of the “needs in today’s world” and helps her students to fulfill them, were vague and did not point to a particular set of competences that suggested she was able to do so without interfering with
students’ concentration on learning (COL). Marie Waz ’s competences in knowledge of Montessori method, practices of preparations for standardized tests (PST), and maintaining students’ concentration on learning (COL) while doing PST was interpreted as Negligible (N) for this question.

3) **Teacher Kossie Callan in School Noah** stated: “I will be honest; I have not done a good job of preparing my students for the state required test. I am guilty of thinking that what works for me will work for everyone. I was this Montessori child who happily plugged away doing my work, and then when they would say “OK you're going to take a test today,” I would say “Oh OK.” I would take the test; I would go home. You know, it was no big deal to me. Unfortunately, the stakes are much higher for my students. I went to a private Montessori school, where the tests were because we wanted to. I went to a private Montessori school, Children's House, through 8th grade. For my students, the stakes are much higher. You have to take a comprehensive assessment starting in 3rd grade that puts you on par with every other student in the state. That is how they will judge you. They will not judge my babies by the beautiful Native American projects that we have on the walls, they will judge them by how they do on the test. So, what I'm doing now is working from the standards as opposed to working from this Montessori ideals.”

In this quote Kossie Callan claims that she understands the importance of Montessori work and the freedom of choice, yet it’s clear from her responses that she stays close to the demands of the state standards or performance on standardized tests. She introduces her students to computer systems to help them become familiar with the processes involved in taking tests. She said, “I have the 3rd grade standards and I plan all of our lessons off of that. Then for the 3rd
graders themselves, I have additional work on the reading and math standards that I’m having them do. It’s just worksheets, packets, it’s direct instruction in things. In Montessori, you kind of will just let it flow, and it will come. But now I’m like, I need to make sure that you know your place value, your numbers up to 100,000, whatever it is. I have a whole grid on the computer, planning lessons, using the benchmarks to make sure the lessons are geared toward the standards. Even independent work. I’m creating, not Montessori work, but work that’s independent that they can do that will also carry them closer to the standards.” The quote also suggest that under the pretence of preparing for “today’s high stakes” and meeting the standards requirements, which is the influence of duality of objectives in her classroom, Kossie Callan feels obligated to interrupt children’s self-chosen activities or socializing in order to prepare them for subjects that would help them pass standardized tests. She has abandoned the demands of her Montessori side of the curriculum and has resorted to mocking the efficacy of it. Kossie Callan’s competences in knowledge of Montessori method, practices of preparations for standardized tests (PST), and maintaining students’ concentration on learning (COL) while doing PST was interpreted as Deficient (D).

**Common Themes in Teachers Responses**

The common threads, experiences, and world views among participant teachers could be summed up as follows:

1) The common point in all teachers’ worldviews was that Montessori schools tend to be inaccessible to children from certain backgrounds, and that access should be open to all. Teacher Anne Zion, representing School Amicus, agrees with the idea of AMS and AMI working together in order to make Montessori available for children through public schools. Marie Waz,
representing School Amsdale, wants to make Montessori available to everyone and not just the elite. Kossie Callan, representing School Noah, thinks that Montessori is Eurocentric and available only to privileged white families. She wants to make Montessori education available to minority students. In short, all want to make Montessori education available to all children and not just the elite.

2) All teachers had some personal experiences with Montessori education that informed their worldview about Montessori education. Notably, Marie Waz from School Amsdale had previous experience teaching at a private Montessori school, but was uncomfortable with the perceived exclusive and elite atmosphere of private Montessori schools, and having since moved to a public Montessori school, expressed enthusiasm for the spread of that model: “I feel happy about a lot of schools being public Montessori schools.” Kossie Callan from the publicly-funded charter School Noah had attended Montessori as a child and had come to appreciate the Montessori method more recently after comparing it with her children’s experience in traditional schools. From Kossie Callan’s perspective, the exclusivity of Montessori goes beyond economics: “Montessori has been a very white space and I think that it has a lot to offer for children of color who have been done a disservice by the educational system.” So, for Kossie Callan, Montessori schools offer a self-directed alternative for children who have struggled in traditional schools, which are more financially accessible but, by definition, more rigid in terms of measurement of success. Anne Zion and Marie Waz see a solution to the accessibility issue in the public Montessori school model, reflecting the effects of AMS affiliation in thinking on the issue.
3) Another point in common is that all teachers have traditional teaching licenses, but they were drawn to the Montessori method through family experiences or encounters with Montessori education in their lives. Two teachers, Anne Zion from School Amicus and Marie Waz from School Amsdale, were encouraged and financially supported by their schools to get their certifications in Montessori education; however, Kossie Callan from School Noah did not pursue formal Montessori certification for reasons that were not shared with the researcher, even though she went to a Montessori elementary school as a child. Knowledge of the Montessori method for an adult teaching in a publicly-funded or a private Montessori school is a positive adult influence in a Montessori learning environment. Teachers equipped with such knowledge should be able to adopt practices that would make the effects of duality of objectives and affiliations to different Montessori organizations, which are intrinsic characteristics of the schools that employ them, easier to handle.

4) All teachers implied in their various quotes that requirements of standards and assessment laws must be met head-on and they must prepare their students for standardized tests to varying degrees and at different times depending on their grade levels. Also, all three teachers spend time to familiarize their students with computer software that they need to learn in order to be able to take the tests and pass them successfully, one more negative influence of preparation for standardized tests (PST) because it takes time away from children to concentrate on their Montessori activities in the environment.

5) Teachers were asked about how they handled preparations for standardized tests (PST) for 1st and 2nd graders. Their answers explain the lack of observable effects of preparations for standardized tests (PST) on 1st and 2nd graders’ concentration on learning (COL). Their answers
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indicate that there were not many testing requirements for those grades, and whatever preparations they were asked to do with 1st and 2nd graders they integrated into their Montessori lessons so as not to interrupt the children’s concentration on their Montessori work.

6) Although all teachers were familiar with the theory of the Montessori method, they were deficient in their competences, to various degrees, in applying their theoretical Montessori knowledge to safeguard their students’ concentration on learning (COL) under the pressures of duality of objectives, caused by the standards and assessment laws, and by their schools’ Montessori affiliations or lack thereof. For example, all participant teachers’ desire to make sure that their children are “ready” as a group and the importance they attach to preparing the class as a whole for standardized tests originates from the negative effects of different structural features and Montessori affiliations of their schools and the obligations they are under from the state’s standards and assessment laws to make sure that students are rendered ready for the standardized tests. All teachers were also deficient in maintaining exercises of practical life (EPL) in their environments, another effect of duality of objectives, as time for EPL, an essential component of the Montessori curriculum, is cut to make time for preparations for standardized tests (PST) and other requirements of standards and assessment laws.

Summary

This chapter described the steps that were involved in organizing and preparing the data for analysis. Explanations were provided for the design of the coding of the data, based on predetermined Montessori themes explored in the literature in Chapters One and Two. Examples of data collection, analysis, and interpretation tools were presented in the form of figures, accompanied by an explanation of how the data were analyzed and interpreted. Results from the
analysis and interpretation of data from the observations and interviews across the five classrooms in the selected schools were then discussed.
CHAPTER FIVE

Conclusion

Introduction

This chapter provides an overall summary of the study and recaps what has been learned about the nature of the influences found, their effects, and how they led to answering the research questions. In the end it discusses the limitations of the study and makes a statement on the possibilities of future research on its topic.

The Introduction in Chapter One stated that this study intends to identify influences that affect students’ concentration on learning (i.e., an individual student’s own “voice and choice” in what the student wants to concentrate on or be engaged in) in classrooms of three types of Montessori elementary schools. Students’ Voice and Choice are “noteworthy features of the educational research literature in recent years.” (Jenkins, 2006, p.1). On voice and choice concept Cook-Sather (2002) makes the assertion that “There is something fundamentally amiss about building and rebuilding an entire system without consulting at any point those it is ostensibly designed to serve.” (Cook-Sather, 2002, pp.3-14)

One of the most important influences that affects COL in the learning environment of such schools is the application of Montessori method of education in synchrony with the demands of standards and assessment laws, which are based on epistemologies of traditional public education, The idea of exploring the effects of such influences and what the teachers do on a day-to-day basis in their classrooms to function in such a context was behind the design of this study when it was being conceptualized.
In Chapter Two, this paper cited literature stating that the application of Montessori method of education in the settings of the traditional public-school classrooms is a new phenomenon in the paradigm of public education in the U.S. Literature claims that such application is an influence in the learning environment of Montessori schools and it creates a duality of objectives for teachers in their classrooms. According to Angela Murray and Vicki Peyton (2008), the phenomenon creates a context in which teachers strive to achieve a child-centered Montessori environment while attempting to fulfill the requirements relating to the state and federal standards and assessment laws, at the same time. This claim implies that such a context creates a state of coexistence for teachers in their classrooms and becomes an important influence on their practices and behavior that ultimately affect their students’ concentration and all other components of their learning environment. Data was collected in three types of Montessori elementary schools, as described in Chapter Three.

The other important influence in the learning environment of the selected schools that had similar effects on teachers as those of the duality of objectives, was the selected schools’ affiliations or memberships to different Montessori organizations like AMI (Association Montessori Internationale) or AMS (American Montessori Society). And as explained in Chapter One, the demands that these organizations place on member schools are designed to accomplish different goals and are at times even contradictory to one another.

Teachers’ practices and their worldviews on how to implement the Montessori method in their classrooms change depending on the degrees of demands from these pressures and their own levels of preparedness in how they meet these challenges. The struggles of teachers are
shared experiences among the teachers in all Montessori schools that must contend with such challenges (Moustakas, 1994).

In addition to exploring the literature, this paper also collected data through observations and interviews on the effects of the above two influences on students’ concentrations in classrooms of three types of elementary schools in order to verify the validity of the claims in the cited literature. The selected schools consisted of a privately funded Montessori school, a public Montessori school, and a publicly funded Montessori charter school. (See Chapter Three for more information about these selected schools.)

Conclusions drawn and presented in this chapter are the answers to the research questions. To increase the reliability of these answers, the literal findings from observations and interviews in Figure 12 (Appendix H) and the cited literature in Chapter Two on the effects of the above influences on concentration were compared against one another. This comparison, or triangulation, of findings from different data sources helped to draw meaning from what was learned from this study to answer the research questions. Answers, according to John Creswell (2014), must be supported by at least one other source of data to gain reliability because the perspectives of the researcher alone in a qualitative research are not enough to claim reliability for the answers to the research questions and conclusions. Norman Denzin (2009) thinks that triangulation of findings from data in a small qualitative study like this also boosts trust in the researcher’s conclusion among readers. He suggests that gaining the trust of the reader in the data and interpretations of findings in a qualitative study “…is always an issue for qualitative researchers” (p. 149); therefore, triangulation is the only means to boost reliability of the interpretive claims and conclusions in this paper. Therefore, in the triangulation process if the
findings from at least two of these sources agreed on the effects of any of the above influences, they were singled out and selected as more reliable answers in this chapter.

**Conclusions of Study**

The two questions that this study sought to answer were: “What influences in the classrooms of selected Montessori elementary schools in this study affect students’ concentration on learning?”, and “How do preparations for standardized tests in the selected Montessori elementary schools in this study affect students’ concentration on learning?”.

The answers to these questions can be straightforwardly and visually rendered by looking at Figure 12 in Appendix H, where the findings from observations, interviews, and the literature on the effects of the duality of objectives and Montessori affiliations in the classrooms of selected schools are displayed side by side. But, by summarizing the columns of Figure 12 and triangulating the findings contained in them, the following narrative emerges.

**Effects of Structural and Montessori Affiliation Features in Selected Schools**

The effects duality of objectives relating to structural and Montessori affiliation features on teachers’ practices were described earlier in Chapter Four. They were noted and highlighted not only in observation tools but in the transcripts of interviews, as well. During interviews teachers made explicit and implicit references to these effects on their students’ work. These references were highlighted in teachers’ quotes and are shown in Figure 12 (Appendix H) with results from observation and literature side by side. The much condensed results from the above triangulation in a narrative form is constructed as follows.

**Effects in School Amicus**

Triangulation suggests that the effects of the duality of objectives were most prominent in the non-Montessori accredited classrooms (School Noah) and were most limited in the AMI
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classroom (School Amicus), which is more demanding than AMS of the Montessori accreditations in terms of adherence to the original tenets of the Montessori method. The private School Amicus affiliated with AMI (Association Montessori Internationale) selected for this study was not completely free from the “duality of objectives” phenomenon due to its affiliation with the more hybridized AMS (American Montessori Society) system. This association is part of a trend described by Teacher Anne Zion: “AMS and AMI schools have started to make connections and try to be more of a united front rather than such a divided approach” (Question 1, Quote 5).

The reality of Anne Zion's teaching environment implies the effects of two different approaches to the Montessori application on her worldview--affiliation to AMI and AMS at the same time. It represents a duality of objectives in her practice and worldview due to her own credentials or perhaps her school’s affiliation to two separate Montessori organizations that are trying to come together as one and make the Montessori system of education work within the context of the traditional public school system.

In her interview, Anne Zion demonstrated the attributes sought at an adequate level for all questions except Question 5, about which of the core Montessori tenets she is consistently able to uphold in her classroom. She showed a keen knowledge of the tenets but conceded that there were times when “following the child” and “promoting independence and self-construction” was not possible due to curricular requirements. She stated: “I worry about certain curricular areas falling through… So, I do my lesson planning, and like I have what the biology lesson that every child should have in the cycle, and I have that planned out. And I can give them whenever, but with my need to get lessons out, there might be a child who’s really just getting settled in something, and I might come and say ‘I’m really sorry to interrupt but it would be great
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if you could come now”” (Question 5, Quote 2). This inability to adhere to the original core Montessori tenets can be attributed to the effects of the AMS affiliation, which demands more flexibility in the way the original Montessori curriculum is covered by each child. Another revealing quote from Anne Zion was the following: “Sure, you go first thing in the morning to the music room and spend a bunch of time there, but if I see after a couple days that you’re still not getting math done, we’re going to need to put a different system in place for you,” referencing a hypothetical conversation with a child (Question 5, Quote 5). In strict terms, this practice also goes against the core tenets of “following the child” and “promoting independence and self-construction.”

The private School Amicus classroom, led by Teacher Anne Zion, scored adequate (A) on 22 out of 35 influences of children, adults, objects, scenes, and events (CAOSE) as in-school factors on students’ concentration on learning (COL) observed. The types of concentration and engagement observed among the children working individually were almost exclusively of the preferred “Engaging & Finishing” and there were six instances of this type of concentration on learning (COL) in School Amicus compared to only one in School Amsdale and none in School Noah. Students working in groups were of Type 3: Playing, Noisy, Mobile, which means they were gathered around work that they had initiated and were debating on their own; they were mobile but not interfering with the work of other groups. None of the components of CAOSE that were affected by preparations for standardized tests (PST) were observed to influence children’s concentration on learning (COL) in the School Amicus classroom. Therefore, while the duality of objectives was detectable in the teacher’s stated practices regarding core Montessori tenets and may have been correlated with some of the inadequacies observed among
the classroom factors influenced by CAOSE, COL was successfully safeguarded in the School Amicus classroom, especially relative to the two other schools.

**Effects in School Amsdale**

School Amsdale demonstrated a much more noticeable effect of the duality of objectives. Marie Waz was found to have negligible (N) competence in her responses to two of the interview questions and was deficient (D) in the question on upholding the core Montessori tenets. Michille Shuftal was marked negligible (N) in all areas except for Montessori qualifications and teaching experience. The increased curricular expectations of AMS accreditation produced predictably disruptive effects on the tenets “following the child,” “promoting independence and self-construction,” and “safeguarding children’s concentration” in a manner similar to School Amicus, but on a more pervasive basis.

Notable at School Amsdale was the spread of these effects to other teacher competences, particularly drawing from Questions 6 and 7 concerning state-required testing and concentration on learning (COL), where both teachers were assessed to have negligible (N) competence. Marie Waz placed an outsized emphasis on reducing noisiness in the class and had created a system for dealing with the students identified as having trouble keeping quiet: “I remember from my past when I was learning and observing classrooms having assigned spots for those who needed to be isolated and work alone, I thought it was very wrong, but it is necessary. It is a tool that will help them. It is our job to help them understand that about themselves” (Question 6, Quote 1). The mention of her previous opinion on a practice like this is indicative of Marie Waz’s knowledge of the Montessori method, but her practice of isolating children is a clear contradiction of the prepared environment in Montessori education and was made necessary in her classroom due to
increased pressure to conform to outside measures of progress. It is not entirely surprising that the AMS system’s more formal preparations for standardized tests (PST) call for disruptions of self-guided learning, as described by Marie Waz: “In our environment we give them a mathematics lesson once or maybe twice a week, maybe for an hour each time, and some specific reading and writing instructions” (Question 7, Quote 2). She also described a proprietary reading assessment that is used to track progress towards traditional standards.

Observation data for School Amsdale is consistent with expectations for decreased adherence to orthodox Montessori methods. Marie Waz’s classroom was graded as adequate (A) on 10 out of 35 influences of children, adults, objects, scenes, and events (CAOSE) as in-school factors on students’ concentration on learning (COL) observed, with notable deficiencies in promoting independence, design of environment, and academic materials brought on both by in-school factors and preparations for standardized tests (PST). Observations on types of concentration and engagement among children found that most were working in groups rather than individually, and the groups were in the form of Type 3: Playing, Noisy. Mobile and Type 4: Not Playing, Noisy, Mobile, Disrupting, the latter of which is a less desirable group formation because they physically disrupt the work of other groups. In addition, in contrast to School Amicus, ten components of the classroom environment in School Amsdale were affected by preparations for standardized tests (PST) and thus had considerable influence on students’ concentration on learning (COL).

**Effects in School Noah**

The classrooms at School Noah experienced all the deficiencies in Montessori principles demonstrated by the other schools, with the addition of inadequacies in the areas of teacher
qualification and knowledge of the Montessori learning pillars. Kossie Callan was a qualified traditional teacher but did not have certification in AMI or AMS. This lack of training in her background was reflected in the absence of nearly all attributes sought by Question 7 – knowledge of child, importance of adult role, importance of materials, management of scenes, and management of events. Given that these terms have specific, technical definitions in Montessori education, it is not surprising that they were not demonstrated by Kossie Callan. Remarkably, Kossie Callan’s classroom performed slightly better in measures of students’ concentration on learning than Marie Waz’s class in School Amsdale as determined by the types of groups formed, specifically Type 1: Doing Groupwork, Not Noisy, Not Mobile. There were four instances of this type of group compared to no instances of this type in the other two schools. Students were quiet and not moving around; they seemed to be busy, which was interpreted as doing assigned groupwork. However, after interviewing the teacher, it seems likely that this behavior was due to the teacher’s attempt to coerce students to be quiet and work together on assigned groupwork rather than children’s choice to be quiet rather than noisy. On the other hand, Kossie Callan’s classroom demonstrated adequacy (A) in only 2 out of 35 observable influences of children, adults, objects, scenes, and events (CAOSE) as in-school factors on students’ concentration on learning (COL), and was also deficient (D) in allowing students free movement in different subject areas of the classroom that had been only negligible (N) for School Amsdale. In addition, in School Noah, 12 components of the classroom were affected by preparations for standardized tests H(PST) and thus, like School Amsdale, also had considerable influence on students’ concentration on learning (COL).
Overarching Effects of Dualities Experienced by All Participant Teachers

Below are the overarching effects that were experienced by all participant teachers in their day-to-day dealings and struggles in trying to function between the demands of two different systems in their schools. These overarching effects had to be identified due to the phenomenological nature of this inquiry. They are effects of the structural and affiliation features that were present in observed classrooms and in the responses of all participant teachers interviewed for this project, across all three selected schools. These effects were evidenced in handwritten fieldnotes, photos, video clips during observations in classrooms, and in teachers’ direct quotes during interviews.

The triangulated results from observations, interviews, and literature in Figure 12 (see Appendix H) reveal the effects of duality of objectives and Montessori affiliations on all 35 elements that relate to children, adults, objects, scenes, and events (CAOSE) in Table 1 (Appendix E). Ten items are highlighted in Figure 11 below because they were the effects that were observed to be experienced by all teachers across all three selected schools.

---

Figure 11

Overarching Effects of Dualities Experienced by All Participant Teachers

<table>
<thead>
<tr>
<th>Component of CAOSE</th>
<th>Influences of CAOSE on COL</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>Care of environment</td>
<td>2</td>
</tr>
<tr>
<td>Children</td>
<td>Care of self</td>
<td>3</td>
</tr>
<tr>
<td>Adults</td>
<td>Managing groupwork</td>
<td>15</td>
</tr>
<tr>
<td>Adults</td>
<td>Managing groups</td>
<td>16</td>
</tr>
</tbody>
</table>
Modifications Resulting from Dualities

These effects of dualities can be aggregated under three categories: modifications to teachers’ practices, modifications to Montessori curriculum, and modifications to Montessori materials. Although the latter two modifications are the byproducts of modifications in teachers’ practices and worldviews, it is necessary to mention them separately because in one of the schools (School Amicus), there were no modifications in curriculum and materials due to the influences of the duality of objectives or Montessori affiliations. This lack of influence was due to the teacher’s qualifications and competences that allowed her to seamlessly converge the different demands of their coexistence without compromising her students’ concentration on learning (COL) or modifying the authenticity of the Montessori curriculum and materials even though she was under the same obligations to meet state standards and assessment laws as the other teachers, albeit to a lesser degree. In other words, her own practices and attitudes were not modified by the pressures of preparing students for standardized testing. The above modifications to teacher’s practices and how they affected the Montessori curriculum and materials due to the effects of duality of objectives and Montessori affiliation features can be better explained by the following two examples: the absence of cosmic education and exercises for practical life (EPL). Results of observations show that cosmic education lessons were absent in the classrooms of the three selected schools. When the teacher in School Amicus was asked about the absence of cosmic education lessons in her classroom, her answer, “I feel like I can’t
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afford to give more music lessons, because we have a music specialist and they’re spending all afternoon in music and I have to get out all these other things” implies that the preparations for standardized tests (PST) takes time away from her schedule, making it difficult for her to do other types of work with students like more cosmic education (CE) lessons, which listening to music is a part of. In School Amsdale, which is affiliated with the American Montessori Society (AMS), cosmic education was replaced by exercises of the Pledge of Allegiance, which shows an AMS-affiliation effect on Marie Waz’s practice, resulting in modification of Montessori principles and materials. To replace cosmic education with the Pledge of Allegiance is a deviation from the vision of Maria Montessori, who considered the Montessori classroom a miniature global environment, not just an American or an Italian environment. Teachers’ perception of replacing cosmic education with the Pledge of Allegiance may have been that Montessori has to be adjusted to the context of popular culture in the U.S., forgetting that cosmic education was meant to give a global message of unity among people and the universe as a whole. Similarly, in School Noah the lessons of cosmic education were replaced by Griot or traditional African storytelling and reading. From the perspective of the teacher, who is African American, replacing cosmic education with traditional African storytelling (Griot) might have been the right thing to do since the majority of her students were Black, but there were also many non-Black students in the classroom, who could have benefitted from the intended outcomes of cosmic education. All three selected schools were, therefore, devoid of cosmic education in the ways intended to be exercised in a Montessori classroom: to connect the child to the rest of the world and to the universe as a whole. On cosmic education, the literature suggests that in an authentic Montessori setting, every school day should start with a lesson of cosmic education as
that is one of the cornerstones of the Montessori method. It is intended to give children some basic knowledge about the orderliness and preparedness of nature for life (geology in general), glaciers, climatology, and so on (Herbst et al., 2008). Dr. Montessori (1949) thought that “If we have a vision of the cosmic plan in which every form of life in the world is based on purposeful movements, having their purpose not in themselves alone, we shall be able to understand and to direct the children's work better” (p. 211).

Table 1 also shows that no exercises of practical life (EPL), which include lessons on care of self, care of environment, grace and courtesy, and control of movement, were observed in any of the selected schools. The findings from the interviews confirm this observation. The teacher in School Amicus stated, “And, you know, in our school we have the luxury of having testing practice be largely a practical life activity, we don’t have funding reliant on it, we don’t have ratings reliant on it. You know, we do have parents, and nobody wants to sit in front of a parent and have the child you were reassuring is doing so well, and then they’re average on the standardized test.” This means that the teacher in School Amicus was giving up EPL in order to do preparations for standardized tests (PST) and indeed was conflating EPL as a “practical life activity” with PST. This fusion of Montessori curriculum with PST was not noticeable during the observations, but during the interview the teacher explained that she knew the testing material so well that she did not need to take children away from their Montessori work in order to review the packet of materials with them; rather she blended PST into the regular curriculum, as needed, when appropriate, particularly familiarizing students with the use of technology (Chromebook) used for testing. The teacher in School Amsdale and School Noah did not know what EPL stood for. After an explanation was provided, the teacher from School Amsdale suggested that they
were in a temporary building and did not have the proper space for such activities. Teacher from School Noah made the point that she had cleaning duties at the end of each afternoon cycle for her students, suggesting she had confused students’ daily tasks with EPL, which are creative, well-planned activities for cognitive and motor skill development. The teacher’s lack of Montessori qualifications may have been the reason why she did not have EPL in her classroom. My study views EPL as a major influence on students’ concentration on learning (COL) and their work of self-construction in lower elementary classrooms due to the students’ age range (7-8) and level of development, as noted by Montessori (1984). They help children take care of themselves and beautify their environment (Montessori, 1984). EPL, Gettman (1987) suggests, can immediately begin to satisfy the young child’s inner need to be self-sufficient. He adds that “children conduct the practical life activities for the sake of working through the processes rather than for the sake of their results” (p. 39).

In short, both cosmic education and exercises of practical life (EPL) are important parts of the Montessori education, and to not have these activities in a Montessori environment indicates a modification of the Montessori curriculum and a deviation from Montessori core values.

Other Shared Themes

In addition to the above themes about the role of duality of objectives and Montessori affiliation features, two additional themes from the participating teachers’ direct quotes from the interviews. The first of these themes was that all teachers varied in their knowledge of Montessori theory and method. For example, regarding the pillars of Montessori education, including “following the child,” “promoting independence and self-construction,” and
“safeguarding students’ concentration on learning” (COL), two of the teachers (Anne Zion from School Amicus and Marie Waz from School Amsdale) thought that all pillars of Montessori education are important, but one teacher (Kossie Callan from School Noah) thought that the teacher is the one who decides for children what they need to learn rather than the child choosing what to work on, a finding that reflects the negative influence of having no qualifications in Montessori education.

Furthermore, all teachers had clear ideas about what positive and negative influences in their classroom environments are, but their responses also indicated various degrees of knowledge about Montessori theory on those issues. For Anne Zion, from School Amicus, cooperative learning is a positive influence, which reflects her knowledge of Montessori theory about the importance of cooperative learning in groups of mixed-age children. For Anne Zion, specialists taking children away from their Montessori work in order to prepare them for subject areas related to standardized testing or subjects that are outside of her schedule, is a negative influence, which implies her understanding of the negative influence of preparation for standardized tests (PST) or the duality of objectives. In Marie Waz’s classroom, from School Amsdale, the level of noise in the classroom is a negative influence in the classroom, which reflects her lack of understanding of the developmental stages of children in the lower elementary level. And in the case of Kossie Callan, from School Noah, freedom of choice and freedom of movement are negative influences in the classroom, which reflects her absence of knowledge about the fundamental tenets of Montessori education and her lack of qualifications in Montessori education, which lead her to fall back on traditional tools of discipline and methods of teaching.
Summary

To reflect on the overall nature of influences in each selected school type, a conclusion can reached that in the publicly funded charter Montessori school (i.e., School Noah), which is exposed to traditional curricular demands and had no Montessori affiliation requirements, the spread of influences on children’s concentration on learning (COL) was greater than in the other two schools. In School Amsdale, which is also exposed to traditional curricular demands but maintains affiliation with the AMS (American Montessori Society) system, there were marked effects of the duality of objectives and Montessori affiliation but to a lesser degree in comparison to School Noah. And because School Amicus does not use public money as its main source of funding and because it maintains affiliation with both AMI (Association Montessori Internationale) and the AMS systems, it harbored a present but negligible effect of the duality of objectives and the AMS system.

The dramatic differences between School Amicus and the other two schools in terms of observable influences of in-school factors (see Table 1) and the out-of-school factor (see Table 2) on students’ concentration on learning (COL) and on types of concentration and engagement (see Table 3), as well as teacher qualifications and competences (see Table 4) are evidence that School Amicus is serving its purpose of preserving the Montessori learning environment as originally intended. Figure 13 provides a visual picture of the findings from observations and interviews in each selected school separately and across all schools collectively. It tabulates the attributes that were interpreted as adequate (A), negligible (N), or deficient (D) for each of the selected schools: 39 As for School Amicus, compared to 23 As for School Amsdale and 7.5 As
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for School Noah. Similarly, there were 9 Ds for School Amicus, compared to 27.5 Ds for School Amsdale and 44.5 Ds for School Noah.

Figure 13

Visual Representation of Overall Findings from Observations and Interviews

<table>
<thead>
<tr>
<th>School</th>
<th>Data Type</th>
<th>Source</th>
<th>Interpretations of Influences</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>School-AMI</td>
<td>Observations</td>
<td>Table-1</td>
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<td>2</td>
</tr>
<tr>
<td>School-AMI</td>
<td>Observations</td>
<td>Table-2</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>School-AMI</td>
<td>Observations</td>
<td>Table-3</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>School-AMI</td>
<td>Interview</td>
<td>Table-4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>School-AMI TOTAL</td>
<td></td>
<td></td>
<td>39</td>
<td>13</td>
</tr>
<tr>
<td>School-AMS</td>
<td>Observations</td>
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<td>11</td>
<td>4.5</td>
</tr>
<tr>
<td>School-AMS</td>
<td>Observations</td>
<td>Table-2</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>School-AMS</td>
<td>Observations</td>
<td>Table-3</td>
<td>9/3</td>
<td>6/3</td>
</tr>
<tr>
<td>School-AMS</td>
<td>Interview</td>
<td>Table-4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>School-AMS TOTAL</td>
<td></td>
<td></td>
<td>23</td>
<td>13.5</td>
</tr>
<tr>
<td>School-NOA</td>
<td>Observations</td>
<td>Table-1</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>School-NOA</td>
<td>Observations</td>
<td>Table-2</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>School-NOA</td>
<td>Observations</td>
<td>Table-3</td>
<td>7/2</td>
<td>6/2</td>
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<tr>
<td>School-NOA</td>
<td>Interview</td>
<td>Table-4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>School-NOA TOTAL</td>
<td></td>
<td></td>
<td>7.5</td>
<td>10.5</td>
</tr>
</tbody>
</table>

The answer to the primary research question, “What influences in the classrooms of selected Montessori elementary schools in this study affect students’ concentration on learning (COL)?”, is summed up as follows: major influences were found to be the duality of objectives, affiliation features, and their effects on teachers’ practices, Montessori curriculum, and Montessori materials. Of the 35 qualities of the components of the classroom (children, adults, objects, scenes, events or CAOSE), 31 were found to be affected to varying degrees by these influences, all of which have observable effects on students’ COL, as evidenced by the assignment of As, Ns, and Ds across Table 1 (Appendix E), particularly in School Amsdale and School Noah, the two publicly-funded Montessori schools. Based on the findings of this study, it is clear that the duality of objectives present in the environments of the publicly funded
Montessori models leads to modifications of teachers’ practices and attitudes and modifications in Montessori principles, curriculum, and materials, compromising the authenticity of the intended Montessori method.

From observations the answer to the secondary research question, “How do preparations for standardized tests (PST) in the selected Montessori elementary schools in this study affect students’ concentration on learning (COL)?”, emerges as follows: Even though preparations for standardized tests (PST) were not administered to 1st and 2nd grade students during observations, PST with 3rd graders in the lower elementary classrooms were present and had observable residual effects on components of visited classrooms in the selected schools. The more notable of these effects were on independence, individual lessons, managing groupwork, observations of individual children, classroom management, and specialists’ work, for which a clear pattern of deficiency among the two non-AMI schools was observed. There were no qualities that were interpreted as Negligible (N) or Deficient (D) as a result of PST in School Amicus. PST influenced 13 out of 23 qualities of the components of the classroom (children, adults, objects, scenes, and events or CAOSE) in School Amsdale and School Noah (i.e., the two publicly-funded Montessori schools), all of which impacted students’ COL in observable ways, as evidenced by the assignment of As, Ns, and Ds shown across Table 2 (Appendix F).

The above results suggest that the two publicly funded Montessori schools are under more pressure to adhere to the state assessment requirements than the privately funded Montessori school. This finding is consistent with results from interviews with the teachers and is discussed again in Pre-triangulation Results from Interviews later in this chapter and in Chapter Five, when they are triangulated.
Limitations of the Study

This study is limited in scale to students in the lower elementary classrooms of three Montessori elementary schools. The days and timing of observations and interviews in these three schools were determined by the principals and teachers in these schools. Thus, those days may or may not have been representative of typical days at the subject schools. Furthermore, the results of the observation data are limited to the time, date, and the classrooms from which they originated. These results do not represent a long-term condition in any of the observed classrooms and cannot be generalized to include other classrooms in the same school or in other schools of the same type.

The study is further limited because the students with documented learning disabilities were also included among those whose concentration during individual work and groupwork were observed. The participating schools were not willing to share the information about such students with the researcher. The children observed could have been anywhere in the curve of their second stage of development during observations. These stages are defined by children’s levels of engagement in work and their levels of concentration related to those engagements.

Another limitation is that the findings from observations are based solely on the researcher’s interpretation of the data and does not include input from those who were observed, including the students and many adults who were not interviewed. Since permission was not obtained to interview or talk to the children, there was no way of knowing what they were working on and why. Representation of the observation results in Table 1 for instance, show that out of 35 qualities on that table, School Amicus was
marked as having As 22 times, School Amsdale 10 times, and School Noah with 2 As (adequate). These interpretations show only what was observed in the observed classrooms during a small window of time and do not apply to all schools or the system they represent categorically. They only represent the perspectives of the researchers and the particular teachers that participated in this very small qualitative inquiry. Therefore, the findings in this chapter provide no quantifiable measures that could corroborate the direct effects of concentration on learning. The findings also make no assertions on how or by how much students’ learning was affected as a result of the presence or absence of the influences recorded during observations in the classrooms.

One more important issue for discussion here is the major limitation that exists in the path of small studies such as this one to go to schools and conduct worthwhile research for academic purposes. Last year, it took a long time to secure just a few days of observation and data collection. Schools are very conservative with letting people come in and do research in their classrooms. A related issue is that the assumption of the theory behind the topic of this paper cannot be validated because the researcher did not have permission from the IRB to interview children or do small qualitative experiments with students from the selected schools.

**Possibilities for Future Research**

In the observations, the researcher followed the effects of children, adults, objects, scenes, and events (CAOSE) and preparations for standardized tests (PST) on students’ concentration on learning (COL) in aggregated ways. This study did not and could not follow any individual student or teacher recognized by name or any other type of identifier. The researcher did not know the children by their names and was not familiar with their facial
features and other distinctions that would have helped to follow them individually. Although group class pictures were provided for all but one of the classrooms visited, that did not help with recognition of children because the faces of children in those pictures were no bigger than the size of a thumbnail, which made it impossible to match them with students’ faces when needed. Children who were observed were identified by random letters based on what they were wearing on each day of observation. A recommendation for someone doing a similar study would be to spend more time on establishing a rapport with the school and the teachers in advance of actual data collection. That way, the researcher would have a chance to communicate their needs and have the right materials from the selected schools at their disposal during data collection, such as large photos of individual students and information about special need children.

Finally, to get permission to interview the children or do qualitative, non-experimental assessments with them, the researcher would need to start the process with the IRB much earlier, so that parental permission could be obtained. Without interviewing the children, it was impossible to know why they did not complete or stopped concentrating on their work. In addition, without performing experiments with the children, it was impossible to determine the effects of concentration on learning itself.

**Closing Statement**

In Montessori education the emphasis is on students’ liberties like the freedom of movement, freedom of choice, and freedom of voicing opinions and asking questions by the students. These fundamental freedoms of Montessori are not that different from the “Voice and Choice” movement that is being researched and promoted in the traditional education system.
presently. Combining the core values of universality and the freedoms that the two systems offer in the context of publicly funded Montessori schools is a promising phenomenon that, if applied as intended, would benefit children from the convergence of the best of the two systems.

The results of this study show that under the pressures of the duality of objectives, which is created as a result of combining the above two systems, teachers across all participating Montessori schools made different types of modifications to the Montessori academic materials and their own practices. Some teachers (i.e., the ones who were not fully qualified to navigate between the two systems) were observed to resort to restricting children’s choices of work, freedom of movement, and voices in expressing their needs, in order to contain children and/or be able to function between the two systems. Practices that could be construed as contrary to the two systems’ core values and the freedoms they intend to offer to students were described in this study. Observing these restrictions and their effects on students’ concentration during classroom observations and hearing about them in my interviews with some teachers reminded me of some of my childhood schooling experiences that I described in Chapter one. They reminded me of how painful it was for me to sit motionlessly and in silence for long hours every day listening to my teachers and memorize information for tests. The teachers did not and could not know that the entire time I pretended to be engaged in learning and paying attention, I was waiting for the bell to ring so I could run out of the classroom into the hallway so I could stretch or play a bit before the bell rang again. They did not know that I was thinking about other things like flying my kite and playing soccer with my friends in my neighborhood when I got home. The hope is that the results of this study and the experiences of my early life education, as described in Chapter One, will contribute to the understanding that teachers should not inhibit students’ freedoms of voice, movement, and choice of learning or use negative labels when they
make mistakes or do badly on tests. Otherwise, as Gandhi says “Freedom is not worth having if it does not include the freedom to make mistakes.” (Panday, 2013, p. 257)
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Confucius (Kǒng Fūzǐ or Master Kong), (Date: unknown) *The anaelects of Confucius, the travels of Fâ-Hien, the sorrows of Han*. Kindle Edition.


https://www.youtube.com/channel/UC88A5W9XyWx7WSwthd5ykhw
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Matos, N. I., & Andrew, S. W. Understanding the Core of Authentic Montessori.
Retrieved from: Google Scholar.


Retrieved from: https://scholar.google.com/scholar
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APPENDICES


APPENDIX B: Request for Research Approval: Not attached

APPENDIX C: Informed Consent Letters: Not attached
APPENDIX D: Semi-Structured Interview Questions

(See next page)
APPENDIX D

Semi-Structured Questions

1. Please tell me something about yourself and how you became interested in Montessori education?

2. How would you describe your job as a Montessori teacher?

3. How would you describe a Montessori classroom environment?

4. Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why?

5. Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold?

6. What influences in your classroom exert positive or negative effects on your students’ work and concentration?

7. How do you prepare your students for the various state-required tests without interrupting students’ concentration on their Montessori work?

8. What would you change to make your job easier and your students happier?

9. Is there anything else that you would like to share with me?
APPENDIX E: Classroom Observations of Influences of In-School Factors (CAOSE) on Students’ COL

(See next page)
### APPENDIX E

#### Classroom Observations of Influences of In-School Factors (CAOSE) on Students’ COL

<table>
<thead>
<tr>
<th>CAOSE</th>
<th>Influences</th>
<th>Predetermined Attributes and Fieldnotes</th>
<th>Analysis</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>Attitude</td>
<td>Grit, verbal and body language, following rules, respecting others</td>
<td>✔️ &gt; x &lt;</td>
<td>1</td>
</tr>
<tr>
<td>Child</td>
<td>Care of env.</td>
<td>Treatment of materials, plants, pet, other objects in class</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Child</td>
<td>Care of self</td>
<td>Cleanliness, clothes</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Child</td>
<td>Concentration +App. G</td>
<td>Source Appendix G, and hand-written notes on yellow sheets of paper</td>
<td>✔️ &gt; x &lt;</td>
<td>4</td>
</tr>
<tr>
<td>Child</td>
<td>Grace and courtesy</td>
<td>Treatment of friends, class rules, adults, appropriate language</td>
<td>✔️ &gt; x &lt;</td>
<td>5</td>
</tr>
<tr>
<td>Child</td>
<td>Independence</td>
<td>Asking for help, not asking for help</td>
<td>✔️ &gt; x &lt;</td>
<td>6</td>
</tr>
<tr>
<td>Child</td>
<td>Repetition</td>
<td>Finishing work</td>
<td>✔️ &gt; x &lt;</td>
<td>7</td>
</tr>
<tr>
<td>Adult(s)</td>
<td>Appearance</td>
<td>Enthusiastic, energetic, happy, sad, stern</td>
<td>✔️ &gt; x &lt;</td>
<td>8</td>
</tr>
<tr>
<td>Adult(s)</td>
<td>Attitude</td>
<td>Sarcasm, outlook, encouraging independence, verbal and body language, handling stress</td>
<td>✔️ &gt; x &lt;</td>
<td>9</td>
</tr>
<tr>
<td>Adult(s)</td>
<td>Attire</td>
<td>Tight, comfortable, noise from shoes</td>
<td>✔️ &gt; x &lt;</td>
<td>10</td>
</tr>
<tr>
<td>Adult(s)</td>
<td>Competence +App. D</td>
<td>Emo. intelligence, disciplining, relations, communication, observing, recordkeeping</td>
<td>✔️ &gt; x &lt;</td>
<td>11</td>
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<tr>
<td>Adult(s)</td>
<td>Handling EPL</td>
<td>Grace and courtesy, care for the environment, everyday chores</td>
<td>✔️ &gt; x &lt;</td>
<td>12</td>
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<tr>
<td>Adult(s)</td>
<td>Love of Children</td>
<td>Speaking tenderly, losing composure, getting angry</td>
<td>✔️ &gt; x &lt;</td>
<td>13</td>
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<tr>
<td>Adult(s)</td>
<td>Management Class</td>
<td>Safeguarding COL, reg. observations, disciplining, assistants’ doings, recordkeeping</td>
<td>✔️ &gt; x &lt;</td>
<td>14</td>
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<tr>
<td>Adult(s)</td>
<td>Managing GW</td>
<td>Assigning GW to work groups, Assigning Individual work to students while in the group</td>
<td>✔️ &gt; x &lt;</td>
<td>15</td>
</tr>
<tr>
<td>Adult(s)</td>
<td>Managing Groups</td>
<td>Managing Group Types</td>
<td>✔️ &gt; x &lt;</td>
<td>16</td>
</tr>
<tr>
<td>Adult(s)</td>
<td>Qualifications +App. D</td>
<td>General Education, Montessori certification, experience, worldview</td>
<td>✔️ &gt; x &lt;</td>
<td>17</td>
</tr>
<tr>
<td>Adult(s)</td>
<td>Respect for Children</td>
<td>Labeling, allowing students to ask questions, silencing students, interfering with COL</td>
<td>✔️ &gt; x &lt;</td>
<td>18</td>
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<tr>
<td>Objects</td>
<td>Env. Aesthetics</td>
<td>Art, plants, colors</td>
<td>✔️ &gt; x &lt;</td>
<td>19</td>
</tr>
<tr>
<td>Objects</td>
<td>Env. Comfort</td>
<td>Hot, cold, Natural light, Fresh Air</td>
<td>✔️ &gt; x &lt;</td>
<td>20</td>
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<tr>
<td>Objects</td>
<td>Env. Design</td>
<td>Size, layout, allows for free movement, area for observer, washrooms, lunch area, EPL</td>
<td>✔️ &gt; x &lt;</td>
<td>21</td>
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<tr>
<td>Objects</td>
<td>Env. Outdoors</td>
<td>Playground, gardening</td>
<td>✔️ &gt; x &lt;</td>
<td>22</td>
</tr>
<tr>
<td>Objects</td>
<td>EPL materials</td>
<td>Robust, types, creativity, minimum, non-existing</td>
<td>✔️ &gt; x &lt;</td>
<td>23</td>
</tr>
<tr>
<td>Objects</td>
<td>Furniture</td>
<td>Size, workmanship, state of repair, cleanliness</td>
<td>✔️ &gt; x &lt;</td>
<td>24</td>
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<tr>
<td>Objects</td>
<td>Material Academic</td>
<td>Completeness, Authenticity, Cleanliness, substitutions, modifications, topic, organization</td>
<td>✔️ &gt; x &lt;</td>
<td>25</td>
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<tr>
<td>Objects</td>
<td>Spaces</td>
<td>Socializing, quite time, reading, napping, storage, individual work, supplies, music, art</td>
<td>✔️ &gt; x &lt;</td>
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<tr>
<td>Scenes</td>
<td>EPL in Action</td>
<td>Control of Movement, Care of Self, Care of Environment, Grace and Courtesy</td>
<td>✔️ &gt; x &lt;</td>
<td>27</td>
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<tr>
<td>Scenes</td>
<td>GW Dynamics</td>
<td>Relations, Level of COL, Type of Work (individual, assigned), level of noise</td>
<td>✔️ &gt; x &lt;</td>
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<tr>
<td>Scenes</td>
<td>Snacking</td>
<td>Organization of snacking, Quality of snacks</td>
<td>✔️ &gt; x &lt;</td>
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<tr>
<td>Scenes</td>
<td>Other Adults’ Doings</td>
<td>School administrators, parents, volunteers, helpers and assistants</td>
<td>✔️ &gt; x &lt;</td>
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<td>Scenes</td>
<td>Handling of pet</td>
<td>Sharing, not sharing, treatment of it, effects of it</td>
<td>✔️ &gt; x &lt;</td>
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<td>Events</td>
<td>Cosmic Education</td>
<td>Frequent, some, none</td>
<td>✔️ &gt; x &lt;</td>
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<td>Events</td>
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<td>✔️ &gt; x &lt;</td>
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<td>Events</td>
<td>Lessons</td>
<td>Ind. Lessons, too long, too short, no lessons,</td>
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<td>34</td>
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<td>Events</td>
<td>Specialists’ Works</td>
<td>Frequent, some, none</td>
<td>✔️ &gt; x &lt;</td>
<td>35</td>
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Table 1

Observable Influences of CAOSE as In-School Factors on Students’ COL

<table>
<thead>
<tr>
<th>CAOSE</th>
<th>Influences of CAOSE on COL</th>
<th>School-AMI AZ’s Classroom</th>
<th>School-AMS MW’s Classroom</th>
<th>KO+MS Classrooms</th>
<th>School-NOA KC’s Classroom</th>
<th>MP’s Classroom</th>
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<tr>
<td>Child</td>
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<td>A</td>
<td>A</td>
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<tr>
<td>Child</td>
<td>Care of env.</td>
<td>A</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Child</td>
<td>Care of self</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Child</td>
<td>Concentration (in table 3)</td>
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<td>N</td>
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<tr>
<td>Child</td>
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<td>A</td>
<td>A</td>
<td>D</td>
<td>D</td>
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<tr>
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<td>Independence</td>
<td>A</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
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<td>A</td>
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<td>N</td>
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<td>Adult(s)</td>
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<td>A</td>
<td>A</td>
<td>D</td>
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<td>Competence (in Table 4)</td>
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<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
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<td>A</td>
<td>A</td>
<td>A</td>
<td>N</td>
<td>N</td>
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<td>D</td>
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<td>D</td>
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<td>D</td>
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<td>D</td>
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<td>D</td>
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<td>A</td>
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<td>D</td>
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<td>Objects</td>
<td>Material Academic</td>
<td>A</td>
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<td>Scenes</td>
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<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>Groupwork Dynamics</td>
<td>A</td>
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<td>D</td>
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<td>x</td>
<td>x</td>
<td>A</td>
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<td>Scenes</td>
<td>Other Adults’ Doings</td>
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<td>D</td>
<td>D</td>
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<td>D</td>
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<td>Scenes</td>
<td>Handling of pet</td>
<td>A</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<td>Events</td>
<td>Cosmic Education</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
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<td>Events</td>
<td>Cultural Presentation</td>
<td>D</td>
<td>D</td>
<td>A</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>Events</td>
<td>Lessons &amp; Observations</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
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<tr>
<td>Events</td>
<td>Specialist Work</td>
<td>A</td>
<td>D</td>
<td>A</td>
<td>D</td>
<td>N</td>
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</tbody>
</table>

Table 1 above represents an interpretation of the aggregated results in Rubric 1, which includes information from other DCTs in addition to the appendices, like handwritten notes, photos, and video files. For reasons of privacy and confidentiality of data, the photo and video
files cannot be provided as references in my interpretations. However, some of the handwritten fieldnotes have been included as references when needed. Table 1 displays the findings on the effects of CAOSE for each classroom and each selected school in such a way that makes the comparison of the results between classrooms and schools easy and visual.
APPENDIX F: Observable Influences of Preparations for Standardized Tests (PST) as an Out-of-School Factor on Students’ COL

(See next page)
### Observable Influences of Preparations for Standardized Tests (PST) as an Out-of-School Factor on Students’ COL

<table>
<thead>
<tr>
<th>Components of CAOSE</th>
<th>Influence of PST on CAOSE</th>
<th>Fieldnotes about Attributes</th>
<th>Analysis</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>Attitude (children’s)</td>
<td>Cooperation, verbal and body language, following rules, respect for others</td>
<td>✔️ &gt; * * &lt;</td>
<td>1</td>
</tr>
<tr>
<td>Children</td>
<td>Grace and courtesy</td>
<td>Treatment of friends and adults, class rules, type of language</td>
<td>✔️ &gt; * *</td>
<td>2</td>
</tr>
<tr>
<td>Children</td>
<td>Grit</td>
<td>Handling stress, initiating work, concentrating on work, finishing work</td>
<td>✔️ &gt; * *</td>
<td>3</td>
</tr>
<tr>
<td>Children</td>
<td>Independence</td>
<td>Asking for help, not asking for help</td>
<td>✔️ &gt; * *</td>
<td>4</td>
</tr>
<tr>
<td>Adults</td>
<td>Attitude (teacher’s)</td>
<td>Enthusiasm, happiness, opposing, agreeable</td>
<td>✔️ &gt; * *</td>
<td>5</td>
</tr>
<tr>
<td>Adults</td>
<td>Competence</td>
<td>Certification, Content knowledge of Montessori method</td>
<td>✔️ &gt; * *</td>
<td>6</td>
</tr>
<tr>
<td>Adults</td>
<td>Handling of EPL</td>
<td>Grace and courtesy, care for the environment, everyday chores, none</td>
<td>✔️ &gt; * *</td>
<td>7</td>
</tr>
<tr>
<td>Adults</td>
<td>Managing Groupwork</td>
<td>Assigning work to groups, to individual students in groups</td>
<td>✔️ &gt; * *</td>
<td>8</td>
</tr>
<tr>
<td>Adults</td>
<td>Observing Students</td>
<td>Observing other students’ work</td>
<td>✔️ &gt; * *</td>
<td>9</td>
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<tr>
<td>Adults</td>
<td>Record keeping</td>
<td>Effects on recording students’ progress when working with large groups.</td>
<td>✔️ &gt; * *</td>
<td>10</td>
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<tr>
<td>Objects</td>
<td>Academic Material</td>
<td>Completeness, Authenticity, substitutions, modifications, topical organization</td>
<td>✔️ &gt; * *</td>
<td>11</td>
</tr>
<tr>
<td>Objects</td>
<td>Limiting Spaces</td>
<td>Socializing, quite time, reading, napping, storage, individual work, supplies,</td>
<td>✔️ &gt; * *</td>
<td>12</td>
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<tr>
<td>Scenes</td>
<td>Comfort level in Env.</td>
<td>Restricts free movement</td>
<td>✔️ &gt; * *</td>
<td>13</td>
</tr>
<tr>
<td>Scenes</td>
<td>EPL in action</td>
<td>Control of Movement, Care of Self, Care of Environment, Grace and Courtesy</td>
<td>✔️ &gt; * *</td>
<td>14</td>
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<tr>
<td>Scenes</td>
<td>EPL work</td>
<td>Students time doing EPL work</td>
<td>✔️ &gt; * *</td>
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<tr>
<td>Scenes</td>
<td>GW dynamics</td>
<td>Relations, Level of COL, Type of Work (individual, assigned), level of noise</td>
<td>✔️ &gt; * *</td>
<td>16</td>
</tr>
<tr>
<td>Scenes</td>
<td>Respect for children</td>
<td>Manner of Speaking, composure, anger, frustration</td>
<td>✔️ &gt; * *</td>
<td>17</td>
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<tr>
<td>Scenes</td>
<td>Running of classroom</td>
<td>Conflict resolution, handling interruptions, disciplining</td>
<td>✔️ &gt; * *</td>
<td>18</td>
</tr>
<tr>
<td>Scenes</td>
<td>Work Outdoors</td>
<td>Takes time away from playground, gym gardening</td>
<td>✔️ &gt; * *</td>
<td>19</td>
</tr>
<tr>
<td>Events</td>
<td>Cosmic education</td>
<td>Frequency</td>
<td>✔️ &gt; * *</td>
<td>20</td>
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<td>Events</td>
<td>Cultural presentation</td>
<td>Frequency</td>
<td>✔️ &gt; * *</td>
<td>21</td>
</tr>
<tr>
<td>Events</td>
<td>Handling of pet</td>
<td>Time spent with the pet</td>
<td>✔️ &gt; * *</td>
<td>22</td>
</tr>
<tr>
<td>Events</td>
<td>Individual Lessons</td>
<td>become too long, too short, no lessons</td>
<td>✔️ &gt; * *</td>
<td>23</td>
</tr>
<tr>
<td>Events</td>
<td>Restricts other events</td>
<td>music, art, gym</td>
<td>✔️ &gt; * *</td>
<td>24</td>
</tr>
<tr>
<td>Events</td>
<td>Specialists’ work</td>
<td>Frequency</td>
<td>✔️ &gt; * *</td>
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</table>
## Table 2

**Observable Influences of Preparations for Standardized Tests (PST) as Out-of-School Factor on Students' COL**

<table>
<thead>
<tr>
<th>Components of CAOSE Affected By PST</th>
<th>School-AMI A N D</th>
<th>School-AMS A N D</th>
<th>School-NOA A N D</th>
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<td>Academic Material</td>
<td>☒ ☒ ☒</td>
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<td>D</td>
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<tr>
<td>Attitude (children’s)</td>
<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
<td>D</td>
<td>2</td>
</tr>
<tr>
<td>Attitude (teacher’s)</td>
<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
<td>D</td>
<td>3</td>
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<tr>
<td>Comfort Level in Environment</td>
<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
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<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
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</tr>
<tr>
<td>Cosmic education</td>
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<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
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</tr>
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<td>☒ ☒ ☒</td>
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<tr>
<td>EPL work</td>
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<td>☒ ☒ ☒</td>
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<tr>
<td>Grace and courtesy</td>
<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
<td>D</td>
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<tr>
<td>Grit</td>
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<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
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<td>Individual Lessons</td>
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<td>D</td>
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<tr>
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<tr>
<td>Specialists’ work</td>
<td>☒ ☒ ☒</td>
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<td>☒ ☒ ☒</td>
<td>☒ ☒ ☒</td>
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</table>
APPENDIX G: (Supplement to Students’ Concentration on Learning in Appendix E)

Classroom Observations of Students’ Concentration in Individual and Group Work

(See next page)
## APPENDIX G
(Supplement to Students’ Concentration on Learning in Appendix E)

Classroom Observations of Students’ Concentration in Individual and Group Work

<table>
<thead>
<tr>
<th>Date:</th>
<th>Classroom ID:</th>
<th>School ID:</th>
<th>Adult ID:</th>
</tr>
</thead>
</table>

### Types of Concentration and Engagement of Individual Students

- **Engaging & Finishing**: Engaging & Finishing (E&F)
- **Engaging But Not Finishing**: Engaging But Not Finishing (EBNF)
- **Not Engaging But Observing**: Not Engaging But Observing (NEBO)
- **Not Engaging Not Observing**: Not Engaging Not Observing (NENO)

### Types of Concentration and Engagement of Groups of Students

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<tr>
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<th>Type 4</th>
</tr>
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<td>Playing, Noisy Not Mobile</td>
<td>Playing, Noisy Mobile</td>
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<table>
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Observation of Students’ Concentration and Engagement in Individual and Group Work

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<td>Type 2</td>
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<td>Day 5</td>
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<td>Day 5</td>
<td>Afternoon</td>
<td>NENO</td>
<td>A</td>
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</table>
APPENDIX H: Analysis of Teachers’ Qualifications and Competences

Sought through Open-ended Interview Questions

(See next page)
Analysis of Teachers’ Qualifications and Competences
Sought Through Open-ended Interview Questions

<table>
<thead>
<tr>
<th>Questions</th>
<th>Fieldnotes about Attributes Sought in Questions</th>
<th>Analysis</th>
</tr>
</thead>
</table>
| Please tell me something about yourself and how you became interested in Montessori education? | Qualifications:  
  - Traditional Education  
  - Montessori AMI  
  - Montessori AMS  
  Job Experience | ✔ > ✗ < # 1 |
| How would you describe your job as a Montessori teacher?                  | Knowledge of Montessori Content:  
  - Knowledge of the Adult Role | 2 |
| How would you describe a Montessori classroom environment?                | Knowledge of Montessori Content:  
  - Knowing the Nature of the Montessori Environment: | 3 |
| Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why? | Knowledge of Montessori Method- Importance of CAOSE:  
  - Knowledge of Child  
  - Importance of Adult Role  
  - Importance of Materials  
  - Management of Scenes  
  - Management of Events | 4 |
| Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold? | Knowledge of Montessori Method- Importance of Tenets:  
  - Skills related to following the Child  
  - Skills related to promoting independence/self-construction  
  - Skills related to safeguarding children’s COL  
  - Skills related to upholding all at the same time. | 5 |
| What influences in your classroom exert positive or negative effects on your students’ work and concentration? | Competence: Knowledge of Montessori method  
  - Identifying in-school Factors  
  - Verdict on out-of-schl. Factors  
  - Management of Groupwork  
  - Management of EPL | 6 |
| How do you prepare your students for the various state-required tests without interrupting students’ concentration on their Montessori work? | Competence: Knowledge of Montessori Method:  
  - Skills in Doing PST  
  - Keeping COL while doing PST | 7 |
| What would you change to make your job easier and your students happier?   | Competence: Knowledge of in-school or out-of-school factors on COL:  
  - Creativity  
  - Desire to Improve things | 8 |
| Is there anything else that you would like to share with me?               | Competence: Knowledge of in-school or out-of-school Factors on COL:  
  - Openness to Change:  
  - Unexpected Influence 1  
  - Unexpected Influence 2 | 9 |
### Table 4

Results of Teachers’ Qualifications and Competences from Each Interviews

<table>
<thead>
<tr>
<th>Questions</th>
<th>Attributes Sought in Questions</th>
<th>School-AMI</th>
<th>School-AMS</th>
<th>School-NOA</th>
<th>Q#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please tell me something about yourself and how you became interested in Montessori education?</td>
<td>Traditional Education Montessori AMI Montessori AMS Job Experience in Montessori</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>N</td>
</tr>
<tr>
<td>Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why?</td>
<td>Knowledge of Child Importance of Adult Role Importance of Materials Management of Scenes Management of Events</td>
<td>A</td>
<td>A</td>
<td>N</td>
<td>D</td>
</tr>
<tr>
<td>Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold?</td>
<td>Skills related to following the Child Skills related to promoting independence/self-construction Skills related to safeguarding children’s COL Skills related to upholding all at the same time.</td>
<td>N</td>
<td>D</td>
<td>N</td>
<td>D</td>
</tr>
<tr>
<td>What influences in your classroom exert positive or negative effects on your students' work and concentration?</td>
<td>Identifying in-school factors View on out-of-school factors Management of groupwork Management of EPL</td>
<td>A</td>
<td>N</td>
<td>N</td>
<td>D</td>
</tr>
<tr>
<td>How do you prepare your students for the various state-required tests without interrupting students’ concentration on their Montessori work?</td>
<td>Skills in doing PST Keeping COL while doing PST</td>
<td>A</td>
<td>N</td>
<td>N</td>
<td>D</td>
</tr>
</tbody>
</table>
Figure 10 shows the responses of the three main teachers I interviewed (i.e., one representative from each school) to questions #1, 4, 5, 6, and 7. The reason I chose these questions is that they cover the most important points from the interviews, and they also include answers to the other questions that are not included in Figure 10 but are included in each participant’s interview rubric (Rubric 4). To prepare the data in transcripts for analysis, I highlighted all the attributes teachers used in their responses to describe their qualifications and competences that were sought through the interview questions and aggregated in each teacher’s rubric (Rubric 4) for analysis (refer to section Analyzing and Dispersing Interview Data for more information on how the interview results were processed). In Figure 10, I have highlighted some direct quotes and marked parts of some others in red to show the effects of PST, structural features, and other features (i.e., AMI and AMS affiliations) of participating schools in teachers’ answers. Those areas are used in the Conclusions section of Chapter 5. The interpretations of qualifications and competences, which are represented by A (Adequate), N (Negligible/Null), and D (Deficient), are literal and non-triangulated, at this stage. They are my understanding of what the direct selected quotes from teachers’ transcripts stated.

**Figure 10**

*Interpretations of Teachers Responses on the Effects of their Competences*

<table>
<thead>
<tr>
<th>Question</th>
<th>Question 1- Please tell me something about yourself and how you became interested in Montessori education?</th>
<th>Interpretation</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>This question is seeking information about qualifications:</strong></th>
<th><strong>Teacher AZ</strong></th>
<th><strong>Teacher MW</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Education</td>
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<td>Traditional Education</td>
</tr>
<tr>
<td>Montessori AMI Certification</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Montessori AMS Certification</td>
<td>✔</td>
<td>Montessori AMI</td>
</tr>
<tr>
<td>Job Experience</td>
<td>22 years</td>
<td>Montessori AMS</td>
</tr>
</tbody>
</table>

### Qualification: A

#### Teacher AZ

**School-AMI**

1. “I went to college at xxxxx and I was an art history major.”

2. “…I had a teaching degree from xxxxx college.”

3. “This school sponsored me to do my AMS training, so I did that, and I worked there for 7 years. Then I took some time off to be home with my young children.”

4. “And then, in that training process for AMS, I had observed at xxxxx and was really impressed. So, when I was looking for a job, this was a place that I was interested in. I started working as an assistant and kind of worked my way up. This school is an AMI affiliated school, so then I took the AMI training, sponsored by the school.”

5. “AMS and AMI schools have started to make connections and try to be more of a united front rather than such a divided approach.”

#### Qualification: A

- **Traditional Education**
- ✔ Montessori AMI
- ✔ Montessori AMS
- ✔ Job Experience: 22 years

**AZ’s attributes used in her response parallel all the attributes sought in this question. AZ’s narrative suggests that she is a qualified and prepared Montessori adult.**

### Qualification: A

#### Teacher MW

**School-AMS**

1. “I became interested in Montessori education because of my own children. They were Montessori educated. That was an amazing experience for them and for us as parents”

2. “So, What I loved was learning about Montessori theory and Montessori’s ideas of how children learn and how is best to spark that joy of learning inside children and in their hearts.”

3. “I have a traditional graduate licensure program certificate for one through 8th grade DPI”

4. “Almost all teachers have traditional licenses but it's impossible to find somebody that has both the traditional certificate and Montessori training at the same time”

5. “I started observing a classroom in a local Montessori school in town and discovered that that was the kind of environment I wanted to work in. And I decided to join the Montessori workforce. It convinced me that the traditional setting did not suit me well.”

6. “After I was hired by the Montessori school I decided to go and get my AMS Montessori certificate from the University of xxxxx”

#### Qualification: A

- **Traditional Education**
- ✔ Montessori AMI
- ✔ Montessori AMS
- ✔ Job Experience: 6 years

**MW’s attributes used in her response parallel all the attributes sought in this question except for AMI certification. MW’s narrative suggests that she is a qualified and prepared Montessori adult.**
7- “When I was working at xxxxx Montessori school which was a private school it did not feel right because it was private separate and elite alright should say exclusive because I have strong feelings about Montessori being available for everybody. So, the idea of working for a Montessori school was very appealing. I feel happy about a lot of schools being public Montessori school.”

1- “My mother chose to educate me in the Montessori method. So, I, myself, am a Montessori educated person.”

2- “Then, when I had children I chose to educate them in the Montessori method because of what I felt it did for me. It really gave me a lot of power as a young black child in a majority white environment to set my own destiny in a way. Now that my youngest child is in traditional school, I'm really seeing … why I feel drawn to Montessori: because it's self-directed, because it respects the child, because I have as much work to do as the guide or the teacher as the child does, so those are the things that works for me. I wanted to give that experience to more children, and especially black children, because Montessori has been a very white space and I think that it has a lot to offer for children of color who have been done a disservice by the educational system. So that's what drew me to be becoming a Montessori educator.”

Teacher KC
School-NOA

Were you born and raised in MN?
Yes, born and raised in Minneapolis, MN

Qualification: N
> Traditional Education
★ Montessori AMI
★ Montessori AMS
✔ Job Experience?

Teacher KC has credentials in traditional method of teaching. The attributes used in her response with regards to her Montessori qualifications do not parallel the attributes sought in this question. KC’s narrative suggests that she is a qualified traditional teacher but not a prepared Montessori adult.

Common themes in Responses: 1) All teachers have traditional teaching licenses. Teachers were drawn to Montessori by what the Montessori method offered to their own children. 2) All teachers had encounters with Montessori education. Two teachers, one from School-AMI and one from School-AMS, felt the need to get their certifications in Montessori method; however, teacher KC from School-NOA did not pursue formal Montessori certification even though she was educated in a Montessori school as a child. 3) All three teachers indicate that they think Montessori education ought to be available to everyone.

Question 4 - Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why?

This question seeks information on:
**Knowledge of Montessori Method & Importance of CAOSE:**
- Knowledge of Child
- Importance of Adult Role
- Importance of Objects/Materials/Physical Environment
- Management of Scenes
- Management of Events

<table>
<thead>
<tr>
<th>Competences: A</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ Knowledge of Montessori Method-Importance of CAOSE</td>
</tr>
<tr>
<td>✔ Knowledge of Child</td>
</tr>
<tr>
<td>&lt;Importance of Adult Role &gt;Importance of Materials</td>
</tr>
<tr>
<td>✔ Management of Scenes</td>
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<td>✔ Management of Events</td>
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</tbody>
</table>

Teacher AZ

School-AMI

1- “I wrote a note that I thought that was a trick question because you cannot just remove one.”

2- “So, I dodged the question a little bit by putting them in order. So, the first, most important one was the child. Without the child you don't have a classroom.”

3- “…So the child, and then next would be the adult, and then third would be the environment. Forth, the materials. Materials are important, but if I were working in an extremely disadvantaged community and couldn't afford Nienhuis materials, could I still have a Montessori classroom? I believe you really could.”

4- “When preparing children for some of the standardized testing, do you think you need to modify some of the materials that you have on the Montessori side of this school?”

   “That's a great question. I do not think about modifying materials. I think what I might do is to help the child make a conscious connection (AMS affiliation effects).”

5- “Maybe they are really good with the golden beads and can make numbers with the number of cards and correspond them. But they have not thought about what that looks like on paper or with expanded notation. Or even sometimes on the standardized test they will draw base 10 blocks that look very much like these materials. But for some children you need to say: when you see this picture, they are representing this material. And just do that tiny step to help them make a leap.”

4- “Some children even at this lower elementary age still stay pretty concrete in some ways and might understand the algorithm of what happens when you exchange and carry. But if you do not help bring that connection to consciousness, that leap to paper might be more difficult. Which, in the standardized testing, by definition, you must reduce it to that two dimensional experience.

   So, would you say that for children who were raised as Montessori children from the beginning, making the leap would be more of an issue?

   I was thinking because your question is about standardized testing preparation. So, when I know children are going to be asked a question about odd and even numbers, and they have experienced it but maybe
they have not done it just on paper (AMS affiliation effects). So, I think children who come from non-Montessori environments and join ours, I might do something similar if they know how to add on paper. I might show them what it looks like with the beads just so they had that conception for when we do later activities."

5- “I think what I realized over the years is that in children's house, children have this absorbent mind and they just learn because they exist in the environment and they are constructing themselves. And they come into elementary, and that absorbent mind is fading away. And some of them, especially coming from Montessori environments, need some specific language around what learning looks like now. It is not enough just to sit with these cards in front of you and move them around. You need to engage with it, think about it, and ask about it.” (AMS affiliation effects)

6- “Some children make that transition without any kind of conversation. But I think that is a significant point of growth for children. Especially coming from within our Montessori environments. If they have had this other way of learning to rely on, and now it is different, you need to kind of move it to your head (i.e., from sensorial to the head)” (AMS affiliation effects).

7- “We talk about how is it that you make this work your own. I have shown you what to do, you could repeat it, mimic what I do, but you are not learning anything unless you ask questions, make connections. All those higher level thinking skills.”

8- “If you think about it traditional kindergarten, there is a lot of telling about your learning, and what you are learning, and how you are learning it. Which we do not have for children. Because we do not believe that is how the brain works.”

| Competences: A | ✔ Knowledge of Montessori Method | ✔ Importance of CAOSE | ✔ Knowledge of Child | ✔ Importance of Adult Role | ✔ Management of Materials | ✔ Management of Scenes | ✔ Management of Events |

Teacher MW
School-AMS

1- “I would say they are all equally important. And the reason is because if any one of them is not functioning in a way that contributes to the whole structure working, it's not going to work.”

2- “If the environment is not well prepared, then the child cannot be independent.”

3- “Similarly, if the adult is not able to observe willingness or inspire excitement to learn, then that won't work for children either.”

4- “If the materials are not prepared well for children to work independently and that won't work very well either.”

5- “So, if something is not working well in the environment then you have a lot of figuring out to do. Is it you? Does the child have a need that has not been met somehow? Or if there is something that you can do with the environment to change it? Or is there something with the
relationships that need to be fixed? What is it that you have a gap in the materials? Maybe it is the material that you have prepared that is not challenging enough or it might be too difficult for children? So, they’re all important.”

<table>
<thead>
<tr>
<th>Teacher KC</th>
<th>School-NOA</th>
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</thead>
<tbody>
<tr>
<td>1- “Definitely following the child. The idea that the child is at the center of what I am observing. I am observing the child to figure out what the child needs. I will never give a child something to do just randomly.”</td>
<td></td>
</tr>
<tr>
<td>2- “It's all about observing, or talking to, having one-to-ones even in small groups. But getting to know the children, to know this person needs to work on their basic facts (structural feature’s effect), but this other person has their basic facts so they I can do this other math activity with them.”</td>
<td></td>
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<tr>
<td>3- “Oh, I am presenting a new idea, I am observing to see who's grasping it and who's not getting it. Who do I need to keep with me longer, who needs a reteach, who needs to go ahead and go because they have it, and now I am holding you back but by making you stay here with me? That is the most important thing to me. So, these are mental records you keep. Which child is performing? (structural feature’s effect)”</td>
<td></td>
</tr>
<tr>
<td>4- “And do you prepare individual lessons for each child? Not so much individual lessons, more so writing down or keeping track of when I am presenting a lesson to a small group. Who's getting it (structural feature’s effect), who's not(structural feature’s effect), who's fighting to do their independent work(structural feature’s effect), and who will need to reteach, who should I do independent work with, and who can I give them something to do (structural feature’s effect) and they'll go and then show me their work later (structural feature’s effect).”</td>
<td></td>
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<tr>
<td>5- “And then I have like these notes where I keep track of who's had what lesson, who mastered what concepts, who doesn't still know how to read, who needs to be getting one-on-one literacy support. So, when you</td>
<td></td>
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qualified and prepared Montessori adult.

Main Point
Teacher MW thinks that all the above pillars in the question are important. And the reason why she thinks they’re all important is because she believes that anyone of the pillars not working well will make the whole system to not work well. As an adult, you have the responsibility to find out why one of the pillars is not working well.

Competences: D
✔ Knowledge of Montessori Method
✔ Importance of CAOSE
✔ Knowledge of Child
✔ Importance of Adult Role
✔ Importance of Materials
✔ Management of Scenes
✔ Management of Events

KC’s attributes used in her response do not correspond to the attributes sought in this question. Her narrative suggests that she is a qualified traditional and not a well-prepared Montessori adult. Most of the attributes Teacher KC has used to respond to the different parts of the question are affected by structural features of the School-NOA and have no relevance to Montessori method. School-NOA is not affiliated with any Montessori Accreditation Institutions like AMI and AMS. It is only KC who
**Question 5-** Which of these core Montessori tenets: “following the child,” “promoting independence/self-construction,” and “safeguarding children’s concentration” are you able to consistently uphold?

<table>
<thead>
<tr>
<th>Question Response</th>
<th>Interpretation</th>
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<tbody>
<tr>
<td>This question seeks information on Knowledge of Montessori Tenets: Following the Child Promoting Independence/Self-construction Safeguarding Children’s COL Upholding all at the same time</td>
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</tbody>
</table>

**Teacher AZ School-AMI**

1- “That was another great question for reflection. As I thought about my reality in the classroom, I think I'm pretty conscious about promoting independence and self-construction, so I have a lot of conversations with children about how it is your brain works (AMS affiliation effects), about the MAP Growth mindset (AMS affiliation effects), about their responsibilities, about the fact that I can’t make you learn. I tell them you need to do that (AMI affiliation effects). I think safeguarding the children's concentration is something I do the least well (AMS affiliation effects) in some ways.”

2- “I worry about certain curricular areas falling through (AMS affiliation effects) and (PST effects)… So, I do my lesson planning, and like I have what the biology lesson that every child should have in the cycle (PST effects), and I have that planned out. And I can give them whenever, but with my need to get lesson out, there might be a child who's really just getting settled in something, and I might come and say...”

**Competences:**
- Knowledge of Montessori Method: ✔ Importance of Tenets
  - <Skills related to following the child>
  - <Skills related to promoting independence/self-construction>
  - ✔ Skills related to safeguarding children’s COL
  - <Skills related to upholding all at the same time>
“I'm really sorry to interrupt but it would be great if you could come now.” (AMS affiliation effects) and (PST effects) Like if you always sit back and just wait, like how I heard in my training simply that “you’ll just gather the children.” I can just only gather the children who aren’t working! (AMS affiliation effects) & (PST effects) You know, like sometimes those children who are working need lessons too.”

3- “So I think that of those 3, that's the hardest one for me to feel like I'm doing well (AMS affiliation effects). And certainly I feel like there's a lot of freedom, like when I give a lesson, there is usually not something specific required, it's just “What are some things you could do that you are interested in,” “What's a question you have,” and not everything needs a follow up. Like I know if you do not internalize the parts of a flower by the time you leave my classroom, that's going to be OK. And so, I think I have a pretty good perspective on those things that are required by our society, and those things which are just more really interesting structures or explorations that children could take. So there is some freedom about some of those things, but I think that's one way that the other two elementary teachers and I are different. I think there's a wide variety in how we do that. I think xxxxx is a lot less about agendas and more about following the child, and there are pros and cons to that, and there are pros and cons to what I do.”

4- “So the con of what I do is that this really genuine follow-the-child idea happens, but I think in more confined ways. And it might be in my head about what an ideal Montessori environment is. But you are balancing all of these things and children who don't use their time well, and the parents, and society, and what I feel like I need to do to feel like I've prepared you well for what I know you need to do. So then when we talk about safeguarding children's concentration, I think there are ways in which I work really hard to foster a classroom environment where children know that their social connections can be made through work, so they have a lot of flexibility about who they sit with and what they're choosing and in what order. And I try really hard to not have the kind of classroom where you can't go do music or art until you've done your math.”

5- “On the other hand, math does need to happen; it's part of what we do in the world. So always playing with that balance, and maybe it's sure, you go first thing in the morning to the music room and spend a bunch of time there, but if I see after a couple days that you're still not getting math done, we're going to need to put a different system in place for you.”

Q: That's based mostly on your observation of individual child? So you're exposed to all the elements of the environment equally by the end of the year? Maybe everybody gets a little work on math, and a little bit of geography or geometry?

6- “Yes, because what’s the saying, “follow the child but not off the cliff?” You know, that’s why I’m here -- I’m that little buffer. I'm really glad you're excited about your sculpture of a pigeon and we need to talk

Main Point
She likes promoting independence but does not do well with following the child, as required by the Montessori method. At the end of the day she thinks children need to be ready to understand what they're learning and make the leap from sensorial understanding of facts to understanding them when they are on a piece of paper. If she follows the child and realizes that a child is not spending her time being productive, then she perceives that the child is not spending their time the way she thinks they should. Therefore, she thinks she can interrupt the child’s work to have them work on what she thinks they should be working on. That is a PST effect on the adult’s decision to interrupt the child.

In contrast to following the child (which is a foundational principle in Montessori education), AZ wants to make sure that the benefit comes to them from all the other knowledge that she makes available in the classroom.
**Teacher MW**

**School-AMS**

1- “I would say it changes from day to day and year to year, classroom to classroom. I would say the most difficult one to do is purely following the child. When I first started, I had all kinds of big ideas, very pure Montessori ideas about children about the guides and how we follow them, and we should not be too prescriptive on what they need to learn and when. I have to say that my understanding of that has matured a little bit. My role is more about promoting independence and self-construction. And I mean I am really a guide for them.”

2- “But following the child does not mean that the child will learn everything about their favorite football team even though they are deeply passionate about it. My role is to help them develop passion in many other areas in the classroom. So, for me following the child means help him with their independence but spark enough excitement so they believe in themselves that they can start saying oh I can do this.”

3- “So I am not individualizing completely the lessons that they're getting for what they are working on. I am the teacher and have other responsibilities.”

**Competences: D**

- Knowledge of Montessori Method- ✔️ Importance of Tenets
- <Skills related to following the Child>
- <Skills related to promoting independence/self-construction>
- <Skills related to safeguarding children’s COL>
- <Skills related to upholding all at the same time.>

**Main Point:**
Instead of following the child, a foundational principle in Montessori education, MW wants to make sure that she covers the material that she thinks is the knowledge that they need to have. MW does not prepare individualized lessons, which means that she does not observe individual children as to where they are in their development.

---

**Teacher KC**

**School-NOA**

1- “Following the child is again one of the ones that I use a lot. I try to keep that at the center of my planning. Even just planning week by week, I have an idea of where I want to go. But where we were last week will determine where we are this week. If I just plan my whole year, then where's the room for me to follow the children?”

2- “Like we were at recess and somebody found a leaf. They brought it in: “What's this, what kind of leaf is this?” Okay, I am going to pull out the leaf posters. I'm not going to tell you I didn't plan to do leaves today. So, I pulled out the leaf poster. We figured out it's a maple leaf. We were like: “Oh, could we do maple syrup? Is that possible in the city?” So now we are looking up urban maple syrup tapping. Or now we are taking a nature walk and looking around, trying to figure out which tree

**Competences: D**

- Knowledge of Montessori Method- ✔️ Importance of Tenets:
- <Skills related to following the Child>
- <Skills related to promoting independence/self-construction>
- <Skills related to safeguarding children’s COL>
is a maple tree. So, following the children. Letting them know that they mean so much to me that they told me they were interested in this. I went to the library and got them a book because they wanted to know about this. And I was like, let’s go look it up. That, to me, will also show I want them to carry that right. And like, if I want to know something, I can find out. I do not have to wait for somebody to show me it; I can find it out. That is really huge for me.”

**Main Point:**
KC has taken one child’s interest and created a lesson around for all the children in the class.

### Common theme in Responses:
All three teachers attach importance to what they think the class ought to learn as a group. All participant teachers’ desire to make sure that their children as a whole group are “ready” originate from different structural and affiliation reasons and the obligations that they are under from the state’s standards and assessment laws.

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
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| Q6: Would you tell me what influences in your classroom exert positive or negative effects on your students’ work and concentration as you try to uphold the above tenets? | **Interpretation**
This question seeks information on Competence: Knowledge of Montessori Method Identifying In-school Factors View on Out-of-school Factors Management of Groupwork Management of EPL |

<table>
<thead>
<tr>
<th>Teacher AZ</th>
<th>School-AMI</th>
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</thead>
</table>
| 1- “So, I was thinking that having this three year cycle and building a class culture is a really important and positive influence. Because as you work to have this expectation about quality of work, or just what working looks and sounds like, that those returning students can help build on that from year to year. I had also written that returning students can have a positive influence. At this very moment I'm feeling like well not so much 'cause this has been a little bit of a rough week, but in general, I certainly think I overall do a really good job of modeling what I call “friendliness with error.” Like, if you don't ever try something new, if you don't ever risk making a mistake, you're really going to limit yourself in terms of what you can learn. So I think new students come in being worried about being right or wanting to not make mistakes.”

2- “And so I think a really positive influence that the returning students can have is, like, I had a new student who was actually in tears because he had to fix some words that were spelled wrong in a sentence he wrote, and another child was in line to ask me how to spell things, and I said “Well, look at this child, he probably made 15 errors!” and the kid’s like “Oh yeah, I just fix them, it's no big deal.” So, that kind of culture. So those are some positive influences. In terms of a negative effect, or something that has a negative impact is children's skills, you know. | **Competences:**
A

**Competence:**
- ✔ Knowledge of Montessori Method
- ✔ Identifying In-school Factors
- ✔ Knowledge of Out-of-school Factors
- <Management of Groupwork
- ✗Management of EPL

**Main Point:**
AZ values having children for 3 years because of the positive effect of older children on younger children. She counts on the pleasant, cooperative
Often more than half of my youngest children aren't yet reading and aren't yet writing when they come into this classroom. And my training says, “They'll know all their math facts before they come up, so you just jump into these other things,” and that's not actually the reality. And then that creates such a wide gap between those returning students who have gotten those things and the new students, who in some ways are pretty helpless. Like, it’s hard to be independent if you can't read the board yourself, and you need to rely on others.”

4- “Right, and they can’t participate the way they see other children participate. And the other side of that coin is that it does give the returning students this chance to offer the gift of their knowledge. But, you know, you can’t just keep doing for and doing for. We need those children. So, I can only imagine that if I had most of my new children coming, who can pretty much read and can pretty much write and have a handle on their math facts, there’s just so much more flexibility we might have about things we could do. There’s just so much energy that goes into bringing them along, and not having those returning students race too far ahead because it’s really important to me that we have a class of different ages authentically work together. And so of course many lessons can be modified, like “Say the first part of this word and your work partner will finish.” Even though it’s still not exactly the same.”

Q: So, would you say that children who are not coming from a Montessori background would have a higher need for energy and time?

5- “So usually when I have children coming from non-Montessori environments, that might be 2 or 3 per year. And then I have 25 children who are from a Montessori environment. So there’s a lot of really good modeling and I don’t find that it’s a challenge to help bring those children up to speed. And often, children who find their way here, it might be because in their other environments their needs were not being met because they were asked to stay at the same pace as everyone else -- either too slow or too fast for them. So, often those children can feel so comfortable in an environment once they understand that they have some agency.”

I commented: I saw younger children tagging along in groups of older children and that is amazing.

6- “And at the beginning those are assigned relationships, you know, that are negotiated. And then that just becomes inherent in what we do. And if someone comes to you for help you have 2 choices: you can say, “Yes, I will help you!” or you can say, “I’m sorry but I can’t help you right now, but let me find someone who can.” That’s every child’s responsibility in our class and we talk about that a lot. And the other thing, I think, that has a negative effect on work and concentration, is our schedule. For example on Tuesday afternoons, half of the class leaves for an hour to go to art. And then they switch. So really, it just changes what the possibilities are for children. “Oh but I really wanted learning culture in the classroom to take the hand of the newcomers to a place where they learn from the older children. She has created a positive attitude making mistakes; they are not viewed as a set-back. Instead, they are an opportunity for older children to help the younger ones. On the other hand, when newcomers come in with minimal skills in language and math, even though that is an opportunity for the older children to teach the younger ones, it takes time away for other activities that she wants to plan for the children as a whole. AZ believes that the culture of cooperative learning in the classroom can help children to normalize even if they come from backgrounds where they did not have the chance to work at their own pace. What has a negative effect on COL in her classroom is the scheduling of specialists during the cycles of the day. It causes children to leave their work in order to join and take lessons from the specialists. I asked the teacher whether she had any control over the scheduling of the specialists and how many children have to leave their work and go for lessons with the specialists and she said no. She thinks that is a negative effect on children’s work and concentration and on her daily schedule.
to work on my report!” “But you’re in art.” Or, “I had planted seeds with this group and I was gonna look at them,” but now 2 of those children are in art. So it just feels a little bit like time filler activity, like yes, there are things we can do that waste our time. But those days where there isn’t any of that to have to work around, I just feel like those days offer so much more to the children.”

Q: So that determination that, like, these numbers of children that are [can’t hear], that determination is not made ...

7- “Yeah so for those specialists, like we’ve had art specialists in the past who would just take 5 or 6 children at a time. So similar to the way that I would teach, and that was a lot easier to work with. Our current art specialist really likes to work with 15 students at a time.”

Q: [can’t hear]... and they can come in whenever and some of the kids as you mentioned are busy doing their work that they started yesterday during the last cycle of their work. And these specialists are, I’m assuming, connected to the preparation of the tests issue, right?

8- “No, because this is art, French, music, P.E. So there’s nothing related to testing at all.”

Table:

<table>
<thead>
<tr>
<th>Competences: N</th>
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<tbody>
<tr>
<td>✔ Competence: Knowledge of Montessori Method</td>
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<tr>
<td>✔ Identifying In-school Factors</td>
</tr>
<tr>
<td>&lt;Verdict on Out-of-school Factors</td>
</tr>
<tr>
<td>&lt;Management of Groupwork</td>
</tr>
<tr>
<td>★ Management of EPL</td>
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</table>

Main Point:
For MW, the negative effect in her classroom is the level of noise and the fact that children do not have an understanding of the discipline that is required to work together. She thinks that the noise disrupts other children’s COL. She thinks having a corner where loud children can be isolated is necessary to reduce the level of noise and thus increase the level of concentration.

Teacher MW
School-AMS

1- “I would say over the years we have worked really hard to help the children develop awareness of their actions and their voice levels and their choices on other people. So if there isn’t a sense of understanding about how important it is that they use quiet voice levels, although I know that they’re excited and they speak loud, but that is a real problem. And for some children it is very hard for them not to interrupt and blurt out and not get excited and want to jump up and show you something that they’re doing and you’re in the middle of a lesson. That is hard. Those things take time and for some children it takes longer. But to have standards and hold on to those standards is really important. I remember from my past when I was learning and observing classrooms having assigned spots for those who needed to be isolated and work alone, I thought it was very wrong, but it is necessary. It is a tool that will help them. It is our job to help them understand that about themselves.”

At this point the teacher takes me to a corner of the room where children had written in their own words rules that they needed to follow on artsy cards and had displayed them for others to see.
Teacher KC
School-NOA

1- “To be honest, when we're really strict about their movement, that has a positive effect on their productivity and their concentration. So, one of the ideas in Montessori is that you are free to move. But that is also one of the things that negatively effects their productivity and their concentration. People are getting up in the middle of whatever and just going somewhere else. So, when we say you cannot move for the next 20 minutes, you have to stay at this spot and do this thing. Now, that doesn't mean I didn't let you pick. So, I gave you five minutes to walk around and pick what you're going to do and get all your stuff. Okay, but now you’re not going stop. Five minutes in, you're not going to change. No, you’re going to stay here and you're going do it. So, like forcing them to be still is literally having a positive effect on getting an actual piece of work done. Or completing a task with a material you have to do certain things with. Doing what you need to do the entire time, then cleaning up and putting it back. I think, to be honest, being a bit restrictive and strict about movement can have a positive effect on productivity. Sometimes the freedom to move and choose has a negative effect on their concentration because they’re already scattered. You’re six or seven years old, so I don't know why I thought you could concentrate all morning anyway.”

I comment: “Ok so freedom of movement is one of the negative influences, what would be the next one?”

2- “The freedom to choose. As an adult, you regulate yourself. I've picked this and now I have to do this until I'm done. As a child, they get bored and want to pick something else. So, how do I teach them that balance? Yes, you do have the freedom to choose, but now that you've chosen, you have to stick with this for 20 minutes and finish it. So, they go both ways. Of course, you can concentrate more when it's your choice. I always tell them: if you don't, I think I'm going to pick for you. And they are like: No, I want to. So, when they pick, it gives them that agency to concentrate because they picked it. But then the pull of the movement comes, that other work I wanted to do. She picked that, I wanted to do that, too. It is like the saying: The same thing you love is the same thing you hate. Freedom to move, freedom to choose, freedom to repeat: these are Montessori basics. But it would also drive me crazy. Sit down, be still, pick something. You are wandering everywhere, okay you are repeating it. I know you have the freedom to repeat it, you have done it 30 times. I need you to do the next one. But, that is the beauty, that is the rub.”

Competences: D
✔ Competence: Knowledge of Montessori Method
<Identifying In-school Factors
<Verdict on Out-of-school Factors
<Management of Groupwork
Management of EPL

Main Point:
KC believes that freedom of movement and freedom of choice are basic tenets of the Montessori method, but at the same time, they are sources of frustration for her because she is not able to have children sit still for periods of time in order for her to go through her daily lesson schedule. She also likes to make the choice of activity for children if they don’t have an idea as to what to work on as quickly as she would like them to make that choice. She sets time frames for children to not move and not get out of groupwork. She is against children repeating their activities.

Common theme in Responses: No common theme in teachers’ responses. For differences, see the above Results.

<table>
<thead>
<tr>
<th>Question 7</th>
<th>How do you prepare your students for the various state-required tests without interrupting students’ concentration on their Montessori work?</th>
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</table>

Interpretation
This question seeks information on Competence:
Knowledge of Montessori Method
Practices of PST
Keeping COL while doing PST

<table>
<thead>
<tr>
<th>Q: So when you say specialists and this other part of the curriculum, are you referring to the curriculum that you have to add on top of what you have in order to prepare the children for the standardized testing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, I am just talking about the plain old Montessori curriculum.</td>
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<table>
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<tr>
<th>Q: But you have to do some work in that area to make sure that they’re getting that, so maybe that’s in your thoughts?</th>
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</thead>
<tbody>
<tr>
<td>1. “Like an example is that all children get many opportunities to read, but in the standardized tests there are specific questions about a main idea and inference, and if you’ve never exposed a child to any of those terms, it’s not really fair to ask them to put that frame on only during a standardized test.”</td>
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</table>

<table>
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<tr>
<th>So do you get a packet of material that you have to use?</th>
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<tbody>
<tr>
<td>2. “We don’t, no, not at all. So with this MAP assessment test that we administer, just to our oldest children, there are reams of documentation on the kinds of things that are expected. And to be honest, I think we hardly look at that at all. But those MAP test questions as I understand it are based on Minnesota state standards in different areas. And over the years I’ve become familiar with the kinds of things they are. So those are in the back of your mind, or just knowing that setting and character development are terms that people use. And if you move to another educational environment, even though those aren’t album lessons that I have, I make sure that children have exposure to those things at one point or another.”</td>
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<table>
<thead>
<tr>
<th>Q: Do your children do well on the standardized tests?</th>
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<tbody>
<tr>
<td>3. “Yes, because as I tell the children, their results on the MAP tests say as much about me as they do about them. And so there’s a section on the MAP test where they’re expected to know decimals, and if I don’t ever give decimal lessons until the end of the third year, then I’m to blame. That’s on me, that’s not on the child.”</td>
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<table>
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<tr>
<th>Q: So if you see the need that one child is not really getting exposure to the area of math that will prepare them for the MAP test, and if the child is busy doing something unrelated to the MAP test, and they’re concentrating on something else, how would you approach that child in that particular situation?</th>
</tr>
</thead>
</table>
| Competences: A ✔

- Competence: Knowledge of Montessori Method:
  >Skills in doing PST
  >Keeping COL while doing PST

Main Point:
AZ does not use the packet of material that they get for standardized tests. Instead, she says that she prepares her students by incorporating test preparations into her Montessori album. She says that she does not use the materials because she is familiar with them and knows what to work on to get the children ready for standardized tests. AZ is concerned with how her children do on standardized tests because if they don’t do well, it reflects badly on her. Having children for 3 years relieves the pressure on her to pull the children out of their activities to prepare them for standardized tests. Because they don’t test 1st and 2nd graders, AZ has the luxury of indirectly preparing these students over time for testing in their 3rd year. She does few lessons with individual children; most of her work is with small groups showing them how to use features of Chromebook, to practice using them so they can be
4- “So I think I would take a long view, so again I have the benefit of having children for 3 years, and we have the luxury of only testing the child in their 3rd year. So I am doing things when children are 1st and 2nd years that are indirect preparation in terms of language or exposure. So if you’re super excited about this diorama you’re building I’m not going to say stop because we need to talk about this MAP testing thing. But I might say “So last week you spent a lot of the week on that experiment and that took up a lot of your time, and this week there’s this diorama project, but next week I’m letting you know now that we’re going to spend some time on these other things. It’s really important to me that you feel confident when we do it.” So there’s very little immediate preparation, like right now. It does usually happen much more organically, like over the years.”

5- “Almost all of my lessons are small group lessons. There’s individual coaching that children might get. The only time that I pull just one group for testing is when I’m introducing the practice tests on the Chromebook (the physical device), because I want them to understand what that software is. Like, when you see a button at the top, you can tap it and see what tool is available to you. Like here’s a calculator tool. Here’s how it works. You can practice, here’s how you drag the ruler. Here’s how you use the highlighter if you want to remember a word. So there are some tools that I think are absolutely reasonable to give the children some experience with, because they’re the same ones that other children taking the test can access, so our children should have the same abilities. So, I just introduce it and then they explore those practice tests as little or as much as they want.”

Q: So, if they have spent more time on a certain area like math, does the test score that they get at the end of the year reflect that?

6- “Yeah I would think that they do. I mean, occasionally there’s a child who does much better than you imagined that they would, and sometimes there’s a child who does not do well at all. And then we see the test as a little red flag for us, if a child doesn’t do well. Let’s think about why. I had a child who was just incredibly literal, and so she would read the questions and she could find a reason why every answer might be correct, and didn’t have any practice with that skill of, “What’s the most likely answer?” And so that’s something that once we had this first data point, I could talk to her family about and we could work with her, with the idea that hopefully next year she would do better. And, you know, in our school we have the luxury of having testing practice be largely a practical life activity, we don’t have funding reliant on it, we don’t have ratings reliant on it. You know, we do have parents, and nobody wants to sit in front of a parent and have the child you were reassuring is doing so well, and then they’re average on the standardized test.”

7- “So I think all those underlying skills about knowing who you are as a learner, being open to new experiences — all of those things are part of our Montessori curriculum which I think are important test-taking skills ready for when they are tested. AZ says that she prepares her students for standardized testing in a gradual fashion, but it’s a source of concern if the child does not do well and that has to be explained to the parents.”
as well. And, that ability to feel curious and interested are important parts too.”

Teacher MW
School-AMS

1- “In our school we don't have a model to dictate to us what to do to prepare 3rd grade students for standardized tests. But they still get those standardized tests. It's remarkable how well they do consider that we don't prepare them that much for those tests.”

2- “In a traditional environment they will be getting every single day an hour to an hour and 15 minutes of mathematics instructions, English language arts (ELA) on either reading or writing or both. They will be getting very little science, geography, and very little of other things. In our environment we give them a mathematics lesson once or maybe twice a week, maybe for an hour each time, and some specific reading and writing instructions. But they are very infrequent and the work that they are doing in the meantime is self-directed.”

3- “It's amazing how well they do consider that we don't design every day to move them closer to the performance on the tests.”

Q: So, does that mean that they don’t create the agenda for preparing students for the test for you?

4- “No we have a reading assessment that's called DRA (Developmental Reading Assessment). But it's very authentic and we like it and we chose it for that reason.”

5- “We also have some books that help us assess the students’ reading of the subject.”

6- “But there are some parts of Montessori method that are underdeveloped for today's world (AMS effect). Like there's almost nothing on writing and components of writing for the elementary years so we have to bring that in very thoughtfully and show that they are within our setting.”

7- “So for instance our 3rd graders have learned as 1st and 2nd graders how to write a paragraph with a cohesive structure. In their 3rd year we are helping them to turn that into an essay so that the essay has a theme. For example, the work that we're going to do this week has a theme and we want to make sure that that theme fits into the Montessori materials because children enjoy Montessori materials and the way they connect to the world.”

Teacher KC
School-NOA

1- “I will be honest; I have not done a good job of preparing my students for the state required test. I am guilty of thinking that what works for me will work for everyone. I was this Montessori child who happily plugged away doing my work, and then when they would say “OK you're going to take a test today,” I would say “oh OK.” I would take the test; I would go home. You know, it was no big deal to me. Unfortunately, the stakes are much higher for my students. I went to a private Montessori school,
where the tests were because we wanted to. I went to a private Montessori school, Children's House, through 8th grade. For my students, the stakes are much higher. You have to take a comprehensive assessment starting in 3rd grade that puts you on par with every other student in the state. That is how they will judge you. They will not judge my babies by the beautiful Native American projects that we have on the walls, they will judge them by how they do on the test. So, what I'm doing now working from the standards as opposed to working from this Montessori ideals.”

Q: So, you have a general idea of where they need to be based on these spreadsheets?

2-“Yes so now I have a specific idea. I have the 3rd grade standards and I plan all of our lessons off of that. Then for the 3rd graders themselves, I have additional work on the reading and math standards that I'm having them do. It's just worksheets, packets, it's direct instruction in things. In Montessori, you kind of will just let it flow, and it will come. But now I'm like, I need to make sure that you know your place value, your numbers up to 100,000, whatever it is. I have a whole grid on the computer, planning lessons, using the benchmarks to make sure the lessons are geared toward the standards. Even independent work. I'm creating, not Montessori work, but work that's independent that they can do that will also carry them closer to the standards. I'm using the 3rd grade standards because they are the first people to be tested. For 1st and 2nd graders, the standards are the same but a level down. For instance, 3rd grade you have to know place value up 100,000. Second grade, it's only 100, but it's not going to hurt them to learn it early. Those who can learn it early, good. I do have 1st graders that are working on 3rd grade standards. That is another beauty of the multi ages, like if you can work up, work up. Some children work really well by showing other children what to do. To have that younger child that you can show something to, there are a lot of opportunities. My main thing is the idea of the Montessori work cycle: you choose work, you do it for a sustained period of time. That works just fine for a standardized test: this is your work and you need to be able to sustain it. The thing that we want to do more of is, because everything's on the computer now, and with Montessori everything is very tactile especially at this level. So we're still very concrete and tactile, and so even not having a pencil and paper to do something, but you have to click it and drag it. We need to have them prepping on the computer so that they are not sitting down for the first time to take the test. We have a computer lab we are about to start because we have another internal test that we do. So, we're about to start that process.

Main Point:
KC says she understands the importance of Montessori work and the freedom of choice, yet it’s clear from her responses that she stays close to the demands of the state standards or performance on standardized tests. She introduces her students to computer systems to help them become familiar with the processes involved in taking tests.

Common theme in Responses: The common theme is that the teachers all prepare their students for standardized tests and help them become familiar with computer systems that are used in testing.
**Figure 12**

*Influences of the Adults Relating to their Qualifications and Competencies*

<table>
<thead>
<tr>
<th>Teacher AZ in School-AMI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conclusions from Observed Influences in AZ’s Classroom Related to her Competencies</strong></td>
</tr>
<tr>
<td>From Table 1</td>
</tr>
<tr>
<td><strong>Student Concentration:</strong> N (aligns with attributes in question 5)</td>
</tr>
<tr>
<td>Item #4 in Table 1 was interpreted as N (Negligible) in AZ’s classroom with the most A, (Adequate) results. It is based on students’ individual COL and group behavior as observed during my observations in AZ’s classroom.</td>
</tr>
<tr>
<td><strong>Independence:</strong> A (aligns with attributes in question 5)</td>
</tr>
<tr>
<td>Item #6 in Table 1 is interpreted as A in AZ’s classroom. During my observations in AZ’s classroom, my DCT’s did not record any children seeking help from their teacher for anything.</td>
</tr>
<tr>
<td><strong>Adult Competencies:</strong> A</td>
</tr>
<tr>
<td>Item #11 in Table 1, which has been interpreted as A in AZ’s classroom in School-AMI</td>
</tr>
<tr>
<td><strong>EPL:</strong> D</td>
</tr>
<tr>
<td>From Table 4</td>
</tr>
<tr>
<td><strong>Question 1</strong></td>
</tr>
<tr>
<td>Please tell me something about yourself and how you became interested in Montessori education? Qualifications: A</td>
</tr>
<tr>
<td>The attributes AZ used in her response to the above question, described her qualifications as follows:</td>
</tr>
<tr>
<td>&gt;Traditional Education</td>
</tr>
<tr>
<td>✔ Montessori AMI</td>
</tr>
<tr>
<td>✔ Montessori AMS</td>
</tr>
<tr>
<td>✔ Job Experience: 22</td>
</tr>
<tr>
<td><strong>Question 4</strong></td>
</tr>
<tr>
<td>Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why? Competencies: A</td>
</tr>
<tr>
<td>The attributes AZ used in her response to the above question, described her competences as follows:</td>
</tr>
<tr>
<td>✔ Knowledge of Montessori Method- Importance of CAOSE.</td>
</tr>
<tr>
<td>✔ Knowledge of Child.</td>
</tr>
<tr>
<td>&lt;Importance of Adult Role.</td>
</tr>
<tr>
<td>&gt;Importance of Materials.</td>
</tr>
<tr>
<td>✔ Management of Scenes.</td>
</tr>
<tr>
<td>✔ Management of Events.</td>
</tr>
<tr>
<td><strong>Question 5</strong></td>
</tr>
<tr>
<td>Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold?</td>
</tr>
</tbody>
</table>

**On Concentration**

Researchers who built on Vygotsky’s ideas coined the term “scaffolding” to describe those activities that an educator or a more experienced peer provides as a learner moves through the ZPD. Wood, Bruner, and Ross (1976) defined scaffolding as a process “that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts” (p. 90). For Wood et al., scaffolding requires “controlling those elements of the task that are initially beyond the learner’s capability, thus permitting him to concentrate upon and complete only those elements that are within his range of competence” (p. 90).

**On Teacher Qualification and Competence**

On the issue of teacher qualifications, Esther Quintero (2014), a senior fellow at Albert Shanker Institute, suggests that to improve conditions for students in the classroom is to improve the quality of teachers’ human and social capital, an objective that Albert Shanker himself wanted to achieve by starting the charter school movement in 1988.
Items #23 and #27 show influences that are related to the exercises of practical life (EPL) and the materials associated with it. Both rows contain ✗ for all classrooms in all schools, which reflects a lack of EPL and EPL materials in those classrooms.

Managing Groupwork: A Dynamics were interpreted as being aligned with principles of grace and courtesy.

Cosmic Education: D Item #32 in Table 1 was interpreted as ✗ across all classrooms due to its absence during my scheduled observations in the schools. The absence of a daily cosmic education was a significant Montessori element that was missing from all the classrooms in all the schools that I visited.

Cultural Presentations: D Item #33 was not observed in School-AMI as a separate activity.

Presenting Lessons: D Item #34 was interpreted as D in all classrooms of each school, indicating that during the observations, there were not very many individualized Montessori lessons presented with Montessori materials that were presented to individual students. There were scenes of adults working with groups, but they did not resemble a typical Montessori lesson, where the adult presents the lesson with Montessori materials and the children observe.

Specialist Work: A Item #35 was interpreted as A in School-AMI, which indicates that several specialists for language, music, and art came to the

Competencies: N The attributes AZ used in her response to the above question, described her competences as follows:

✔ Knowledge of Montessori Method
✔ Identifying In-school Factors
✔ Knowledge of Out-of-school Factors
✔ Management of Groupwork
✗ Management of EPL

Question 6 Would you tell me what influences in your classroom exert positive or negative effects on your students’ work and concentration as you try to uphold the above tenets?

Competencies: A The attributes AZ used in her response to the above question, described her competences as follows:

✔ Competence: Knowledge of Montessori Method:
  > Skills in doing PST
  > Keeping COL while doing PST

Sample Quote Implying Duality of Objective: “AMS and AMI schools have started to make connections and try to be more of a united front rather than such a divided approach.” (Question 1, Quote 5)

Conclusion: The above quote implies the effects of two different approaches to Montessori application on her worldview (affiliation to AMI and AMS at the same time). It represents a duality of objective in her practice and worldview due to her own credentials or perhaps her school’s affiliation to two separate Montessori organization that are trying to come together as one and make the Montessori system of education work in the context of American culture.

Sample Quote Implying Duality of Objective: “We talk about how is it that you make this work your own. I have shown you what to do, you could repeat it, mimic what I do, but you are not learning anything unless you ask Shanker wanted charter schools to empower teachers, help the profession of teaching, improve student achievement, and to be a support to traditional public schools. Since then, most charter schools have distanced themselves from Shanker’s idea. Instead, the charter movement has become a hot topic among investors and private money managers with commercial motives (Ravitch, 2013).

On EPL EPL are practical activities carried out in the Children’s House (classroom) that are performed daily in order to maintain and restore proper conditions in the environment. As mentioned before, EPL are important and therefore, Montessori (1984) gives EPL a permanent place in children’s work of self-construction and COL. The different areas of practical life include preliminary activities, care of self, care of the environment, grace and courtesy lessons, and control of movement. EPL help children to be part of taking care of themselves and beautifying their environment (Montessori, 1984). EPL, Gettman (1987) suggests, can immediately begin to satisfy the young child’s inner need to be self-sufficient. He adds that “children conduct the practical life activities for the sake of working through the processes rather than for the sake of their results” (p. 39). In other words, they are interested in mastering their manipulative skills more than anything else. My study views the qualities associated with teachers’ handling of groupwork and EPL as major influences on students’ COL and their work of self-construction in the lower elementary classrooms of my selected schools due to the students’ age range (7-8) and level of development.
CONCENTRATION: A PATHWAY TO LEARNING

From Table 2
No recorded effects.

From Table 3
The results from this table supplemented Adult(s) Competences in Rubric 4. Table 3 demonstrates that in AZ’s classroom in School-AMI, there were individual students working and concentrating on their own. In addition, the frequency of Type 2 and 3 groups was higher in relation to Type 4 groups. There were two instances when I observed Type 4 groups forming and dissipating, but the behavior of the group members was different than Type 4 group in the other schools. Although Type 4 groups at School-AMI were noisy and moving around, they were not disturbing the work of other groups, as Type 4 groups were doing in classrooms in the other two schools.

From Handwritten Fieldnotes:
These notes supplemented results in all the Data Analysis Tools (Rubrics 1, 2, 3, and 4). See examples of these notes in Figure 9B in Chapter Four.

On Cosmic Education Item #32 in Table 1, was interpreted as across all classrooms due to its absence during my scheduled observations in the schools. In the true Montessori setting, every day starts with a practice of cosmic education as that is one of the cornerstones of the Montessori method. It is intended to give children some basic knowledge about the orderliness and preparedness of nature for life (geology in general), glaciers, climatology, and so on (Herbst, Gruber-Fuchs, & Herbst, 2008, p. 220). Dr. Maria Montessori (1949) said that “If we have a vision of the cosmic plan in which every form of life in the world is based on purposeful movements, having their purpose not in themselves alone, we shall be able to understand and to direct the children’s work better” (p. 211).

On Prepared Environment
In an authentic Montessori classroom, the adults’ competencies (or preparedness of the adult) include practices like exercises of practical life (EPL), cosmic education lessons, cultural lessons, lessons of grace and courtesy, and presenting age-appropriate individual and group lessons (i.e., within the zone of proximal development with Montessori materials). These lessons must be within the zone of proximal development (ZPD) of each child because that is where learning takes place. But, to find out where a child is in the ZPD, the child must be observed in all of his or her four stages of development (Vygotsky, 1978).
Main research question:
What influences in the classrooms of selected Montessori elementary schools in this study affect students’ concentration on learning?

All influences and qualities marked as A (Adequate), N (Negligible) and D (Deficient) in the above columns constitute the positive and negative influences on students’ concentration in the classroom I observed in School-AMI.

Secondary Question:
How do the preparations for standardized tests in the selected public Montessori elementary schools in this study affect students’ concentration on learning?

In AZ’s classroom, there were no effects of PST on 1st and 2nd graders, as evidenced by the grading sign ✗, indicating the absence of the influences they corresponded to. The PST with 3rd graders in the lower elementary classrooms, however, had some effect on some components of the CAOSE. Those effects were marked as Negligible (N) or Deficient (D). (See Table 2 in Appendix F.)

### Teacher MW in School-AMS

<table>
<thead>
<tr>
<th>Conclusions from Observed Influences in MW’s Classroom Related to her Competencies</th>
<th>Conclusions from Attributes in MW’s Interview Transcript Related to her Competencies</th>
<th>Literature Assertions on Themes of the Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Table 1</td>
<td>From Table 4</td>
<td>On Concentration</td>
</tr>
<tr>
<td>Independence: D</td>
<td>Question 1</td>
<td>Researchers who built on Vygotsky’s ideas coined the term “scaffolding” to describe those activities that an educator or a more experienced peer provides as a learner moves through the ZPD. Wood, Bruner, and Ross (1976) defined scaffolding as a process “that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts” (p. 90). For Wood et al., scaffolding requires “controlling those elements of the task that are initially beyond the learner’s capability, thus permitting him to concentrate upon and complete only those elements</td>
</tr>
<tr>
<td>Item #6 in Table 1 is interpreted as D. During my observations in MW’s classroom, my DCT’s recorded children seeking help from their teacher for various reasons including academic, discipline, and moral support issues. The reason might have been that in School-AMS there were too many adults in the classrooms helping and correcting children’s work, implying that children perhaps did not have the opportunity to benefit from the self-correcting nature of Montessori materials and to discover their own mistakes. This dependency of students receiving help from adults may also be due to the fact that assignments were given to students that may not have been the work that they chose on their own or work that they were familiar with.</td>
<td>Please tell me something about yourself and how you became interested in Montessori education?</td>
<td>&gt;Traditional Education</td>
</tr>
<tr>
<td>Adult Competencies: N</td>
<td>Qualifications: A</td>
<td>✗ Montessori AMI</td>
</tr>
<tr>
<td></td>
<td>The attributes MW used in her response to the above question, described her qualifications as follows:</td>
<td>✔ Montessori AMS</td>
</tr>
<tr>
<td></td>
<td>&gt;Traditional Education</td>
<td>✔ Job Experience: 6</td>
</tr>
<tr>
<td></td>
<td>✗ Montessori AMI</td>
<td>Question 4</td>
</tr>
<tr>
<td></td>
<td>Question 4</td>
<td>Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why?</td>
</tr>
</tbody>
</table>
Item #11 on the Table 1 has been interpreted as N in MW’s classroom due to the results from Rubric 3 showing many Type 4 groups in her classroom.

EPL: D
Items #23 and #27 show influences that are related to the exercises of practical life (EPL) and the materials associated with it. Both rows contain ✓ for all classrooms in all schools, which reflects lack of EPL and EPL materials in those classrooms.

Academic Materials: D
Item #25, as I commented earlier, was compromised due to the administration of standardized tests, which originates from duality of objective in publicly-funded Montessori schools and is founded in traditional curriculum. Materials for traditional education were shelved next to Montessori materials in School-AMS, which not only affected the sequence of Montessori materials, but also compromised the authenticity and the intention of the Montessori method behind the materials.

Managing Groupwork: D
Item #28 in Table 1 was interpreted as D in MW’s classroom because there was a level of intensity that implied students’ lack of grace and courtesy among their group members.

Cosmic education: D
Item #32 in Table 1 was interpreted as ✓ across all classrooms due to its absence during my scheduled observations in the schools. This was a significant Montessori element that was missing from all the classrooms in all the schools that I visited.

Cultural presentations: D
Item #33 shows one assistant teacher being consistent with the Pledge of Allegiance first thing in the morning. Although this does not qualify as a Montessori cultural presentation (i.e., was not worldly in nature), but in the context of the American traditional education, it holds a place of cultural significance in some schools. In School-NOA, the cultural lesson was manifested in stories by black authors and writers during circle time.

Lessons: D
Item #34, corresponding with Lessons, was interpreted as D in all classrooms of each school, indicating that during the observations, there

Competencies: A
The attributes MW used in her response to the above question, described her competencies as follows:

✔ Knowledge of Montessori Method
✔ Importance of CAOSE
✔ Knowledge of Child
> Importance of Adult Role
✗ Importance of Materials
✔ Management of Scenes
✔ Management of Events

Question 5
Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold?

Competencies: N
The attributes MW used in her response to the above question, described her competencies as follows:

✔ Knowledge of Montessori Method
✔ Importance of Tenets
< Skills related to following the Child
< Skills related to promoting independence/self-construction
< Skills related to safeguarding children’s COL
< Skills related to upholding all at the same time.

Question 6
Would you tell me what influences in your classroom exert positive or negative effects on your students’ work and concentration as you try to uphold the above tenets?

Competencies: N
The attributes MW used in her response to the above question, described her competencies as follows:

✔ Competence: Knowledge of Montessori Method
✔ Identifying In-school Factors
< Verdict on Out-of-school Factors
< Management of Groupwork
✗ Management of EPL

Question 7
How do you prepare your students for the various state-required tests without interrupting students’ concentration on their Montessori work?

that are within his range of competence” (p. 90).

On Teacher Qualification and Competence
On the issue of teacher qualifications, Esther Quintero (2014), a senior fellow at Albert Shanker Institute, suggests that to improve conditions for students in the classroom is to improve the quality of teachers’ human and social capital, an objective that Albert Shanker himself wanted to achieve by starting the charter school movement in 1988. Shanker wanted charter schools to empower teachers, help the profession of teaching, improve student achievement, and to be a support to traditional public schools. Since then, most charter schools have distanced themselves from Shanker’s idea. Instead, the charter movement has become a hot topic among investors and private money managers with commercial motives (Ravitch, 2013).

On EPL
EPL are practical activities carried out in the Children’s House (classroom) that are performed daily in order to maintain and restore proper conditions in the environment. As mentioned before, EPL are important and therefore, Montessori (1984) gives EPL a permanent place in children’s work of self-construction and COL. The different areas of practical life include preliminary activities, care of self, care of the environment, grace and courtesy lessons, and control of movement. EPL help children to be part of taking care of themselves and beautifying their environment (Montessori, 1984). EPL, Gettman (1987) suggests, can
were no Montessori lessons with Montessori materials that were presented to individual students. There were scenes of adults working with groups, but they did not resemble a typical Montessori lesson, where the adult presents the lesson with Montessori materials and the children observe.

Specialist work: N&D
Item #35, in KO & MS’s classroom, in School-AMS, there was a Chinese language specialist that came once during the observation period.

From Table 2
Most results for the effects of PST in the above table have been interpreted as *, indicating the absence of the influences they correspond to. The results that are interpreted as N (Negligible) and D (Deficient) can be explained as follows: The PST with 3rd graders had some effect on the Attitude of some other children and the adult in the classroom in some instances.

Comfort Level in Environment: D
Item #4 in the above table recorded D in KO and MS’s classroom in School-AMS. This was because the main guide and some other adults were giving lessons to large groups of children in the middle of the main room, which made passage for other students uncomfortable.

PST on Independence: D
Item #12 refers to the effects of PST on independence. In several instances, I noticed in School-AMS that students’ independence was compromised because of adults’ interference with students’ individual and group work. Teachers were occupied with different groups of 3rd graders in different sections of the classroom, which interfered with the teacher attending to other groups.

PST Limiting Spaces: D
Item #14 refers to another effect of PST, that is, when groups of children were gathered in one area for PST, it limited access to that area by other children. This was the case in School-AMS and School-NOA.

Managing Groupwork: D
Item #16 was affected in classrooms of School-AMS and was interpreted as D. Again, this was due to the fact that teachers were busy with older groups of children for too long, at the expense of other groups who were not being prepared for testing.

Competencies: N
The attributes MW used in her response to the above question, described her competencies as follows:
✔ Competence: Knowledge of Montessori Method:
✔ Skills in doing PST
<Keeping COL while doing PST

Sample Quote Implying Duality of Objective:
“When I was working at another Montessori school, which was a private school it did not feel right because it was private, separate and elite or I should say exclusive because I have strong feelings about Montessori being available for everybody.” (Question 1, Quote 7)
Conclusion:
MW wants to make Montessori education available to everyone through publicly funded Montessori school. So, even socio-economically disadvantaged people can send their children to get a Montessori education.

Sample Quote Implying Duality of Objective:
“So, I am not individualizing completely the lessons that they’re getting for what they are working on. I am the teacher and have other responsibilities.” (see Question5, Quote 3)
Conclusion:
She is not following each child individually because she thinks she has other duties to attend to as a teacher. From this statement, I can conclude that she is undermining one of the essential principles of the Montessori method, which is following and observing individual children to make sure that a written record is kept of each child and that individualized lessons can be prepared for them according to their developmental needs.

Sample Quote Implying Duality of Objective:
“So, if there isn't a sense of understanding about how important it is that they use quiet voice levels, although I know that they're excited and they speak loud, but that is a real problem.” (see Question 6, Quote 1)
Conclusion:
This quote suggests that MW is not fully aware of the nature of the second stage of development in the lower elementary Montessori classroom, in which children have a tendency to socialize and learn immediately begin to satisfy the young child’s inner need to be self-sufficient. He adds that “children conduct the practical life activities for the sake of working through the processes rather than for the sake of their results” (p. 39). In other words, they are interested in mastering their manipulative skills more than anything else. My study views the qualities associated with teachers’ handling of groupwork and EPL as major influences on students’ COL and their work of self-construction in the lower elementary classrooms of my selected schools due to the students’ age range (7-8) and level of development.

On Cosmic education,
Item #32 in Table 1 was interpreted as * across all classrooms due to its absence during my scheduled observations in the schools. In the true Montessori setting, every day starts with a practice of cosmic education as that is one of the cornerstones of the Montessori method. It is intended to give children some basic knowledge about the orderliness and preparedness of nature for life (geology in general), glaciers, climatology, and so on (Herbst, Gruber-Fuchs, & Herbst, 2008, p. 220). Dr. Maria Montessori (1949) said that “If we have a vision of the cosmic plan in which every form of life in the world is based on purposeful movements, having their purpose not in themselves alone, we shall be able to understand and to direct the children’s work better” (p. 211).
PST on Observing: D

Item #17, Observing of students, was also diminished. I did not see the main teachers observing students doing their daily Montessori work, possibly because they were busy with PST with 3rd graders. In School-AMS, Type 4 groups were disruptive and socially interfering with other student groups. In addition, Type 4 was more prevalent in School-AMS and there was little individual work taking place. The frequency of group formation and dissipation in general was higher in School-AMS.

From Table 3

The results from this table were supplements to Adult(s) Competences in Rubric 4.

From Handwritten Fieldnotes

These notes supplemented results in all the Data Analysis Tools (Rubrics 1, 2, 3, and 4). See examples of these notes in Figure 9B in Chapter Four.

Main research question:

What influences in the classrooms of selected Montessori elementary schools in this study affect students’ concentration on learning?

All influences and qualities marked as A (Adequate), N (Negligible) and D (Deficient) in the above columns constitute the positive and negative influences on students’ concentration in the classroom I observed in School-AMS

Secondary Question:

How do the preparations for standardized tests in the selected public Montessori elementary schools in this study affect students’ concentration on learning?

Most effects of PST on 1st and 2nd graders that were displayed in Table 2 (in Chapter Four) were marked as *, indicating the absence of the influences they corresponded to. The PST with 3rd graders in the lower elementary classrooms, however, had some effect on some components of the CAOSE. Those effect were marked as N, or D and are shown in the left column above as the ones that affected COL

On Prepared Environment

In an authentic Montessori classroom, the adults’ competencies (or preparedness of the adult) include practices like exercises of practical life (EPL), cosmic education lessons, cultural lessons, lessons of grace and courtesy, and presenting age-appropriate individual and group lessons (i.e., within the zone of proximal development with Montessori materials). These lessons must be within the zone of proximal development (ZPD) of each child because that is where learning takes place. But, to find out where a child is in the ZPD, the child must be observed in all of his or her four stages of development (Vygotsky, 1978).
<table>
<thead>
<tr>
<th>Conclusions from Observed Influences in KC’s Classroom Related to her Competencies</th>
<th>Conclusions from Attributes in KC’s Interview Transcript Related to her Competencies</th>
<th>Literature Assertions on Themes of the Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Table 1</td>
<td>From Table 4</td>
<td>On Concentration</td>
</tr>
<tr>
<td>Concentration: A</td>
<td>Question 1</td>
<td>Researchers who built on Vygotsky’s ideas coined the term “scaffolding” to describe those activities that an educator or a more experienced peer provides as a learner moves through the ZPD. Wood, Bruner, and Ross (1976) defined scaffolding as a process “that enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts” (p. 90). For Wood et al., scaffolding requires “controlling those elements of the task that are initially beyond the learner’s capability, thus permitting him to concentrate upon and complete only those elements that are within his range of competence” (p. 90).</td>
</tr>
<tr>
<td>Item #4, Table 1 was interpreted as A in KC’s classroom with the least number of A’s. It is based on students’ individual COL and group behavior as observed during my observations in KC’s classroom.</td>
<td>Please tell me something about yourself and how you became interested in Montessori education? Qualifications: N The attributes KC used in her response to the above question, described her qualifications as follows: ✔ Traditional Education ✔ Montessori AMI ✔ Montessori AMS ✔ Job Experience: No information was provided</td>
<td>On Qualification On the issue of teacher qualifications, Esther Quintero (2014), a senior fellow at Albert Shanker Institute, suggests that to improve conditions for students in the classroom is to improve the quality of teachers’ human and social capital, an objective that Albert Shanker himself wanted to achieve by starting the charter school movement in 1988. Shanker wanted charter schools to empower teachers, help the profession of teaching, improve student achievement, and to be a support to traditional public schools. Since then, most charter schools have distanced themselves from Shanker’s idea. Instead, the charter movement has become a hot topic among investors and</td>
</tr>
<tr>
<td>Independence: D</td>
<td>Question 4</td>
<td></td>
</tr>
<tr>
<td>Item #6 in Table 1 is interpreted as D. During my observations in KC’s classroom, my DCT’s recorded children seeking help from their teacher for discipline issues.</td>
<td>Which of the Montessori learning pillars (e.g., the environment, the child, the adult, the materials) is most important to you and why? Competencies: D The attributes KC used in her response to the above question, described her competencies as follows: ✔ Importance of CAOSE ✔ Knowledge of Montessori Method ✔ Knowledge of Child ✔ Importance of Adult Role ✔ Importance of Materials ✔ Management of Scenes ✔ Management of Events</td>
<td></td>
</tr>
<tr>
<td>Adult Competencies: N</td>
<td>Question 5</td>
<td></td>
</tr>
<tr>
<td>Item #11, Table 1 has been interpreted as A in AZ’s classroom in School-AMI, as N in School-AMS classrooms, and as N in School-NOA classrooms.</td>
<td>Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold? Competencies: D The attributes KC used in her response to the above question, described her competencies as follows: ✔ Knowledge of Montessori Method ✔ Knowledge of Adult Role ✔ Importance of Materials ✔ Management of Scenes ✔ Management of Events</td>
<td></td>
</tr>
<tr>
<td>Academic Materials: D</td>
<td>Question 6</td>
<td></td>
</tr>
<tr>
<td>Item #25 was compromised due to the administration of standardized tests, which originates from duality of objective in publicly-funded Montessori schools and is founded in traditional curriculum. Materials for traditional education were shelved next to Montessori materials in School NOA, which not only affected the sequence of Montessori materials but also compromised the authenticity and the intention of the Montessori method behind the materials.</td>
<td>Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold? Competencies: D The attributes KC used in her response to the above question, described her competencies as follows: ✔ Knowledge of Montessori Method ✔ Knowledge of Adult Role ✔ Importance of Materials ✔ Management of Scenes ✔ Management of Events</td>
<td></td>
</tr>
<tr>
<td>Groupwork Dynamics: D</td>
<td>Question 6</td>
<td></td>
</tr>
<tr>
<td>Item #28 in Table 1 was interpreted as D in School-NOA because interactions</td>
<td>Which of these core Montessori tenets: “following the child”, “promoting independence/self-construction”, and “safeguarding children’s concentration” are you able to consistently uphold? Competencies: D The attributes KC used in her response to the above question, described her competencies as follows: ✔ Knowledge of Montessori Method ✔ Knowledge of Adult Role ✔ Importance of Materials ✔ Management of Scenes ✔ Management of Events</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CONCENTRATION: A PATHWAY TO LEARNING

within members of groups and between
groups of children were observed to be
lacking in grace and courtesy, both of
which are desirable characteristics in the
Montessori classroom.

Cosmic Education: D
Item #32 in Table 1 was interpreted as ✗
across all classrooms due to its absence
during my scheduled observations in the
schools. This was a significant
Montessori element that was missing
from all the classrooms in all the schools
that I visited.

Cultural Presentations: A
Item #33 was manifested in the form of
traditional story telling of “Griot” by a
black woman volunteering in the
classroom during circle time. The woman
also happened to be the mother of the
main guide.

Lessons: D
Item #34 was interpreted as D in all
classrooms of each school, indicating that
during the observations, there were no
Montessori lessons with Montessori
materials that were presented to
individual students. There were scenes of
adults working with groups, but they did
not resemble a typical Montessori lesson,
where the adult presents the lesson with
Montessori materials and the children
observe.

Specialist Work: D
Item #35 was given a D because no
specialists worked with the students for
extracurricular activities during the
observation period.

From Table 2

<table>
<thead>
<tr>
<th>Item</th>
<th>Observation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>#32</td>
<td>D</td>
<td>Absence during my observations on Montessori classroom.</td>
</tr>
<tr>
<td>#33</td>
<td>A</td>
<td>Cultural presentations as a typical Montessori lesson.</td>
</tr>
<tr>
<td>#34</td>
<td>D</td>
<td>Lessons not observed as Montessori lessons.</td>
</tr>
<tr>
<td>#35</td>
<td>D</td>
<td>Specialist work not observed.</td>
</tr>
</tbody>
</table>

Would you tell me what influences in your classroom
exert positive or negative effects on your students’
work and concentration as you try to uphold the
above tenets?

Competencies: D
The attributes KC used in her response to the above
question, described her competencies as follows:

✔ Competence: Knowledge of Montessori Method
✔ Identifying In-school Factors
✔ Verdict on Out-of-school Factors
✔ Management of Groupwork
✔ Management of EPL

Question 7
How do you prepare your students for the various
state-required tests without interrupting students’
concentration on their Montessori work?

Competencies: D
The attributes KC used in her response to the above
question, described her competencies as follows:

✔ Competence: Knowledge of Montessori Method:
✔ Skills in doing PST
✔ Keeping COL while doing PST

Sample Quote Implying Duality of Objective:
“I wanted to give that experience to more children,
and especially black children, because Montessori
has been a very white space and I think that it has a
lot to offer for children of color who have been done
disservice by the educational system.” (Question 1,
Quote 2)

Conclusion:
KC’s statement regarding Montessori schools
primarily being a white space for the elite and not
available to black children creates the impression that
Montessori philosophy is designed around racial
segregation. This could not be further from the truth,
as all children, regardless of skin color, are regarded by Dr. Montessori as “the universal child”.

Sample Quote Implying Duality of Objective:
I asked KC: Do you prepare individual lessons for
each child?

“Not so much individual lessons, more so writing
down or keeping track of when I am presenting a
lesson to a small group. Who’s getting it (structural
feature’s effect), who’s not (structural feature’s
effect), who’s fighting to do their independent work
(structural feature’s effect), and who we’ll need to
reteach, who should I do independent work with, and
who can I give them something to do (structural
feature’s effect) and they’ll go and then show me
their work later (structural feature’s effect)” (Question
4, Quote 4)

Conclusion:

EPL are practical activities carried out in the Children’s
House (classroom) that are performed daily in order to
maintain and restore proper conditions in the
environment. As mentioned before, EPL are important and
therefore, Montessori (1984) gives EPL a permanent place
in children’s work of self-construction and COL. The
different areas of practical life include preliminary activities,
care of self, care of the environment, grace and
courtesy lessons, and control of movement. EPL help
children to be part of taking care of themselves and
beautifying their environment (Montessori, 1984). EPL,
Gettman (1987) suggests, can immediately begin to satisfy
the young child’s inner need to be self-sufficient. He adds
that “children conduct the practical life activities for the
sake of working through the processes rather than for the
sake of their results” (p. 39). In other words, they are
interested in mastering their manipulative skills more than
anything else. My study views the qualities associated with
teachers’ handling of
groupwork and EPL as major influences on students’ COL
and their work of self-construction in the lower
elementary classrooms of my
selected schools due to the
students’ age range (7-8) and
level of development.

Cosmic education, Item #32
in Table 1, was interpreted as ✗
across all classrooms due to
its absence during my
scheduled observations in the
schools. In the true
Montessori setting, every day
the child not having an interest in the material being offered in the lesson or the child might have been a special needs student. In the same school, in KC’s class, there was another incident where the teacher was saying no to a child in a manner that was not consistent with the Montessori rules of grace and courtesy. The teacher was busy with a group of older students and, based on the non-Montessori materials they were using, I assumed she was preparing the students for some sort of test. So, the teacher’s focus on PST prevented the younger child from being attended to. I recorded that incident as an effect of PST on adults’ attitude.

PST on Independence: D

Item #12 refers to the effects of PST on students’ independence. In several instances, I noticed that students’ independence was compromised because of adults’ interference with students’ individual and group work. Teachers were occupied with different groups of 3rd graders in different sections of the classroom, which interfered with the teacher attending to other groups.

Limiting Spaces: D

Item #14 refers to another effect of PST, that is, when groups of children were gathered in one area for PST, it limited access to that area by other children. This was the case in School-AMS and School-NOA.

Managing Groupwork: D

Item #16 was affected in classrooms of School-NOA and were interpreted as D. Again, this was due to the fact that teachers were busy with older groups of children for too long, at the expense of other groups who were not being prepared for testing.

Observing Students: D

Item #17 was also diminished. I did not see the main teachers observing students doing their daily Montessori work, possibly because they were busy with PST with 3rd graders.

From Table 3

KC’s attributes used in her response do not correspond to the attributes sought in this question. Her narrative suggests that she is a qualified traditional and not a well-prepared Montessori adult. Most of the attributes Teacher KC has used to respond to the different parts of the question are affected by structural features (see quotes # 2, 3, 4, 5, 6 in column to the left) of the school (Charter School Rules) and have no relevance to Montessori method. The School-NOA in not affiliated with any Montessori Accreditation Institutions like AMI and AMS.

Sample Quote Implying Duality of Objective:

“Following the child is again one of the ones that I use a lot. I try to keep that at the center of my planning. Even just planning week by week, I have an idea of where I want to go. But where we were last week will determine where we are this week. If I just plan my whole year, then where’s the room for me to follow the children?” (see Question 5, Quote 1)

Conclusion:

In this statement, KC suggests that she is the who decides what knowledge to offer the children rather than being led by individual children. In addition, in a Montessori classroom, there is no “we”. This implies that KC still operates in a traditional classroom mindset, where she decides what stage of the curriculum the children need to be in.

Sample Quote Implying Duality of Objective:

“I think, to be honest, being a bit restrictive and strict about movement can have a positive effect on productivity. Sometimes the freedom to move and choose has a negative effect on their concentration because they’re already scattered. You’re six or seven years old, so I don’t know why I thought you could concentrate all morning anyway.” (see Question 6, Quote 1)

Conclusion:

KC’s claim that freedom of choice and freedom of movement is counter-productive is a sign of her lack of knowledge of basic Montessori tenets. Calling her young students “scattered” is placing a label on them and has no place in the education and preparation of an adult to be a suitable teacher in a Montessori environment.

Sample Quote Implying Duality of Objective:

You have to take a comprehensive assessment starting in 3rd grade that puts you on par with every other student in the state. That is how they will judge you. They will not judge my babies by the beautiful Native American projects that we have on the walls, they will judge them by how they do on the test. So, what I’m doing now working from the standards as starts with a practice of cosmic education as that is one of the cornerstones of the Montessori method. It is intended to give children some basic knowledge about the orderliness and preparedness of nature for life (geology in general), glaciers, climatology, and so on (Herbst, Gruber-Fuchs, & Herbst, 2008, p. 220). Dr. Maria Montessori (1949) said that “If we have a vision of the cosmic plan in which every form of life in the world is based on purposeful movements, having their purpose not in themselves alone, we shall be able to understand and to direct the children’s work better” (p. 211).

In an authentic Montessori classroom, the adults’ competencies (or preparedness of the adult) include practices like exercises of practical life (EPL), cosmic education lessons, cultural lessons, lessons of grace and courtesy, and presenting age-appropriate individual and group lessons (i.e., within the zone of proximal development with Montessori materials). These lessons must be within the zone of proximal development (ZPD) of each child because that is where learning takes place. But, to find out where a child is in the ZPD, the child must be observed in all of his or her four stages of development (Vygotsky, 1978).

On Prepared Environment

Dr. Montessori says “there is only one basis for observation: the children must be able to express themselves and thus reveal those needs and attitudes which would
The results from this table were supplements to Adult(s) Competences in Rubric 4.

In School-NOA, Type 4 groups were disruptive and socially interfering with other student groups. In addition, Type 4 was not as prevalent in School-NOA and there was little individual work taking place. The frequency of group formation and dissipation in general was also low in School-NOA compared to School-AMI and School-AMS.

From Handwritten Fieldnotes:
These notes supplemented results in all the Data Analysis Tools (Rubrics 1, 2, 3, and 4). See examples of these notes in Figure 9B in Chapter Four.

Main research question:
What influences in the classrooms of selected Montessori elementary schools in this study affect students’ concentration on learning?

All influences and qualities marked as A (Adequate), N (Negligible) and D (Deficient) in the above columns constitute the positive and negative influences on students’ concentration in the classroom I observed in School-NOA.

Secondary Question:
How do the preparations for standardized tests in the selected public Montessori elementary schools in this study affect students’ concentration on learning?

Most effects of PST on 1st and 2nd graders that were displayed in Table 2 (in Chapter Four) were marked as *, indicating the absence of the influences they corresponded to. The PST with 3rd graders in the lower elementary classrooms, however, had some effect on some components of the CAOSE. Those effects were marked as N, or D and are shown in the left column above as the ones that affected COL.

Note: Teachers direct quotes are not edited for grammatical or stylistic mistakes in Figure 12 above.