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Fidelity of Implementation of an Urban Elementary Montessori Kindergarten Program

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This is to certify that the doctoral study by

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Walden University
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Abstract

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MS, Walden University, 2010

BS, Jarvis Christian College, 2003

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

In a Texas school district, administrators did not monitor the fidelity of implementation (FOI) of the Montessori kindergarten program implemented in 2005, which left administrators without empirical data regarding program implementation. The purpose of this qualitative evaluative case study was to explore teachers' and administrators' perceptions and implementation of the Montessori program. Using the implementation of science framework, which involves examining FOI by monitoring interventions, implementation methods, enabling contexts, and intended outcomes, data were collected through interviews, nonparticipatory observations, and a review of archived Montessori documents. A convenience sample of 10 Montessori teachers, who met criteria of over 5 years of teaching experience, and 2 or more years experience teaching in the Montesorri program, and administrators who met criteria of supervising Montesorri grades, volunteered to participate in this study. Data were analyzed using comparative and inductive analyses and analytical coding. Findings from the data resulted in emergence of 5 themes: administrative support and capacity building for the Montessori program to support FOI, availability of more advanced Montessori resources, peer coaching to support novice Montesorri teachers, precise and consistent comprehension of the Montessori learning model, and relevant and targeted professional development related to Montesorri program implementation. A 3-day professional development project was designed to promote FOI of the Montessori program for teachers and administrators. The project will improve stakeholders' knowledge and capacity building to strengthen Montesorri program FOI and promote students' academic success.

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Dedication

This educational work is dedicated to my family. Words cannot express how much I miss each of you. To lose my entire immediate family to death, yet persevere to continue to complete my terminal degree was a difficult and grim challenge. With every word written, I thought of each of you and how proud you must be. I love and miss you all dearly. May you all rest in peace, my Angels: John Lee Starling (Daddy) (1950-2008), Brenda Sue Starling (Momma) (1956-2009), and LaKesia Yvette Starling (Sister) (1974-2017). I will forever cherish the memories and hold our love close to my heart. It broke my heart to lose you all, but you did not go alone. A part of me went with you, the day God took each of you home. If tears could build a stairway, and heartaches make a lane, I would walk right into heaven and bring you back again. In life I loved you dearly, in death I love you still, in my heart I hold a place no one will ever fill. I love you all. Until we meet again.

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Section 1: The Problem

School administrators in Local Independent School District 1 (LISD1)

(pseudonym) were concerned about the low academic performance of kindergarten and

first-grade students. Consequently, the administrators decided on a course of action to

examine a variety early childhood programs to remedy low academic performance for

minority students. Researchers have emphasized the importance of the variations of

Montessori programming in comparison to traditional educational programming

(Montessori, 2014). As a result, a Texas urban school district adopted the Montessori

programming in the fall of 2005 (Debs & Brown, 2017; director of early childhood

education (personal communication, 2015). Montessori included key ingredients to the

philosophy for learning to promote the optimal learning experience. Montessori designed

components that are aligned to development and self discovery (Malcom, Wood, Booth,

& Bailain, 2013; Danner & Fowler, 2015). District administrators perceived that, based

on research implementation of the Montessori program in the kindergarten curriculum

would support student learning needs (director of early childhood, 2017). The Montessori

learning environment includes materials that promote an atmosphere for individual

learning and self-discovery (Lillard, 2014; Mallett & Schroeder, 2015). After careful

consideration, the Montessori curriculum was chosen for the kindergarten classes in

LISD1 (director of early childhood education, personal communication, 2017).

The district administrators selected the Montessori program because one of the

goals of the Montessori program is to increase the academic performance of the

foundational grades of pre-K and kindergarten. One of the major components of the

Montessori program is to train a learner to think independently and obtain an intrinsic love of exploring. Self discovery allows the learner to become independent learners (Ayer, 2016; Montessori, 1985; Rathunde, 2015). The Montessori philosophy was also chosen due to the appealing approach of meeting the learners where they are academically. The freedom and flexible learning atmosphere allows students to master lessons at their own level and timing (Debs & Brown, 2017; Montessori, 1985; Shernoff & Shernoff, 2013). After 2 years of researching Montessori educational settings, LISD1 central administrators decided to implement the Montessori program in all kindergarten classrooms except for one campus. One elementary campus in the district that houses kindergarten through fifth grade retained the traditional program because of the demographics of the campus population. Parents were provided with the option to apply for an in-district transfer if they preferred a traditional kindergarten curriculum. The in-district transfers were granted based on class size and a first come, first served basis.

Definition of the Problem

The district administrators implemented the Montessori program in 2005, and the program has operated within the district as the core kindergarten curriculum with no formative or summative evaluation or fidelity of implementation (FOI) evaluation for 13 years. The FOI of a program is vital in assessing whether the program is being implemented as intended (Boroch et al., 2007; Evans, 2015). The local educational problem was the kindergarten Montessori program in LISD1 lacked a FOI assessment, which left the district without empirical evidence to support the potential effectiveness of the program. LISD1's (director of early childhood, personal communication, 2015) stated

that there had been no formal evaluation to ensure the goals of the Montessori program had been implemented with fidelity. There were no formative or summative data regarding the implementation of the Montessori program.

In this urban Texas district, there was a need to formally assess the kindergarten Montessori program to gain knowledge of program's fidelity and to promote professional development (PD) to support program implementation (Director, personal communication, 2016). The district campuses implemented a professional learning community (PLC) to support teacher development and discussion of student data. DuFour (2014) suggested PLCs shift the focus of education from teachers teaching to student learning. Despite district administrators sharing student data with campus leadership and teacher teams through PLCs and PLC discussions on how to improve academic success and decrease the number of discipline referrals in the kindergarten Montessori program, the academic concerns persisted and the program lacked the empirical evaluation to determine whether it was being delivered as originally designed. The success of Montessori education is based on the understanding that the child's education will be designed with the entire child in mind (Ansari & Winsler, 2014; Mallett & Schroeder, 2015). A review of the district assessment and discipline data from 2011 through 2016 indicated there were variations in the scores of students who transitioned from the Montessori program to the traditional first grade classrooms.

The primary aim of a FOI study is to ensure a program service or intervention is being delivered as designed or intended (Malcom, Wood, Booth, Rick, & Bailain, 2013). After 13 years of implementation, LISD1 needed to evaluate the kindergarten Montessori

program to determine whether it had been implemented as designed. Data from the study site supported the need for additional PD to align content delivery, nonparticipatory classroom observations, and student performance for all district campuses that housed the kindergarten Montessori programs. District administrators and teachers needed to more deeply understand how the Montessori program was being implemented as perceived by teachers and administrators.

The purpose for this qualitative case study was to determine the FOI of the Montessori program being used to support kindergarten student performance and behavior. District and campus staff would benefit from a FOI assessment in the Montessori program because the absence of these data left campus administrators without empirical evidence regarding the FOI of the Montessori program components. The FOI assessment provided insight into the Montessori program by providing data to determine whether the program was being implemented as designed (see Bailain, 2013; Peterson, 2006).

The study district implemented the kindergarten Montessori program more than a decade ago; however, district leadership had not evaluated the program in terms of FOI. The district did not have the data to support whether the kindergarten Montessori program had been implemented with the goals and vision intended. The results of the FOI study would assist district leaders in determining the FOI of the components of the kindergarten Montessori program. The study results would assist in refining implementation of components through PD to enhance student performance and behavior. Teachers' training, motivation, knowledge, efficacy, resources, supports, and

willingness to engage in the process may have a substantial influence on the fidelity of implementing the kindergarten Montessori program with success (Castro-Villareal, 2014; O'Conner & Freeman, 2012). The results of the FOI study would assist district leaders in determining whether the program was being delivered as designed. Identifying the implementation of components of the Montessori program was central to understanding the fidelity and effectiveness of the program. Conducting FOI evaluations consistently would ensure the program was being conducted with fidelity and the goals were being achieved as designed.

<div align="center">**Rationale**</div>

Evidence of the Problem at the Local Level

The rationale for the study was the absence of formal FOI of the kindergarten Montessori program in LISD1. Results of the FOI study would provide district administrators with a deeper understanding of the kindergarten Montessori program to discern whether the program was effective in enhancing student performance based on teacher and administrator perceptions of the overall implementation of the kindergarten Montessori program as designed. According to the district's director of early childhood, (personal communication, 2015), "there is an apparent issue when students exit the Montessori program and enter the traditional setting." The assistant superintendent of curriculum, instruction, and assessment (personal communication, 2015) explained there must be a strategic plan to vertically align the teachers with the program's goals to ensure collaboration takes place, and to plan, adjust, and implement strategies to promote prominent stages of learning for all students in the Montessori program. Because of the

lack of standardized testing and grades, "stakeholders are skeptical as to whether the Montessori philosophy and traditional curriculum aligns and positively impacts the cognitive ability of young leaners" (Chattin-McNichols, 2014, p. 141). Conducting this project study generated data to assess the FOI of the kindergarten Montessori program of LISD1.

In this FOI study, I explored the impact of cognitive, constructivist, and social principles in relation to the Montessori program. Findings will be used to reduce the achievement gap in the kindergarten Montessori program. Findings from the FOI study supported the need for additional PD for teachers and administrators to strengthen the Montessori program. Schleicher (2011) explained that teachers cannot give what they do not have; the only way to improve educational outcomes is to improve instructional practices. Educators need constant training in their specific content areas to remain current and relevant and to advance in their craft (Hill, 2015).

From this FOI study, school administrators and teachers in LISD1 were able to address the four factors affecting FOI, which are complexity, material and resources required, perceived and actual effectiveness, and interventions (Prothone, 2008). These four factors in relation to the FOI of the kindergarten Montessori program addressed the issues of time needed for instruction and intervention, accessible resources, teachers' perceptions of the effectiveness, and teachers' motivation level to deliver interventions with fidelity. Teachers need to know the content they are teaching is effective and relevant (Lillard, 2015; McKenna, 2014; Taylor, 2015). Teachers and administrators may also measure fidelity by conducting observations, self-assessments, and analysis of

student achievement outcomes by monitoring the frequency, method, and support

systems (Margulis, 2012; McKenna et al., 2014).

Teachers play a vital role in implementing the content of the Montessori

program. Teachers' perceptions, understanding, and attitudes in regard to the Montessori

program are critical to addressing teacher buy in, fidelity concerns, and professional

development obstacles (Ayer, 2016; Castro-Villarreal, 2014). Measuring FOI by

observing teachers allows administrators to determine the frequency and appropriateness

of the delivery of instruction and interventions and to provide immediate support to

teachers to ensure instruction and interventions are implemented with fidelity (Gerstner

& Finney, 2015). Support is needed when implementing new skills and concepts such as

the Montessori philosophy because when teachers do not have support from leadership

teams or collaborative learning teams, inconsistent implementation practices take place

leading to unclear procedures, decisions, and poor documentation of students' data

(Butler & Schnellert, 2012). It is important to develop collaborative teams to support

teachers (often with PD) to provide evidence-based practices and interventions by clearly

communicating what is important for successful implementation of the Montessori

program (Castro-Villarreal, 2014; Nellis, 2012).

Allain (2015) argued that 80% of students' academic needs are met when there is

FOI of a program or concept in an educational setting. In a 2014 study in a Chicago high

school, Callender (2014) indicated that without FOI, about 65% of students were

promoted without achieving the necessary knowledge and skills needed to be successful

in the next grade or to graduate from high school. The purpose of the current study was to

determine the FOI of the kindergarten Montessori program and to refine program implementation at the study site.

Implementing a consistent educational model with understanding and fidelity can be beneficial for both students and teachers in regard to effective content delivery of the Montessori program's standards (Gulamhussein, 2014; Nellis, 2014). The Montessori method is deeply rooted in the development of students (Ayer, 2016; Debs & Brown, 2017). Data in Table 1 show that for students served in the Montessori program who transitioned to a traditional first grade, overall student performance on reading and math benchmarks for the years 2013 through 2016 declined. These data also indicate that for Montessori students transitioning to a traditional first-grade program, discipline referrals for the years 2013 through 2016 increased. These data provided support to conduct the FOI study at the local site.

Table 1

Percentage of kindergarten Montessori students and first grade TPRI, Reading benchmark, Math benchmark percentages, and discipline totals for years 2013 through 2016

Year	2013-2014	2014-2015	2015-2016
Assessment	Kindergarten/first grade	Kindergarten/first grade	Kindergarten/first grade
Spring Administration Texas Primary Inventory (TPRI)	86.9% 75.6%	87.2% 74.3%	88.4% 72.5%
Reading benchmarks	76% 78%	80% 66%	85% 61%
Math benchmarks	75% 71%	78% 67%	81% 55%
Discipline referrals	57 66	48 71	31 78

Note. Adopted from LISD1 Student Performance Data (2013-2016).

Evidence of the Problem From the Professional Literature

Education programs range from early childhood development to those focusing on increasing language and literacy for college students and those that promote career readiness. Some programs achieve the desired goals, and some programs fail to meet the objectives of the design or fail to implement the curriculum as designed. To conduct a FOI study, it is essential to determine the reason some programs are successful while others fail (Royse, Thyer, & Padgett, 2015). When formal evaluations are not conducted, inadequacies within the program are not addressed (Bridges, 2013; Waters, 2013). Traditional U.S. curricula must conform to the guidelines of traditional education for learners to be free to learn at their own pace (Lillard, 2014). Roughly 100 years ago, Montessori became the first female physician in Italy and devised a different approach of

educating children grounded in her observations of how students learn (Ansari &
Winsler, 2017; Montessori, 1989; Nutbrow & Clough, 2014). Lillard (2005) presented
research that showed science finally aligned with the methodology of Montessori. Lillard
(2014) stated that "when implemented with fidelity, Montessori education can foster
social and academic skills that are equal or superior to those fostered by a pool of other
schools" (p. 254). Educators involved with both models face the challenge of enhancing
their awareness of the model less familiar (Lillard, 2005).

A qualitative analysis of the FOI of the Montessori program addressed strengths
and weaknesses of the program to determine its effectiveness and implementation. FOI of
the kindergarten Montessori program had not been examined in LISD1, which left the
district without empirical evidence to support the potential effectiveness and the program.
Wholey (2012) stated that the ultimate goal of a FOI evaluation is to create positive
organizational change based on the evidence and conclusions drawn. The purpose of this
study was to determine the FOI of the kindergarten Montessori program, Results may be
used to refine the Montessori program implementation at the study site.

Definition of Terms

Core Components of Montessori Education: "The core components providing the
framework for articulating the quality of Montessori schools focus on the commitment of
trained teachers, multi-aged classrooms, and use of Montessori materials, child-directed
work, and uninterrupted work periods" (Montessori, 2014, p. 137).

Evaluation: Evaluation is a form of assessment using viable research methods to
examine an organization or project (Royse et al., 2015).

Fidelity of implementation: "Fidelity of implementation (FOI) examines the implementation of an intervention or program as it was originally designed or intended to be implemented (Carroll, Paterson, Stevenson, & Wood, 2007, p. 205).

Montessori education: "Montessori education is a system of education for young children that seeks to develop natural interests and activities rather than use formal teaching methods" (Montessori, 1985, p. 81).

Professional development: "Professional development (PD) is the process of improving and expanding capabilities of staff through the approach to education and training opportunities in the workplace, which can be provided through external organizations, by the personnel in the organization and/or through observing others perform a job. PD assists in building and maintaining of morale of staff members and is thought to attract higher quality staff to an organization" (Learning Forward Association, 2001, p. 211).

Professional learning community (PLC): "A PLC is a group of educators that meets regularly, shares expertise, and works collaboratively to improve teaching skills and the academic performance of students" (DuFour, 2004, p. 72).

Vertical alignment: "Vertical alignment is the state or act of lining items up, one above each other. The exact meaning of this concept varies depending on the context. Vertical alignment has applications in a wide range of fields and subjects and can take on greatly differing meanings from place to place" (Education Reform, 2014, p. 42).

Significance

Significance of the Study Problem

The purpose of this study was to determine the FOI of the Montessori program so that results could be used to refine the Montessori program implementation at the study site. The FOI of the kindergarten Montessori program had not been examined in LISD1, which left the district without empirical evidence to support the potential effectiveness of the program. When conducting an FOI, collaboration and consistent monitoring are vital components of FOI (Abry, Brewer, Larsen, & Rimm-Kauffman, 2014; Castro-Villarreal, 2014). According to LISD1's director of early childhood (personal communication, July 6, 2016), 85% of Montessori teachers at the study site are new to teaching the Montessori method and may need to increase their knowledge to deliver the content with fidelity. The assessment of the program's strengths and weaknesses and evaluation of the content delivery provided district leaders with data that could be used to enhance the program's goals. District-wide and campus implementation efforts create a dynamic change process when fidelity has been monitored effectively and used to guide reflection and subsequent actions (B.Carter, 2013; Pool, 2014).

Usefulness of Study to Local Setting

Results of this FOI study addressed the gap in practice by investigating teachers' and administrators' perceptions of the FOI of the kindergarten Montessori program in LISD1. Obtaining a deeper understanding of the teachers' and administrators' perceptions allowed district leaders to refine the Montessori program to support teachers' understanding and teaching approach incorporating the Montessori philosophy (see Ayer,

2016; Danner & Fowler, 2015). This study provided a deeper understanding of the Montessori method of teaching and discerning the FOI of the Montessori program. Local administrators received data to support PD for teachers and administrators. This PD support will help calibrate the FOI of Montessori programming and may result in positive social change through improved accommodation of individual learning needs of students and by satisfying district and Montessori requirements. This qualitative case study allowed me to spotlight teachers' and administrators' perceptions regarding the FOI of the kindergarten Montessori program components and perceived barriers to program fidelity. By investigating teachers' and administrators' perceptions of the kindergarten Montessori program's FOI, I provided stakeholders data to improve the Montessori program. The findings from these data also promoted collaboration among teachers and administrators regarding the fidelity of the Montessori method. Findings may be used to maintain the FOI of the program.

Research Questions

Researchers have shown that FOI is a vital factor in determining the efficiency of a program (Casety, 2013; Jones, 2015; Miller, 2014). A FOI study is tailored to each program and can be used to measure the overall outcomes and spotlight components that need strengthening or adjusting. The absence of a FOI study left the study site district without empirical evidence regarding the level of implementation of the kindergarten Montessori program. Research questions are used to narrow the scope of the study to reflect the participants' views of the central phenomenon (Creswell, 2012). The following

research questions (RQs) were designed using the implementation of science conceptual

framework to examine the FOI of the kindergarten Montessori program:

RQ1: How do teachers and administrators perceive the fidelity of implementing

the kindergarten Montessori program as related to: (a) effective interventions, (b)

implementation methods, (c) enabling contexts, and (d) intended outcomes at the study

site?

RQ2: How are teachers observed to implement the kindergarten Montessori

program as related to (a) effective interventions and (b) implementation methods at the

study site?

RQ3: How is the implementation of the Montessori kindergarten program

reflected in archival documents such as lesson plans and campus and district PD plans at

the study site?

Fidelity is meaningful when the focus is on instruction, decision-making, and

implementation versus adherence to rules (Gramble, 2014; Prasse, 2015). Conducting this

FOI study provided administrators and teachers in LISD1 the opportunity to sustain and

improve an effective academic kindergarten Montessori program to benefit all students.

<div align="center">**Review of the Literature**</div>

Conceptual Framework

To examine how teachers and administrators perceive the FOI of the kindergarten

Montessori program, the implementation of science framework was the chosen

framework. This conceptual framework holds that learners acquire knowledge and

understanding based on previous knowledge, understandings, and skills (Dunst, Raab, &

Trivette, 2013; Fosnot, 2013). Fidelity evaluations are specific assessments used to examine and determine the value of a program (Percy, 2014). FOI evaluations are conducted to determine a program's effectiveness and make any recommendations for programmatic refinement and success (Lodico, Spaulding, & Voegtle, 2012). Effective FOI studies not only address performance but can be used to guide and strengthen programs, determine effective procedures, provide accountability reports, and suggest a discontinuation of a program, if necessary (Stufflebeam, 2012). The implementation of science framework indicates the importance of considering implementation practices, intervention practices, and FOI when school leaders implement new programs (Dunst, 2013; Grogan & Bumpus, 2016). According to the implementation of science framework, learning will occur by implementing change in the kindergarten Montessori program while encouraging teachers and administrators to build on their prior knowledge and apply new learning concepts within their daily experiences.

The implementation of science framework served as a guide to collect data and to describe how Montessori components of the program were being implemented as originally designed. This framework provides insight into the elements of an effective implementation process that leads to the adoption of new policies, programs, evidence-based methods, and/or intervention practices in a manner that is intended (Bumpus, 2016). Increasing the use of conceptual approaches to better understand the program of study and why program implementations fail or succeed derives from the implementation of science framework (Callender, 2014).

It is imperative for the teacher to prepare the learning environment to ensure there are opportunities for success that develop the child for self-discovery and independence (Montessori, 1989). Lillard (2014) stated that "educators normally use pedagogical approaches when delivering content to students" (p. 207). Montessori (1989) stated that children absorb learning through language and actions, and it is critical to promote positivity in the educational environment to mold the absorbent mind.

Review of Broader Problem

The literature review included several databases such as SAGE and ERIC. Search terms used to locate related peer-reviewed and other material were as follows: *early childhood education*, *Fidelity of Implementation (FOI)*, *Montessori education*, *Kindergarten Texas Essential Knowledge and Skills (TEKS)*, *Maria Montessori*, *Everett Rogers*, *implementation of science framework*, and *qualitative research.* Articles were chosen based on their generalizability and relevance to the current study and means to offer support for additional documentation.

The characteristics of development presented by the framework developed by Rogers (1955) provided a lens for the study of how information is processed and received by learners. Conducting an FOI study would present insight into the perceptions of teachers and administrators of LISD1 on the fidelity of the program. LISD1 district administrators implemented a kindergarten Montessori program in 2005 to address the kindergarten student behavior and academic performance, which continues to be a concern for district administrators. The FOI of the kindergarten Montessori program had not been examined in LISD1, which left the district without empirical evidence to support

potential effectiveness of a program that was implemented over 12 years ago. There were

two aims of this literature review. First, I observed relevant and current literature related

to FOI. Second, I examined the kindergarten Montessori program components, pedagogy,

and practices to provide a clear foundation of the intended design of the program and to

provide the literature basis for examining the program as it was designed compared to the

reported perceptions, observed practices, and recorded practices.

        Montessori program goals and background. The primary goal of both

Montessori and traditional schooling is the same, which is to provide learning

experiences for the child. Celebrating diversity not only fosters positive education

experiences, but also enables a sense of community (Baldwin, Buchanan, & Rudisill,

2007; Ungerer, 2013). To comprehend the Montessori approach, also known as

personalized learning or progressive learning, it is essential to trace the history, values,

philosophy of the program, and components of this specific methodology in pre-K, K-12,

and special education programs (Ayer, 2016; Hoffester, 2014). There are approximately

4,000 private Montessori program options and more than 200 Montessori-styled public

schools servicing students from infancy to 8th grade (North American Montessori

Teachers' Association, 2014). The biggest differences lie in the kind of learning

experiences each learning setting provides and the methods used to accomplish this goal

(Lillard, 2012; Mallet & Schroeder, 2015). Teaching must fit the student and become

interactive to promote effective learning (Alford, 2013). The bridge that connects

Montessori to traditional learning is both systems increase the skill and knowledge base

and skill development in children (Berry, 2015; Mallet & Schroeder, 2015). To become

effective educators, teachers must see themselves as their students do to reflect and learn within their learning community (Snyder, 2011).

Montessori philosophy. Montessori's (2014) theory of normalization aligned with this study in relation to self-regulation that falls under the scope of the principles of preparing the child for independence and observing the child in a prepared environment. For each course of instruction, there is a phase when its influence is most fruitful because the child is most receptive to it; it is called the sensitive period in Montessori education (Ayer, 2016; Feez, 2011). It is the primary aim in Montessori education to make the child independent, which is achieved by providing the child with multiple opportunities (Gardner, 2006). According to Montessori (2014), independence occurs when children are capable of completing tasks for themselves; there is an increase in their self-belief, self-confidence, and self-esteem, which will carry on throughout their lives. Independence allows for self-discovery and an intrinsic love of learning.

Lifelong learners often display the ability to normalize their work practices and learning in ways that are both goal related and enjoyable and interesting (Mertens, 2014; Sibthrop et al., 2011). Montessori (2014) argued that a child should not be told what to do, but rather should be presented with opportunities to choose a variety of choices to reach the common goals. Peer interaction is also an integral component of Montessori education (Montessori, 1989). A fundamental part of a child's experience in an early childhood education setting is social interactions with peers (Hurley, Wehby, & Feurer, 2011; Yakil, Welton, O'Connor, & Kline, 2009). Children should feel safe in making mistakes; it is the adult's responsibility to provide a relationship in which children reach

their full potential and gain knowledge for every mistake made (Black, 2009; Montessori, 2014).

When using the Montessori method, the teacher should provide guidance for the expected physiological and physical development of the child, which is separated into three domains: motor education, sensory education, and language (Ayer, 2016; Montessori, 1917; Montessori, 2010). The education methods of Montessori movements are very intricate, as they must be parallel to all of the corresponding movements that learners have to create in their physiological organism (Ayer, 2016; Danner & Fowler, 2015; Montessori, 2010). The Montessori method encourages self-directed learning, which is alternately associated with physical movement during a task (Gureckis & Markant, 2012). According to Montessori (2014), the child, if separated from direction, is disorganized in his or her movements; these confused movements are specified characteristics of the child. Therefore, one focus of the teacher is keeping the learner engaged by designing a learning environment that is tailored to the needs of learners. This design includes a variety of options for activities, materials, and interactions.

Because of the need to allow learners to discover, the Montessori method provides didactic materials that offer the child a means for sensory education (Debs & Brown, 2017; Lillard, 2014). The module of language aligns with the movement and discovery pieces of the Montessori methodology because of the learner's attention to succeeding sounds and noises, which are created in the learning environment; the learner distinguishes them and differentiates between them to follow more precisely the sounds of fluent language (Montessori, 2014). Teachers should be able to create opportunities

that validate metacognitive awareness of the role of oral interaction by enabling creative ways of ensuring development and comprehension opportunities (Adams, 2011; O'Neill, Geoghegan, & Petersen, 2013). The Montessori teacher respects the child and engages the student as a partner in learning (Cossentino, 2006; Pailoor, 2014). During instruction, relationships between leaner and teacher must be mobilized to influence students' commitment to their own learning (Lampert, 2012; Wlodkowski, 2011).

Core components of Montessori education. Although there are many components that are integral to quality Montessori implementation, the American Montessori Society recognizes five core components as essential in Montessori schools. Montessori education is a comprehensive form of education in which many elements fit together with other elements. Montessori (2014) stated that a true Montessori program will make certain that every Montessori classroom has the necessary components that provide lessons and learning opportunities that promote freedom, independence, and creative thinking and that assist in solving problems.

Properly trained teachers. A very proficient Montessori educator is very knowledgeable in Montessori theory and philosophy, and also proficient in accurately and appropriately using Montessori materials (Ayer, 2016).

> The teacher has observational skills to guide and challenge all students, thereby providing a firm foundation in human growth and development; it is essential that the teacher possess the leadership skills necessary for fostering a nurturing environment that is physically and psychologically supportive of learning (Lillard, 2014, p. 338).

A properly trained teacher will know what each learner needs through constant observation and rotating through the prepared, and structured environment (Debs & Brown, 2017).

  Multi-age classrooms. Multi-age classrooms enable younger students to learn from older students and experience new challenges through observation; older students reinforce their learning by teaching concepts they have already mastered, develop leadership skills, and serve as role models (Lillard, 2014; Mallet & Schroeder, 2015; Montessori, 2014). "This assembly parallels reality, in which participants work, and socialize with people of all ages and personalities" (Ayer, 2016, p. 115). Multi-aged classrooms allow students to learn from their peers through many of the Montessori tactile materials, which assist in strengthening motor skills and coordination (Montessori, 2014).

  Use of Montessori materials. A trademark of Montessori education is its tactile methodology to leaning and the use of scientifically designed didactic materials (Ayer, 2016; Mallet & Schroeder, 2015). Montessori's distinctive learning materials are used to each teach a single skill or concept and include a built-in mechanism ("control of error") for presenting the student with a strategy or monitoring progress for correcting mistakes, independent of the teacher (Balain, 2013; Lillard, 2012). The tangible materials provide paths to abstraction and introduce concepts that become progressively complex.

  Child-directed work. Montessori education supports children in choosing meaningful and challenging work of their own interest, leading to engagement, intrinsic motivation, sustained attention, and the development of responsibility to oneself and

others (Ansari & Winsler, 2014; Balain, 2013). Lillard (2014) explained, child-directed work is maintained by the purpose and procedures of the Montessori learning environment, which is designed to stimulate each child's interest and to provide the opportunity to learn in peaceful, organized spaces either individually or as part of a group. Students in the Montessori classrooms are allowed to work at their own pace, choosing lessons that are appropriate with their cognitive level.

Uninterrupted work periods. The uninterrupted work period identifies and respects individual differences in the learning process. During the work period, students are given opportunities to complete numerous tasks and responsibilities at their own time allotment without interruption (Danner & Fowler, 2015). A child's work cycle involves selecting an activity, performing the activity for as long as the interest level is there, cleaning up the activity and returning it to the shelf, only to select another activity (Debs & Brown, 2017; Lillard, 2014). During work periods, the teacher supports and monitors the students' work and provides individual and small-group lessons. The uninterrupted work period facilitates the development of coordination, concentration, independence and order, and the assimilation of information (Ansari & Winsler, 2014; Balain, 2013). In this study, the perceptions of teachers and administrators were gathered to determine the FOI of the kindergarten Montessori program in using the framework of the FOI theory.

Historic milestones in fidelity-of-implementation studies. An FOI study includes employees, programs, and products have been used in businesses as a means of reducing costs and maximizing profits (Free Management Library, n.d.). In an FOI study, the researcher analyzes if the components of the program are being implemented as

designed and if the objectives of the program are being achieved, so that appropriate feedback decisions can be made to support implementation of the innovation with fidelity (Zohrabi, 2012). An FOI study can provide ongoing assessment while an innovation is being implemented to provide formative feedback for refinement of the program (Spaulding, 2013). Summative evaluations in conjunction with an FOI study may determine whether a program should be continued or discontinued (Boulmetis & Dutwin, 2014; Posavac, 2015).

Public schools receive billions of dollars each year from federal and state agencies and educational foundations (Anyon, 2014, Bush, 2001). The educational agency's personnel hold schools accountable for the appropriate use of those funds (Kozol, 2012). With current financial restraints, schools cannot spend money on programs that are not achieving their goals (Berry, 2015). Higher education agency administrators have conducted state-level reviews of one type or another with most of these reviews maintaining the power to eliminate programs (Backlund, 2013). Enabling programs and policies to improve student learning is the goal of any educational evaluation (Zepke & Leach, 2010).

The initial major educational FOI study, *Equality for Educational Opportunity*, was conducted in 1996 and the evaluation included analyzing the impact of per pupil spending on educational performance. Backlund (2013) stated, "The assessment movement began in the 1970's as part of the national curriculum reform movement focusing on developing evidence that education (at any level) was actually meeting goals" (p. 247). An FOI study, often times referred to program reviews, began as part of

the movement of assessment and developed an integral merge into the educational system (Ellis, 2014; Williams, 2014). This FOI study was groundbreaking and proved that the amount of money spent by schools had very little or no effect on improving student achievement compared to the effects of socioeconomic status (Langbein, 2013). These data were in great contrast to the belief that all federal programs were successful (Cochran-Smith et al., 2009).

In order to develop common standards for educational evaluations for implementation, the Joint Committee on Standards for Educational Evaluation (JCSEE) was founded in 1975 (Wingate, 2014). The JCSEE is concerned with quality evaluations and the leaders at JCSEE have published standards for FOI, personnel evaluation, program evaluation, and student evaluation (Wingate, 2014). These standards are in place to provide stakeholders in-depth information in regards to content areas needing strengthening to support improved academic achievement and student success. The JCSEE property standards support proper conduct in the implementation of any FOI study or evaluation to emphasize responsiveness to all stakeholders, as well as focus on the expectations, needs, and cultural contexts in which the innovation is being implemented (JCSEE, 2014). The Government Performance and Results Act (GPRA) of 1993 required that all federal agencies were to produce annual reports showing how their activities assisted in achieving agency or government goals related to the JCSEE standards (Kingsbury, 2013).

A consumer-oriented evaluation seeks information to inform consumers about the products that are utilized so the consumer can make an informed decision. Program

evaluations are critical in ensuring change will occur within a program. Ross (2013)

identified "five types of evaluations for implementation": (a) objectives-oriented, (b)

management oriented, (c) consumer oriented, (d) expertise-oriented, and (e) participant-

oriented (p. 124). Objectives-oriented uses the explicit predetermined goals and

objectives of the program to assess the extent to which the program achieves goals.

Management-oriented "emphasizes the programs decision-maker's need for evaluation

results" due to effective decisions cannot be made without evaluations (Ross, 2013, p.

144). An expertise-oriented evaluation relies on the evaluator to use his or her expert

opinion about the worth of the program being evaluated. A participant-oriented

evaluation places the "emphasis on participants" (Kingsbury, 2013, p. 237). Because of

the five types of evaluations for implementations, stakeholders are presented with a

variety of decision-making objectives to access the program evaluated.

Stakeholder participation in the development process of the FOI study is a

valuable, yet challenging component for researchers (Tuckwiller & Childress, 2013).

Stakeholders are identified as "anyone who is involved in or affected by a course of

action" (Merriam-Webster, 2012, p. 117). Schools are no longer accountable to only

themselves. Schools are now accountable to students, parents, and the community. As

countries compete in the global marketplace, educational systems are being dissected for

the ability to enhance student learning beyond traditional limitations and into a

worldwide arena of lifelong learning (Ryan & Cousins, 2014). Acknowledging those

effected by the decisions of school leaders is an important factor for accountability and

stakeholder support for schools. Obtaining stakeholders' perceptions increases the

probability that FOI results, whether negative or positive, will more likely be received (Smith, 2013).

   Importance of understanding fidelity. Reviewing the FOI is vital for a variation of reasons, all of which are aligned to obtaining knowledge of how the value of implementation can be improved when data driven programs are discrete (Rogers, 2013). Primarily, the apparent potential of this of framework is that is can help determine accurately that detected results could be accredited to the conceptual or methodological keystones of a specific intervention (Cook, 2013; Dobson, 2014). An additional rationale for studying the FOI is that it is important to justify why programs flourish or fall short. Finally, an evaluation of the FOI permits researchers to identify areas that were modified in an agenda and how the modifications affect the solution. Fidelity can often be detected to influence not only key behavioral results, such as fundamental use, but could also provide data to support the modification of facilitating variable outcomes such as adaptations in attitudes and perceptions as well. Definitively, the FOI uncovers significant data in regards to the viability of an intervention, concentrating on how probable it is that the intervention will be executed with fidelity (Cook, 2013; Dobson, 2014). If it is problematic to attain the FOI in theory; a program has low viability. Waltz (2012) clarified programs that are executed with high levels of fidelity but do not succeed to create preferred effects may need to be revamped. A program or approach that is effective in other settings can be ineffective in another setting if the way it is being implemented takes it far away from its original design (Harn, 2013). The term used to describe the concept is FOI, which is the delivery of instruction in the way in which it

was intended to be implemented (North Dakota Department of Public Instruction n.d.). The FOI concept has received increased attention in recent years because evaluations of comprehensive school reform (CSR) programs found that, in general, schools implementing a CSR models experienced improvement in student achievement outcomes (Gunn, 2014). Wallace, Blasé, Fixen, and Naoom (2013) connected implementation to student learning due to "improved outcomes in education are the product of effective innovations and effective implementation efforts" (p. 213). Completing the FOI study in LISD1 provided all stakeholders with valuable information in regarding the implementation of the kindergarten Montessori program resulting in refinement of the Montessori program in LISD1.

Measuring fidelity. In the last decade and a half, investigators applied methods to gage critical elements of programs of prevention (Rogers, 2013; Weissberg, 2012). In the past, measuring the FOI has been difficult to implement, even with multiple methodologies for measuring fidelity since the mid-1980s (Brekke, 2012; Wolkon, 2014). There is no broad valid unvarying methodology for measuring fidelity and effective methods of program execution and diffusion are needed (Waltz, 2012). In part, the meeting of emerging measures involves not only meaningful perceptions to be measured, but also in emerging actions that can potentially be used for assessing fidelity aimed at interventions that vary distinctly in their methodology (Basch, 2014; Rogers, 2013). Overall, the FOI, using this model, is measured by observing the program in the following domains (Dane & Schinder, 2013): (a) adherence to the program, (b) dose, (c) quality of program content, (d) participant openness, and (e) program variation.

Adherence. To demonstrate knowledge of the program, participants must possess both critical as well as non-essential elements of the program's purpose and plan. McGrew (2013) argued that the initial step in measuring the FOI should be the evidence that identifies essential elements of efficient programs. The key approach for capacity may need to rely on examination verses self-reports (Rogers, 2013). Harachi (2013) indicated that a researcher should provide strong confirmation for the authenticity of researcher's evaluations of fidelity of implementation. For the functions of this study, adherence is clear as the extent to which implementation of specific activities and methods are constant with the way the program is designed.

Dose of delivery. Dose or the extensiveness of transfer of information does not cause apprehension in some research settings, primarily due to failure to convey a program may be exceptional in situations where programs are examined by researchers and conveyed by employees (Kinnunen, 2014). Yet, when an innovation is executed by non-research personnel, estimating dose may present crucial data about fidelity. Dose is well-defined as by volume of program subject matter received by participants (Harachi, 2013; Rogers, 2012). Similarly, in reference to the kindergarten Montessori program, participants receive thorough training in addition to continuous observations by trainers to ensure each participant has become comfortable in delivering of the Montessori curriculum (Ayer, 2016).

Quality of program delivery. Most programs involve collaborating strategies that influence members into gaining techniques or emerging detailed approaches and viewpoints in relation to the program being introduced (Tobler, 2013). These approaches

relied heavily on the innovation developer to proceed as an organizer and coach. Tobler

and Stratton (2014), recognized interactivity as a significant trait for productive program

interventions, which strongly suggested cooperative learning during program delivery to

provide opportunities for peer interaction for the opportunity for participants to gain

knowledge and examine viewpoints of all stakeholders.

  Participant responsiveness. Additionally, researchers have evaluated how

participants viewed their contribution in program implementation (Hansen, 2014;

Jordana, 2014; Peres, 2015). Hansen (2014) defined receptiveness as evaluations of the

range in which contributors are motivated by and participating in action and subject

matter of the new program. Simply by comprehending and estimating if an intervention

has been executed with fidelity will enable observers and practitioners obtain a better

understanding of why an intervention is successful, and the magnitude to which outcomes

could improve (Jordana, 2014; Peres, 2015).

  Program differentiation. With program differentiation, it is imperative to

advance beyond the normal evaluation process, which makes an attempt to clarify the

particular ways in which results were obtained and use the observed findings to

strengthen the program (Harachi, 2014). In the Montessori program, learning

opportunities are varied based on the needs of the learner (Lillard, 2013). This flexibility

to demonstrate the learner responses is considered as meeting one of the core components

of differentiation of responses as required in the kindergarten Montessori program.

Determining each program's uniqueness has been determined to be essential in

evaluating essential characteristics of fidelity of each program as this determines how

direct results relate to each specific program (Rogers, 2012). Program differentiation is well-defined as categorizing distinctive characteristics of different modules or innovations so that these modules or programs can be consistently differentiated from one another.

Relating fidelity to student outcomes. Educational researchers have conducted scientifically related studies of K-12 curriculum programs measuring the fidelity and implementation and empirically relating the outcomes to student performance, ensuring internal and external validity (Marsh, 2013; Sanger, 2014). Hill (2015) explained there were insufficient studies to guide researchers on how the FOI correlated to core curriculum inventions, which could be measured and connected to student data, particularly within efficiency and efficacy studies.

Several leaders in the field of psychology, program evaluation, and education have highlighted the importance of relating the FOI to student outcomes (Gesten, 2013; Gresham, 2014). Prior to the field of education advocating the consistent measurement of fidelity in schools, educators need to realize the effect of that implementing programs with fidelity could have on student outcomes as the cost of collecting fidelity data has internal and external effects (Zvoch, Letourneau, & Parker, 2012). Certainly, there have been researchers that have systematically documented fidelity and related these data to student outcomes. However, because of differing definitions of fidelity and differing methodology for measuring the construct, the findings have not been consistent and only a few studies of this kind have been completed (Perepletchikova & Kazdin, 2014). Some

researchers measure only surface/content dimensions of fidelity while some measure both surface/content and quality/process dimensions and both are measured in varying ways.

A few researchers that have systematically measured fidelity and related fidelity data to student outcomes are assessed in the following paragraphs. In the studies, both surface/content and quality/process dimensions have been measured in numerous ways on the continuum of complexity. Witt, Noell, LaFleur, and Mortenson (1997) conducted a single subject study that assessed the use of performance data to improve the FOI with which four general education teachers implemented an academic intervention. FOI requires teachers and administrators to collaborate to ensure RTI is implemented as intended and frequently monitored for effectiveness (Abry, Rimm-Kaufman, Larsen, & Brewer, 2013; Castro-Villarreal et al., 2014). To assess fidelity, permanent products were collected, and fidelity was calculated as the percentage of correct permanent products received divided by the total number of treatment steps for the day. This method was on the simple end of the continuum of complexity and measured surface dimensions of fidelity. The FOI is important because it measures whether teachers' practices are influencing student outcomes or if changes are needed (McKenna et al., 2014). Though the focus of this study was teacher behavior, the researchers found that their intervention improved students' academic performance and that higher levels of fidelity resulted in an increase in academic performance for three out of the four students.

Persampieri, Gortmaker, Daly, Sheridan, and McCurdy (2006) conducted two single subject research studies examining the influence of parent-delivered reading interventions on student outcomes. Within this study, the relationship between fidelity

and student outcomes was also examined. To measure fidelity in the first study, sessions were recorded on an audiotape and a researcher listened to 40% of the sessions. The researcher calculated the number of steps completed and divided that by the total number of steps on the intervention protocol. A sticker reward chart was also used as a measure of how often the intervention was implemented. In the second study, parent reports were used as the measure of fidelity. Parents were given a 15-step protocol and asked to record each step implemented. Parent-lead sessions were audiotaped and reviewed by a researcher. For three of the five subjects across the two studies, correct words read per minute, the outcome measure, decreased during weeks when fidelity was low. School administrators, support staff members and parents may only certify students improve academically by continuously monitoring the FOI of kindergarten Montessori program (Haring, McCulley, Solis, & Swanson, 2012; McKenna, 2014; Swanson, Solis, Ciullo, & McKenna, 2012). All of the methods for assessing fidelity employed in this study focused on the surface dimensions. Fidelity is important in the instructional, assessment, and delivery of any program framework (Gagnon et al., 2016). The sticker chart and the self-report measured indirect methods on the simpler end of the continuum of complexity.

Fidelity of Implementation (FOI) as a Program Evaluation

A FOI study begins with a definition of a program. A common distinction used to separate a FOI study from research is that fidelity studies are used for decision-making purposes, whereas research is used to build our general understanding and knowledge on a particular topic and to inform practice (Lodico, Spaulding, & Voegtle, 2012). An FOI study examines programs to determine their worth and to make recommendations for

programmatic refinement and success (Lodico et al., 2012). "An FOI study is a valuable tool for program managers who are seeking to strengthen the quality of their programs to improve outcomes for the children and youth they service" (Metz, 2015, p. 74). Fidelity evaluations may provide answers to basic questions about a program's effectiveness and evaluation data can be used to improve the program and provide insight into strengths and areas of concern.

Completing a FOI study required both an assessment phase and a problem-solving proposition to address the issues that may arise during the assessment phase. Researchers identified that the assessment phase would lead to the problem-solving phase or recommendations phase in, which specific actions would be made to stakeholders to bring the program implementation into alignment with the design (Metz, 2015). Royse, Thyer, and Padgett (2010) proffered the FOI study as an "aspect of professional training aimed at helping you to integrate research and practice skills, using the former to enhance the latter" (p. 101). The FOI should be evaluated by the procedure of progress monitoring, screening, and a decision-making procedure should follow (Fox, Veguilla, & Binder, 2014). When observing the fidelity of program, it is important that the school level administrators and teachers are involved in the process (Eagle, Dowd-Eagle, Snyder, & Holtzman, 2015). Teacher and school administrator perceptions of the effectiveness of the program affect the level of fidelity and the success of the program's implementation (Castro-Villarreal et al., 2014; Cowan et al., 2015; Eagle et al., 2015). Without monitoring the fidelity of implementing the kindergarten Montessori program and processes as it was intended, the program's implementation process could be

ineffective. Royse, Thyer, and Padgett (2010), also stated that the purpose of FOI studies

was to specify information that would improve the program and that without conducting

an assessment there could be no understanding of students' needs or services. The

concern and goal of implementing programs with fidelity as noted by Wright (2013) are

outlined in Table 2.

Table 2

Program goals and concerns

What we want to show:	What we want to know:
The students are being successful	Are the students being successful?
The program has a positive impact on student performance	Are all stakeholders satisfied with the Montessori program?
The Montessori program has worth	Does the program need revamping?
The program requires additional PD and resources	How can the Montessori program be improved?
Teachers are supported in the Montessori program	How are teachers being supported?

Note. Wright, E. (2013) Psychoanalytic criticism. Cambridge, MA: Routledge Press. p. 113.

To ensure a program's goals are being met with fidelity, additional and practical elements that affect the program must be in place to examine the core practices of the program. Leonard-Barton and Kraus (2013) suggested that "Many implementation efforts failed due to an underestimated scope or importance of preparation (p. 237)." Wright (2013 p. 114) shared the idea that stakeholders need to be proactive in asking these questions when evaluating a program:

1. Have the teachers been fully trained?

2. Have the teachers had time to discuss and practice the new initiative?

3. Have all administrators received training on how the initiative would look like in the classroom if implemented effectively?

4. Does the instruction observed fit the pattern of the effective content delivery of the new initiative?

Implications

The problem presented in this research study is the absence of FOI evaluation of the kindergarten Montessori program in LISD1. The FOI study was a pragmatic approach in which to increase the understanding of the level of implementation of the Montessori program with fidelity as designed (Metz, 2015). Based on the data obtained, a 3-day PD seminar has been designed to address the stakeholders' concerns regarding implementation of the program components, targeted PD, collaboration, support and materials, and need for administrative capacity building including technical support for implementation of the program. This study has the potential to result in positive social change, as it includes specific remediation to address the fidelity of implementation of the Montessori program as designed

Summary

Montessori and traditional education programs vary in several ways mainly in content delivery and educational approach. Incorporating physical environment, instructional methodology, and classroom atmosphere allows for varying strategies for content delivery (Lillard, 2014 p. 136). While Montessori programs have originally ended at the end of kindergarten, elementary Montessori programs expanded in the 1990s, and expanded implementation to middle and secondary programs which continue to slowly evolve in the program implementation (Seldin, 2013). When federal funding was discharged for magnet programs that permitted public funding for Montessori programs, the Montessori program initiation and implementation increased (Chattin-McNichols, 2010, p.158). Montessori programs have been found in a variety of traditional learning

environments, which has resulted in a divided learning environment in some settings (Lopata, 2011). At present, there are an estimated 200 Montessori-styled public institutions are now servicing students from infancy to 8th grade (North American Montessori Teachers' Association, 2013).

Teachers need preparation to implement the Montessori program to provide opportunities for student success, which develop the child for self-discovery and independence (Montessori, 1989). It is important to implement the Montessori program as designed (Lillard, 2013). This literature review helped me identify the key components of the Montessori program that supported the program implementation as designed which include: (a) Properly trained teachers, (b) Multi-age classrooms, (c) Proper use of Montessori materials, (d) Child-directed work, and (c) Uninterrupted work periods (American Montessori Association, 2013). In addition, this literature review helped me gain a better understanding of FOI theory and the relationship of FOI practices to correlate to the implementation of the Montessori program to support the fidelity of the program being implemented as designed (Yin, 2015). An FOI study involves systematically conducting a data-based inquiry into programmatic issues (Wholey, 2010). In fidelity studies, the researcher is examining if the program is implemented as designed. Kraus (2013) suggested that "Many implementation efforts fail due to an underestimated scope or importance of preparation (p. 152)." FOI permits researchers to identify areas that were changed in a program and how the changes affect the solution.

I gained insight into the elements of an effective implementation process through the application of the conceptual framework, implementation of science framework, as a

vehicle for analyzing the FOI of a program through the exploration of specific qualities of fidelity, which could lead to the adoption of new policies, programs, evidence-based methods, and/or intervention practices to support program implementation in the manner that was intended (Bumpus, 2016). In this framework, I applied the following elements to the implementation of the Montessori program: (a) interventions, (b) implementation methods, (c) enabling contexts, and (d) intended outcomes (Dunst, Raab, & Trivette, 2013; Fosnot, 2013).

The purpose of the qualitative evaluative case study was to determine the FOI of the kindergarten Montessori program as designed (Creswell, 2014). Research findings indicated that teachers perceive the need for targeted professional development, capacity building, administrative support, peer coaching the precise understanding of the Montessori program pedagogy and components, and relevant advanced Montessori materials. Overall, these findings have resulted in the development of a 3-day PD seminar for Montessori teachers and administrators to address the findings and stakeholders' reported needs and concerns.

In Section 2 of this project study, I described the methodology, which includes a description of the research design and approach, the setting and sample, instruments and materials, data collection and analysis, assumptions, limitations, delimitation, measures taken for the ethical treatment of participants, and the logical and systematic outcomes will be discussed.

Section 2: Methodology

The purpose of this study was to determine the FOI of the Montessori program to refine the Montessori program implementation at the study site. This section of the doctoral project study contains details about the qualitative methodology used for this study. In Section 2, a clear description of methods for data collection analysis was listed. Data obtained through the study resulted in findings that may be used to reduce the gap in educational practices identified for the purpose of this project study.

The qualitative research design involves developing a deep and outlined comprehension of a phenomenon through exploration of a problem (Creswell, 2014). Unlike quantitative studies, qualitative studies encompass data collection based on words from a small number of participants to investigate individuals' viewpoints in relation to the extensive research problem (Creswell, 2012). The qualitative approach was applicable for this study because the overarching goal was to acquire and analyze the perceptions of individual teachers and principals in regard to the implementation of the kindergarten Montessori program by conducting a formal FOI study. Qualitative researchers collect data through observations, interviews, and document analysis and summarize the findings through narrative or verbal means (Lodico, Spaulding, & Spaulding, 2010). A FOI study is used for decision-making purposes, and research is used to build general understanding and knowledge of a particular topic and to inform practice. In general, FOI evaluation is used to examine programs to determine their worth and to make recommendations for programmatic refinement and successes (Lodico et al., 2012). Qualitative research designs including grounded theory, narrative study, phenomenology, ethnography, and

case study (Creswell, 2014) were researched and carefully considered for their suitability for answering the specified research questions. The qualitative research design became the most suitable choice to use in this study due to information being analyzed and conveyed through language (Creswell, 2012). The participants in this study expressed their beliefs, values, feelings, and motivations that underlie their participation in the Montessori program.

The absence of Montessori program fidelity data left the district administrators without empirical evidence regarding program effectiveness. The following research questions were used to address the problem and to support the goal of the study, which was to determine how the Montessori program was being implemented with fidelity and to refine the program implementation:

- RQ1: How do teachers and administrators perceive the fidelity of implementing the kindergarten Montessori program as related to (a) effective interventions, (b) implementation methods, (c) enabling contexts, and (d) intended outcomes at the study site?

- RQ2: How are teachers observed to implement the kindergarten Montessori program as related to (a) effective interventions and (b) implementation methods at the study site?

- RQ3: How is the implementation of the Montessori kindergarten program reflected in archival documents such as lesson plans and campus and district PD plans at the study site?

In Section 2, I discuss the method used to determine the findings to answer the research questions. I conducted a FOI study on the kindergarten Montessori program in LISD1 by focusing on observations, archival data, and interviews. Observations provided data in regard to the behavior and instructional strategies of teachers and district administrators of the Montessori program (see Creswell, 2014). Obtaining archival data assisted me in identifying trends and provided opportunities to track data. Through interviews, I was able to determine how administrators and teachers perceived the Montessori program's effectiveness, as well as gain knowledge on needed PD and perceived professional self-efficacy regarding implementation variations of the Montessori program (see Creswell, 2014). In addition, in Section 2 I discuss sample procedures, data collection, and data analysis methods.

Research Design and Approach

I constructed this study using the qualitative approach that supported the need for empirical data on the effectiveness of the kindergarten Montessori program in LISD1. This method allowed for an interpretation of data provided by classroom observations, semistructured interviews with teachers and administrators, and archival document review as recommended by Creswell (2014). Qualitative methods are an effective methodology for program evaluations as stories and perceptions can be captured directly from program participants allowing a researcher to draw conclusions that will enhance program effectiveness (Patton, 2013). The ability to gain perceptions from teachers and administrators supported the rationale for using a qualitative research method.

Grounded theory was considered and rejected due to this theory being used when "the researcher attempts to originate a general, abstract theory of process, action, or interaction grounded in the view of participants in a study" (Creswell, 2010, p. 217). The purpose of a grounded theory study is to generate a theory (Creswell, 2014). Data are constantly reviewed and examined for repeated occurrences eventually leading to the development of a theory (Hatch, 2014). I did not seek to produce a theory based on the results of data analysis; therefore, grounded theory was not deemed suitable for this study.

The narrative design was also considered but rejected as not ideal for this study. Narrative methodology enables a researcher to tell the chronological life story of an individual according to his or her life experiences (Creswell, 2010). This design includes stories to describe the experience (Merriam, 2014). Usually a narrative design is used to tell the story of one or two individuals. However, because I was seeking information from more than one or two participants, I determined the narrative design was not a good choice for my study.

I also considered a phenomenological design for my study. This approach is appropriate only when the researcher is concerned with describing the human experience of a phenomenon (Creswell, 2012); therefore, the phenomenological design was not chosen for this study. According to Merriam (2014), the focus of thorough phenomenological studies is on the essence or structure of an experience. The phenomenological design is used to describe the lived experiences of a group of people rather than just an individual or two, as in narrative designs (Creswell, 2014). The

phenomenological approach focuses on how others interpret and experience various situations. After further consideration, I concluded that the phenomenological design was not appropriate for my study.

Whenever a researcher seeks to identify the collective patterns of conduct, beliefs, and language among a complete cultural group, an ethnographic design is appropriate (Creswell, 2014). An ethnographic study's primary purpose is to study human society over an extended period of time yielding findings that inform readers how to behave when they are present in the culture of study (Merriam, 2014). Ethnographic studies include multiple techniques such as participant observation, field notes, interviews, and artifacts to describe the shared culture of a group (Hatch, 2014). The researcher seeks to understand cultural phenomena that affect the knowledge and system of meanings guiding the life and culture of a specific group. I determined that this research design was not an appropriate for my study because I was not seeking to examine the culture of a shared group.

Fidelity is measured in research settings for a variety of reasons. At a basic level, fidelity is measured to ensure that programs are implemented (LeLaurin & Wolery, 1992; Orwin, 2013). In addition, documenting and measuring fidelity aids in demonstrating internal, external, and statistical conclusion validity as well as increased statistical power and effect sizes (Gresham, 2013). Orwin (2012) explained that measuring fidelity allows researchers to determine whether the study was a good test of how a program should work. When conducting research, the purpose is to document that the changes in the dependent variable (e.g., the program participant) are due to manipulation of the

independent variable (e.g., the Montessori program) (Montessori, 1985). In fidelity

research, the researcher is seeking to show that there is an operational relationship

between the independent variable and the dependent variable (Peterson, Homer, &

Wonderlich, 2013). Peterson (2014) and Gresham (2013) both cautioned that observation

of only the dependent variable does not allow a researcher to account for all of the

variability in the dependent variable; assuming that a stable dependent variable indicates

stable implementation of the independent variable is not always accurate. Furthermore,

different aspects of a program must be evaluated to gain an accurate assessment of the

program's effectivness (Peterson 2014). I used the qualitative research design to collect

data from interviews, classroom observations, and archival data to examine the

perceptions and experiences of teachers and administrators regarding the kindergarten

Montessori program. These experiences helped me develop best-practice

recommendations that I presented in a PD project. Conducting the FOI study provided

data that supported the need for additional PD to enhance teachers' and administrators'

knowledge of the Montessori philosophy.

Participants

Population and Sampling

The setting for this FOI study was a public school district, LISD1, in an urban

Texas town during the 2016-2017 school year with a student population of 8,601. The

enrollment included 550 PK, 710 kindergarten, 762 first grade, 2,639 Grades 2-5, 1,850

Grades 6-8, and 2,074 Grades 9-12. The district data for low socioeconomic status

indicated 6, 012 students (69.9%). The district contains seven elementary schools, three

middle schools, one high school, one alternative education campus, and one early childhood center. Table 3 shows an outline of the district's ethnicity count and socioeconomic status.

Table 3

District ethnicity count and socioeconomic status

Ethnicity	District count	Percentage
African American	3,328	38.7%
Hispanic	3,040	35.3%
Caucasian	1,814	21.1%
American Indian	51	0.6%
Asian	111	1.3%
Pacific Islander	14	0.2%
Two or more races	243	2.8%

Note. Adopted from LISD1 District Demographic Data (2013-2016).

A qualitative study has a restricted sample size as data are collected within a precise time frame (Creswell, 2014). In convenience sampling, the researcher uses subjects who are convenient and readily available (Goodwin & Goodwin, 1996). There is a concern associated with this type of sample, which is inherently biased due to the fact of the unknown representativeness of the sample (Goodwin & Goodwin, 1996). The aim of the study was to complete a FOI study to determine if the Montessori program was being implemented as it was originally designed. I used convenience sampling in this qualitative study inviting a total of 10 Montessori teachers and administrators, which allowed me to collect data regarding the teachers' and administrators' diverse experiences in relation to the Montessori method.

Criteria for Selection of Participants

        Eight Montessori pre-K/kindergarten teachers and two administrators were selected via convenience sampling. The key criteria for selecting participants were as follows: (a) teachers and administrators must be assigned to grades Montessori pre-K/kindergarten, (b) teachers must have teaching experience over 5 years, and (c) teachers must have 2 or more years of teaching experience the Montessori program. The data in Table 4 provides a summary of the demographics of the participants included in the semi-structured interviews.

Table 4

Basic demographics of participants

Participants	Gender	Years of experience teaching Montessori	Job Classification
Participant 1	Female	6	Montessori Teacher
Participant 2	Female	10	Montessori Teacher
Participant 3	Female	12	Montessori Teacher
Participant 4	Female	3	Montessori Teacher
Participant 5	Female	4	Montessori Teacher
Participant 6	Female	8	Montessori Teacher
Participant 7	Female	11	Montessori Teacher
Participant 8	Female	7	Montessori Teacher
Administrator 1	Female	7	Administrator
Administrator 2	Female	12	Administrator

Note. Adopted from LISD1 Staff Demographic Data (2015-2016).

Participant Justification

For this project study, 10 participants were chosen. The participants varied in

years of experience in being a teacher in the field of education and teaching in the

kindergarten Montessori program. The differing participant groups presented rich data for

the project study. The number of participants and the years of experience each participant

possessed added a balance and depth of inquiry to the research (Creswell, 2012). The

teacher participants provided teacher perceptions and the administrator participants

provided insights as an administrator for the kindergarten Montessori program. In

keeping my sample small, I was able to engage in greater analysis with each participant.

Access to Participants

Following communication with me, the assistant superintendent in the department

of administrative pupil services of LISD1, approved access to invite participants to

engage in my study. I obtained a letter of cooperation from the study district, verifying

the permission given by the district to support this project study (Appendix). After obtaining permission from Walden University's Institutional Review Board (IRB) approval 04-04-17-0085673, I emailed a letter of informed consent and invitation to participate to all participants. I sent an introductory email to the participants introducing myself as the researcher and informing them that they were not obligated to participate in the study and could withdraw at any time. Participants responded to me indicating their interest in participating through their personal email addresses.

Researcher-Participant Relationship

During data collection for this study, I worked to develop a researcher-participant relationship to safeguard all individuals so that each participant felt comfortable sharing their perceptions and beliefs with me (Merriam, 2014). At each stage of data collection, I utilized strategies that were designed to promote a safe environment where participants felt respected and valued for the information they bought to the study (Creswell, 2014). The letter of informed consent was clear about the purpose and nature of the study, the reason why they were asked to participate, and how the data analysis results would be shared with all participants. The protocols put in place for the interviews were respectful of the time and expertise of each participant (Maxwell, 2013). The nature of intentional district-wide sampling was to gather the richest collection of data utilizing a sample that provided key data for the project study (Merriam, 2014). This ensured that participants understood their knowledge and background knowledge was relevant and vital to the topic being studied. Protocols with assigned numeric pseudonyms were used to guarantee confidentiality for all participants.

Protection of Participants

Each participant knew that participation was voluntary and that overall protection, well-being, and discretion was a priority throughout the duration of this study. In August 2015, I completed the web-based training *Protecting Human Research Participants*. This research study had a minimal risk level to the participants, as none of the participants have ever worked for me (Creswell, 2014). However, some participants were colleagues as I was an employee for LISD1 from 2004 to 2014. If a potential participant decided not to participate, there was an option on the consent form which they could have indicated their choice in not wanting to participate in this project study, providing no further information. Randomly assigning each participant a numerical pseudonym prior to conducting any interviews or observations was completed to primarily protect the participants' identities prior to, during, and after data collection when the findings of the project study was reported (Creswell, 2014). Only I had knowledge of the true identities of each participant within the project study.

Overall, the welfare, safety, and privacy of each participant took precedence throughout the project study (Merriam, 2014). In addition, all data processed electronically was housed in a password-protected file on my personal computer. The files were encrypted to guarantee that in the unlikely incident that my computer would become lost, damaged, or stolen. The data was secure due to the use of codes; a third party would not be able to comprehend (Creswell, 2014). All nonelectric data was stored securely in a secure desk located in my home office. The data will be kept secure for 5

years, per the protocol of Walden University. After 5 years have expired, I will destroy all data.

Data Collection Methods

When considering the data collection methods for this case study, data collection was central in exploring the perceptions of teachers in regards to the Montessori program. The data for the project study consisted of non-participatory observations, teacher and administrator semi-structured interviews, and review of district archival documents that were provided to me by the participants and LISD1 (Creswell, 2014). The district data I analyzed were: (a) lesson plans, (b) a list of the participants' current competed professional development /training logs formal an informal, and (c) all discipline documentation. I fully understand the district data obtained did not allow me to explore teachers' perceptions; however, the documents obtained (i.e. lesson plans and discipline documents) provided information in regards to the in-class learning activities that may or may not have led to student success.

Table 5 provides a snapshot of the study's research questions and the data sources that were used to satisfy answers to each question.

Table 5

Research questions and sources of data

RESEARCH QUESTIONS	SOURCES OF DATA
1. RQ1: How do teachers and administrators perceive the fidelity of implementing the kindergarten Montessori program as related to: (a) effective interventions, (b) implementation methods, (c) enabling contexts, and (d) intended outcomes, at the study site?	Data evidence that supported the research question came from teacher and administrator interviews.
2. RQ2: How are teachers observed to implement the kindergarten Montessori program as related to: (a) effective interventions, and (b) implementation methods at the study site?	Data evidence that supported the research question came from teacher and classroom observations.
3. RQ3: How is the implementation of the Montessori kindergarten program reflected in archival documents such as lesson plans, and campus and district PD plans at the study site?	Data evidence that supported the research question came from classroom observations, teacher interviews, administrator interviews, and archival data.

Interviews

According to Yin (2014), data collected via interviews provide the most important

sources of information that cannot be gathered during observations. Creswell (2014)

maintained an additional advantage of conducting interviews is the researcher is able to

control and structure the information that is gathered. A disadvantage of conducting

interviews is the information will be disseminated through the lens of the researcher,

which leads to uncertainties as to whether the individual being interviewed is providing

responses that are honest and whole versus providing responses that may be what the

researcher wants to hear (Creswell, 2012). However, conducting interviews immediately

prior to completing classroom observations afforded me the opportunity to potentially

minimize dishonest or incomplete participant responses, as some interview questions

referenced instructional methods and behaviors that were observed.

For this study, I conducted one-on-one interviews with eight teacher participants

in their classroom during non-instructional periods. The two administrator interviews

occurred at a place and time agreed upon to satisfy their varying schedules. All

administrators preferred to have the interview conducted in their individual offices.

Teachers opted to conduct their interviews in their classrooms during their planning

periods. Utilizing data from various semi-structured interviews allowed me the ability to

associate and bring to light the insights of each participant (Creswell, 2014). Having

numerous respondents increased the accuracy of the research study due the information

that came from more than one individual (Yin, 2014). In addition, conducting semi-

structured, one-on-one interviews allowed me the opportunity to ask open-ended

questions based on the observations to solicit responses that were specific to the purpose

of this project study.

The semistructured interviews were guided by a pre-established list of open-ended

questions. The interviews were scheduled via email prior to the observations at a

mutually agreeable date, time, and location for each participant. For administrators, an

email was sent to agree upon a date, time, and place for the scheduled interview. It was

my aim to establish a rapport and provide a general introduction through conversation

prior to conducting the interviews. Semi-structured questions afforded me the ability to

ask the questions in any order I deemed appropriate, based on scheduled observations (Merriam, 2014).

Two educational experts (Director of Early Childhood Curriculum and Instruction for Montessori Education and an English Language Arts Curriculum Specialist) were asked to appraise and deliver feedback concerning the quality of my interview questions in seeking teachers' perceptions in relation to the research questions of this project study. According to Simon (2011), using an expert review panel to review the data collection instruments, including the interview protocol, not only increased validity and reliability, but also is a primary evaluation strategy among researchers. One expert, the director of early childhood curriculum and instruction for Montessori education, had over 25 years in teaching and administrative experience within the local public-school systems, including LISD1. The director of early childhood was selected for inclusion on the expert panel due to the experience and being highly knowledgeable in Montessori Education. The second expert had nearly 20 years of experience in aligning differentiated curriculum and ensuring teachers follow all state standards when implementing curriculum. I emailed both experts information regarding the background of the problem of the study, including the problem statement, in conjunction with the interview protocol, to follow as a guide so that revisions of my interview questions could be effectively and efficiently edited.

To the best of their knowledge, I asked each participant when reviewing the interview questions to consider the following areas:

- clarity,
- potential use of jargon,

- biased questions,

- whether the questions related to Montessori Education as it relates to
  transition,

- wordiness,

- relevance,

- potential risks of duplicate responses,

- the appropriateness of technical language,

- whether the questions were sufficient in order to resolve the proposed problem
  of the study, and

- whether the questions were sufficient in order to respond to the research
  questions proposed within the project study.

The expert review panel did not have any revisions for the interview questions.

Observations

Conducting observations allows a researcher to watch each participant within the
natural setting (Creswell, 2014). Merriam (2014) noted that an advantage to conducting
observations is that an individual who is considered an outsider will "notice things that
have become routine to the participant" (p. 178). An additional advantage of conducting
observations is to observe behaviors that might emphasize or support a response from an
interview (Merriam, 2014).

For the purpose of this study, eight Montessori non-participatory observations
were conducted, for a time period of approximately 60 minutes. Within each participant's
classrooms I observed teacher behaviors and instructional strategies as they related to the

Montessori program. Prior to the observations, the teacher and I agreed on an arrival time and a place I was to be stationed within the classroom, thereby ensuring I had the best viewing advantage of the classroom instructional methods and behaviors with little to no disruptions.

In order to maintain the confidentiality of each participants' identity, each participant was randomly assigned a numeric pseudonym upon completion of the informed consent process. This method of assigning numeric pseudonyms was to ensure that in the event that any participant was somehow made aware of whom and when a fellow participant will be observed or interviewed, the numeric pseudonyms were merely an assignment of the order in which the participant would be interviewed and observed.

Archival Documents

Additional data in the way of archival data documents were requested from each participant and LISD1. Archival documents also provided a richer source of information that increased validity observational and interview data (Creswell, 2014). The requested archival documents requested from the research participants were: (a) Current and previous Six Weeks grading periods' lesson plans for the school for all core academics and (b) A list of completed PD or trainings completed during the years of 2011-2014, whether formal or informal. I fully understood that lesson plans and PD documentation revealed evidence of the strategies gained from the trainings that were potentially used in classroom instruction. The archival documents presented data regarding the teaching practices, strategies, and PD experiences which provided data to support research question three and facilitated triangulation of the interviews, non-participatory

observations, and archival documents provided additional insight on the supports needed to ensure the FOI of the Montessori program components (Creswell, 2014). Alternatively, each participant provided an electronic and/or paper copy of their archival documents to me at the time of their scheduled interview.

Once the archival documents were received, I de-identified each document so that names of participants and the specific school within the district the participant worked would not be contained in the documents. I examined each of the archival records for completeness and usefulness (Creswell, 2012; Merriam, 2014; Yin, 2014). After the examination of interview data were triangulated with observational and archival documents to determine the fidelity of the Montessori in LISD1.

Case study research is a form of qualitative investigation that endeavors to determine meaning, to explore processes, and to gain understanding into and in-depth understanding of an individual, group, or situation (Lodico et al., 2010). The triangulation of data including interviews, observation, and archival documents helped to determine consistency in the findings of the various data sources. The conversations with the participants included a reiteration of the purpose of the study, the research processes, and approaches to protect privacy continuing to build on the trust of the researcher-participant relationship. It was important for the participants to understand how all identifying information, such as names of schools and participants would be kept confidential in order to safeguard confidentiality and promote candid responses. In addition to protecting confidentiality, participants were reminded that their participation is strictly voluntary and that they may choose to extract themselves from the study at any time, without

consequences (Merriam, 2014). The semi-structured nature of the interview questions allowed the participants the flexibility to respond to the questions that did not solicit yes/no only questions (Creswell, 2014).

Sufficiency of Data Collection Instruments

Appropriate instrumentation is crucial to a study (Creswell, 2014). Qualitative studies characteristically employ open-ended questions, non-participatory interviews, observations, as well as text and image analysis (Creswell, 2010). In this study, I utilized observations, conducted semi-structured interviews, and utilized public artifacts and documents from the district. Observation protocols were utilized to aid and guide the assembly of data in a methodical and focused manner (Creswell, 2014). To record the data from the observations, a recording sheet was used to write field notes, which are written descriptions of what the researcher observes in the field (Lodico et al., 2010). Interview protocols were also used to provide a brief script for an explanation of the purpose of the study to the interviewee and the preliminary questions used in the interview (Lodico et al., 2010). The instruments used in qualitative studies are usually gathered in the form of words, pictures, or both being used in a systematic process that allows for thick descriptions of the phenomena being studied (Lodico et al., 2010). Choosing an instrument that is dependable, valid, and applicable for the population being studied is a critical part of the realization of the entire study (Creswell, 2014). Nonparticipatory classroom observations were conducted, and each observation yielded unbiased, rich in detail, pertinent data correlating to this study in relation to how classrooms are facilitated and how the Montessori content is being delivered. Interviews

consisted of the researcher asking semi-structured interview questions. Creswell (2009) noted that researchers must consider a variety of methods and sources to gather and record in-depth, comprehensive information for a case study. To record the data, I utilized field notes for both observations and interviews. In reference to interviews, I opted to record each participant's interview to preserve the integrity of the interview while taking field notes (Creswell, 2014). During the data collection process, I kept reflective journals to track data and emerging understandings.

System for Keeping Track of Data and Emerging Understanding

The data collected for this project study were interviews, observations, and archival documents. Twenty-four hours after the conclusion of each interview, I transcribed, verbatim, all interview data so that an electronic case study database of the data could be coded easily, analyzed, and stored or retrieved post research (Merriam, 2014). Participants were asked to provide archival documents (lesson plans from the current and previous Six Weeks grading periods and professional development records pertaining to Montessori training) to me during their personal interview. Twenty-four hours after the conclusion of each non-participatory classroom observation, I electronically recorded the data in a narrative format on my personal computer within a case study database so that the data could be easily coded, analyzed, and properly stored in a locked cabinet for post research. After which, I carefully read and categorized the typed transcriptions to gain familiarity with the data so that categories and themes were identified. Once the categories and themes were identified, I tallied and coded the data gathered during the interviews and observations (Creswell, 2014). In addition, I included

personal reflections and field notes written during each observation and interview under

each category and theme (Merriam, 2014). To eliminate any biases, archival

documentation, and interview data were triangulated to corroborate, increase the accuracy

and credibility, and reduce researcher bias of the observational and interview data.

Procedures for Gaining Access to the Participants

I used a convenience sample of teachers and administrators from one study site,

LISD1, to conduct the interviews and non-participatory observations. I initially sent all

potential participants the invitation to participate letter via email from my Walden

account to their school-based email requesting that the participant indicate their interest

in the study by responding through their personal email to ensure confidentiality for

communication during the research process. Once I received the potential participants'

personal email indicating an interest in the study, I electronically distributed the informed

consent document to each potential participant by sending the informed consent

document to each participant's personal email.

Once the participant sent a response from their personal email indicating consent

to participate in the study, I proceeded to contact the potential participant via their

personal email to schedule an interview lasting approximately 60 minutes. I followed up

with the participant after scheduling the interview by confirming the date, time and

location of the interview and electronically distributed the pre-interview self-assessment

form. The potential participant had the option to complete the pre-interview self-

assessment form and submit the form to my Walden email from their personal email or to

submit the completed pre-interview self-assessment form at the scheduled interview. I

utilized a readily available classroom and/or office within the school, mutually agreed

upon by the participants, to conduct the interviews. All interviews were conducted in a

quiet and private location and did not exceed 60 minutes. Observations took place at a

mutually agreed upon date and time in the teachers' classroom and did not exceed a 60

minute class period.

Role of the Researcher

As the researcher of this study, I was employed by LISD1 as a teacher for 10

years. I am no longer employed by LISD1. Within LISD1, I taught traditional first grade

for one year and kindergarten Montessori for 9 years. Taking on the role of the

researcher, it was impossible to completely immerse myself into the data collection and

not become affected (Corbin & Strauss, 2015). This experience provided a perception and

comprehension that could enhance the kindergarten Montessori program. To control

potential bias and probable problems due to preceding relationships with teachers, no

teachers were chosen with whom I had a previous acquaintance. I was able to minimize

the influence of my experiences and biases more and more during each interview

conducted by acknowledging each participant within a personal research journal. Corbin

and Strauss (2015) maintained that keeping a personal research journal allows a

researcher to acknowledge any prejudices prior to, during, and post data collection. A

personal research journal "provides a record of the thoughts, actions, and feelings that are

aroused during the research" (p. 102). After the completion of each interview, I again

recorded my thoughts and potential bias which, allowed me the opportunity to

consciously acknowledge any thoughts, actions, feelings, and potential biases I perceived during the data collection process.

Physical influences, such facial expressions, tone, or body language was minimized by keeping my body language neutral while looking each participant in the eye during the interview. In addition, I decreased possible biases by showing interest in their responses without interjecting my personality into the interview responses and maintaining a normal, polite conversational tone delivering each question and probe (Merriam, 2014). I was sure to respond, "Thank you for your response to that question," after the participant completed a response to an interview question and probe. Remaining consistent with my responses and maintaining pleasant and neutral facial expressions did not indicate approval or disapproval of any responses provided by the participants and minimize any biases resulting from physical influences.

Lastly, in an effort to create a comfortable environment, I built rapport with each interviewed participant prior to asking any research questions. This particular bias was minimized by using brief, introductory conversations not related to the topic of my project study. This gradual approach prior to beginning each interview was consistently executed so that I did not mistakenly influence the participant by giving any personal opinions about any aspect of my project study (Creswell, 2014). It was my aim to successfully minimize any and all biases by not asking questions that might relate to the project study topic during the brief introductory conversations with each participant. Ensuring that any potential biases were reduced was particularly critical during the data analysis stage of my project study.

Data Analysis Methods

An essential component of any research study is data analysis (Creswell, 2012; Hatch 2002; Yin, 2014). Creswell, Hatch, and Yin maintained that data analysis allows the researcher to gain a deeper understanding of the data, particularly qualitative data, in order to effectively communicate the findings with others. According to Hatch (2002) and Yin (2014), interview questions should be written in a manner to solicit direct responses to the research questions, so participants will not be likely to divulge more information than needed. The researcher is then able to use the inductive process of coding the rich, in-depth information into categories and themes (Creswell, 2012; Hatch, 2002; Yin, 2014).

The data analysis for this project study was to use specific analytic techniques of coding and categorizing the interview, observational, and archival data. A general inductive approach was to analyze the collected data. The inductive process was an important characteristic when analyzing qualitative data in an effort to adequately explain the central phenomenon (Merriam, 2014). Using a general inductive approach to analyze these data was straightforward, efficient, and allowed me to determine which data were important or not important (Thomas, 2008). As a new researcher, I felt it was critical to revisit these data after each interview to confirm that the collected information was not influenced by my own thoughts or feelings.

The first step in the inductive process was to prepare the data for coding. Prior to the coding process, the interview and observational data were transcribed, verbatim, into a Microsoft Word document on my laptop. The timeframe for transcribing the data for

this study was completed within twenty-four hours of the interview. Transcribing the data

created a clean, organized copy of the raw data (Thomas, 2008). Once the transcribing of

data was complete, to ensure accuracy and increase validity of the interviews, each

participant was asked via email, to member check the transcribed interview and inform

me if he or she would like to correct, or elaborate on any responses provided during the

original interview. None of the participants wanted to revise any responses. "Member

checking is one quality control process by which the researcher seeks to improve

accuracy, credibility, and validity of the data obtained during the interview process"

(Creswell, 2010, p. 113). The completion of the member checking process improved the

chances of recording true authentic data.

Initial themes and categories that emerged related to setting, perceptions of

teacher support (PD, administrative, and teacher collaborations), teachers' perceptions of

student success, teachers' observations of student discipline, and teachers' views of

strengths and barriers regarding the kindergarten Montessori program. While it is

essential to collect enough data to provide a clear understanding of the participants'

perceptions, it is as important to have a system in place to focus understanding and to be

able to communicate an explanation of the patterns and themes in the found in the data

(Gläser & Laudel, 2013). Once the categories were identified, I searched for themes,

patterns, and relationships within the data. I then tallied and coded the observational and

interview data into themes under category within each research question. In a separate

column within the spreadsheet, I included any personal reflections and field notes written

during each observation and interview. The archival data was triangulated to corroborate,

increase the accuracy and credibility, and reduce researcher bias of the observational and interview data. I then emailed each participant the findings to review for accuracy and validate my interpretations. Participants did not know the numeric pseudonym they were randomly assigned.

Interviews

Each interview was recorded using a hand-held recorder and then transcribed into a Word document. An interview protocol was used as a script for the questions being asked. Interview protocols are used to clarify the purpose of the study to the interviewee, and the preliminary questions to be used in the interview (Lodico, Spaulding, & Voegtle, 2010). I reviewed and color-coded each transcript: pink highlights indicated a response referring to implementation of the Montessori program including non-participatory classroom observations, green indicated PD information and the perceptions of the Montessori program, and yellow referenced supports from campus and district leaders. All highlighted comments were copied and pasted to three different spreadsheets, allowing me to group all information about each of the three research questions together. I reviewed each spreadsheet multiple times to determine themes and common threads through the data. Data were then sorted by themes.

Observations

All non-participatory observations were completed using the Observation Checklist. A well-developed checklist helps avoid errors by clearly describing the different types of questions to be recorded (Creswell, 2012). When conducting non-participatory observations, the primary goal is to gather data that are accurate and

naturalistic and, to the greatest extent possible, that reflect the reality of the situation as the participants see it (Lodico et al., 2010, p. 253). From non-participatory observations and the data recorded on the Observation Checklists, a spreadsheet was made after I tallied the Montessori Components that were observed and not observed. "The purpose of such checklists was to provide a level of rigor to the data collection process and ensure that these data were reliable and valid" (Lodico et al., 2010, p. 247). After reviewing the Montessori Components, I then coded the components by color for organizational purposes. The Montessori Components were incorporated into the Observation Checklist to help the observer identify the essential elements needed in an effective Montessori classroom. The Montessori Components observed were coded with "O" and the Montessori Components not observed were coded as "NO".

Accuracy and Credibility of Findings

For this project study, member checking was used to validate the accuracy of my interview data and findings. Member checking was also utilized once during the data assembly stage and once during the data analysis phase. During the data collection stage, I emailed each participant a transcribed copy of their interview. Each participant was instructed to read the transcribed interview and notify me if he or she wished to revise, change, or omit any responses (Creswell, 2012). My goal, as Creswell (2014), noted, was to ensure that my interpretations of the participants' personal reflections and views were accurately portrayed within the final report of the project study. It was important that the participants review data collected from them individually for accuracy and review the draft research findings and be given the opportunity to share any concerns (Glesne,

2011). This provided assurance as to the accuracy of the data collected in the interviews. The participants had no revisions after reviewing their individual confidential interview transcriptions were completed.

Qualitative research is an inductive method, which means various pieces of data are gathered and gradually joined or related to form broader, more general descriptions and inferences (Bogdan & Biklen, 2007). Data organization and preparation included categorizing data into chronological order to specify time periods in which data was collected. Interviews were transcribed verbatim, although time-consuming, results are accurate. The data were coded by common code names and code categories for analysis.

Another method used to increase overall credibility and validity of my project was triangulation of multiple sources of data (Creswell, 2012). For this study, data collected from observations, interviews, and district documents were triangulated. Merriam (2014) suggested that multiple data collected in qualitative studies are triangulated to increase credibility and validity of research studies. Data triangulation allowed me to check observational data interview data against relevant district data to this project study's central phenomenon (Creswell, 2012). Member checking was utilized to validate the accurateness of the interview and results after the research is conducted. In dealing with discrepant cases, literature and valid findings supported this study.

Discrepant Cases

Dealing with discrepant cases was highly possible with a total of 29 potential participants. According to Gast and Ledford (2014), discrepant cases include data that are considered to be outliers or hold inconsistencies with the initially identified themes or

categories. Although discrepant cases might provide contrary evidence regarding the perspectives in relation to the central phenomenon (Yin, 2014), it is suggested by Silverman (2011), for the researcher not to completely exclude the alternative perspectives rather place a focus on those perspectives. Discrepant cases did not emerge in my project study.

Data Analysis Results

The purpose of this project study was to determine the FOI of the kindergarten Montessori program as designed, so that results from the FOI study could be used to refine the Montessori program implementation at the study site. The problem the study addressed is that the study district implemented a kindergarten Montessori program in 2004, but the district leadership has not evaluated the program in terms of FOI and whether the program was successful in meeting the needs of the students. A qualitative research approach was implemented to answer the following research questions:

RQ1: How do teachers and administrators perceive the fidelity of implementing the kindergarten Montessori program as related to: (a) effective interventions, (b) implementation methods, (c) enabling contexts, and (d) intended outcomes, at the study site?

RQ2: How are teachers observed to implement the kindergarten Montessori program as related to: (a) effective interventions, and (b) implementation methods at the study site?

RQ3: How is the implementation of the Montessori kindergarten program reflected in archival documents such as lesson plans, and campus and district PD plans at the study site?

Participants were purposely selected from the study district. There were approximately 10 participants (eight kindergarten Montessori teachers and two district administrators). This studied relied on data collected from individual interviews, classroom observations, and archival data (lesson plans and PD dates and plans), to answer research questions. All of the participants were available for individual interviews; however, some dates were rescheduled due to last minute scheduling conflicts for one of the district administrators. All participants had the opportunity to share their opinions and perceptions about the fidelity of the kindergarten Montessori program. In an effort to examine how teachers' and administrators' perceived the FOI of the kindergarten Montessori program, this study primarily used the interview and observation protocols as well as the implementation of science framework. The implementation of science framework theory holds that learners acquire knowledge and understanding based on previous knowledge, understandings, and skills (Dunst, Raab, & Trivette, 2013; Fosnot, 2013). Although, participants shared some different perspectives about the phenomenon due to personal backgrounds and experiences, there was a consensus on what they perceived to have an effect on the fidelity of the kindergarten Montessori Program.

Findings

      This section contains a summary of findings for each of the three central research questions. Research questions and data sources that correlate are described in Table 6. Overall, I found five themes in the data analysis process. Detailed information for each research question is included following Table 6.

Table 6

Themes by research question

Research question	Major Themes (M)
Teacher and administrator perceptions	Theme 1: Relevant and targeted PD and peer support for novice teachers is needed to support FOI (M) Theme 2: Limited advanced Montessori resources (M) Theme 3: Peer coaching is needed to support new teacher implementation of the Montessori Method with fidelity (M)
Classroom Observations	Theme 4: Administrative support and capacity building for the Montessori program to support FOI (M)
Implementation	Theme 5: Precise and Consistent comprehension of the Montessori Learning Model is needed for FOI (M)

Central Research Question 1: Teacher and Administrator Perceptions

      The central research question is as follows: How do teachers and administrators perceive the fidelity of implementing the kindergarten Montessori program as related to: (a) effective interventions, (b) implementation methods, (c) enabling contexts, and (d) intended outcomes, at the study site? Findings indicated that while the Montessori program is successful, it is important that if program content is not delivered as detailed from trainings and the teaching manuals, the academic and program success will be hindered.

Central Research Question 2: Classroom Observations

The next central research question was as follows: How are teachers observed to implement the kindergarten Montessori program as related to: (a) effective interventions, (b) implementation methods at the study site? Findings from both teachers and administrators indicated there is a great need for all administrators to become Montessori trained. Participants related that in order for administrators to effectively observe the Montessori classroom, they must be familiar with the method.

Central Research Question 3: Implementation

The final research question was as follows: How is the implementation of the Montessori kindergarten program reflected in archival documents such as lesson plans, campus and district PD plans at the study site? Findings indicated there are multiple areas that affect the implementation of the Montessori program. The findings indicated administrator and peer supports in conjunction with PD is needed.

Themes from the Findings

Upon review of the analyzed data, I found that the themes emerged from their relationship with each other as ways to implement the Montessori program with fidelity. The teachers believed ongoing professional development is needed, which could lead to effective content delivery if teachers are continuously trained on implementation practices. Effective teacher training and technical assistance is needed for teachers and administrators in addition to team planning in order to provide clear expectations throughout the district regarding the Montessori program components and expectations for implementation. Overall, teachers and administrators believed the FOI of the

Montessori program needs to be consistent district wide in reference to procedures,

implementation, and expectations to declare the Montessori program is implemented with

fidelity with the necessary tools that are identified as themes. Described in Table 7 details

the theme and the description for each.

Table 7

Major themes and descriptions

Major Themes (M)	Descriptions
Theme 1: Relevant and targeted PD and peer support for novice teachers is needed to support FOI(M)	Teachers need relevant and targeted professional development delivered collaboratively through a Montessori (PLC)
Theme 2: Limited advanced Montessori resources (M)	Advanced materials are made by teachers to meet the needs of the students that have mastered general lessons
Theme :3Peer coaching is needed to support new teacher implementation of the Montessori Method with fidelity (M)	New teachers implement the Montessori program based on their personal experiences without the support of continuous guidance from administrators and systematic, targeted PD
Theme 4: Administrative support and capacity building for the Montessori program to support FOI (M)	Administrators receive an overview introduction of the Montessori method but no formal training, therefore Systemic Administrative Professional Development is needed to support administrators in monitoring and encouraging the FOI of the Montessori program
Theme 5: Precise and consistent comprehension of the Montessori Learning Model is needed for FOI(M)	Teachers do not implement the procedures, interventions, nor share the same expectations resulting in inconsistent implementation due to the variations of teacher experience teaching Montessori and lack of targeted Montessori PD

Central Research Question 1: Teacher and administrator perceptions. I asked interview participants how they perceived the implementation methods of the kindergarten Montessori program in regards to effective interventions, enabling contexts, and intended outcomes.

Major Theme 1: Relevant and targeted PD and peer support for novice teachers is needed to support (FOI). The first theme to emerge from the first research question was that 100% of the participants noted that teachers need relevant and targeted professional development delivered collaboratively through a Montessori PLC. Both administrator and teacher participants added that the more experience delivering the Montessori content, the more comfortable the teacher will become in making their personal classrooms their own. P4 stated, "This is my second-year teacher kindergarten Montessori and it's hard- I have to rely on my manuals and veteran teachers for ideas." P1 discussed after 14 years of teaching the Montessori Method, there are times when the experience allows her to diversify lessons to reach all her students. P1 also discussed how difficult it was to transition from a traditional education teacher to a Montessori teacher. P2 and P3 noted additional PD would build the confidence of teachers. A2 added that many teachers lack confidence "because they just don't have the tricks." P5 explained how the manuals are a great resource; however, experience is the best teacher. P5 went in further detail to explain how although she is not a novice teacher, the change from teaching traditional classroom procedures are slightly different from teaching the Montessori method. P3 shared, "frequent PD that serves as refreshers would keep the Montessori lessons sharp and allow teachers to voice any pressing questions that may

hinder the successful implementation of the Montessori content." P4 stated, "I have taught for a total of two years, one teaching traditional kindergarten and one teaching Montessori; I must say teaching Montessori is very difficult without support from peers." P4 revealed, "I was lost trying to set my classroom, I wanted to make sure I had the required areas of the Montessori curriculum, this is when I needed PD the most." P4 explained that PD collaboration with other Montessori teachers would be so valuable to gain ideas on lessons and resources. The data derived from this specific research question supports the need for targeted PD and additional support for novice teachers.

While all participants stated the Montessori, training received was very informative and provided the knowledge base needed to deliver Montessori content, continuous supports are needed. P3 explained, "I believe I can be more successful with observing other Montessori teachers periodically not only on instructional strategies but how procedures are implemented; this will give various perspectives and help me to see what my fellow teachers are doing." A2 shared, that she encourages peer exchanges on her campus; it allows teachers to collaborate, view content delivery from fellow colleagues, and gain support. One-hundred percent of the participants agreed it would be very beneficial for all teachers, especially novice teachers to have a mentor teacher. P4 shared stated, "I would love to not only observe the veteran teachers, but have them observe me periodically and provide feedback, and I can then strengthen any weak areas." Establishing teacher collaboration and support throughout the Montessori program would benefit not only novice teachers, but all teachers in the district and

improve instructional strategies and ensure the implementation of the Montessori

program is implemented with fidelity.

    Major Theme 2: Limited advanced Montessori resources. The second major

theme identified from the research question regarding the implementation of the

Montessori program at the target site highlighted was the limited availability of advanced

materials for content delivery by the Montessori teachers for students who were working

at an accelerated instructional pace in the classroom setting. From conducting classroom

observations, I observed a variety of teacher made resources throughout the classrooms.

After conducting teacher interviews and classroom observations, findings revealed

extended Montessori lessons are needed to support the acceleration of student learning

for those students working above instructional grade level. P7 stated, "Once a student has

successfully completed the required Montessori lessons, extension lessons will need to be

made by the teacher to continue the academic advancement of the learners." "Classrooms

were furnished with the required materials; however, extension materials have to be

teacher made and without the resources needed to teach advanced lessons, the

implementation and outcomes of the program suffer." P8 explained," Extension materials

are an advanced activity of a previously taught lesson, the students need extensions to

keep the motivation to learn. P3 stated, "Not having what was needed and having to make

extension materials is the hardest thing." P1 and P2 discussed that time does not allow the

teachers to make effective resources to meet the needs of the students that excel rapidly."

A1 and A2 noted that with administrators not being formally Montessori trained, teachers

cannot be fully supported with classroom needs due to the lack of administrators' lack of knowledge of the Montessori components:

> P4 stated, Having to make resources is definitely a chore and keeps you from fully teaching the student extension lessons. As P4 continued to explain, Having to learn how to make what is needed is time consuming and frustrating at times. It would be beneficial if novice teachers and veteran teachers shared resources and teaching strategies, we could build a library of resources.

Without the proper resources to support this theory, the program will not be implemented as designed and with fidelity. The implementation of science framework which is the conceptual framework for this FOI study indicates the importance of considering implementation practices, intervention practices, and FOI. The process of using the implementation of science framework provides support for framework that learning will occur by implementing change in the kindergarten Montessori program while encouraging teachers and administrators to build upon their prior knowledge and apply new learning concepts within their daily experiences.

Major Theme 3: Peer coaching is needed to support new teacher implementation of the Montessori method with fidelity. The third theme to emerge from the first research question was that new teachers implement the Montessori program based on their personal experiences without the support of continuous guidance from administrators and systematic, targeted PD. Therefore, the concept of on-going PD of the Montessori program developed as a prevalent theme through ought data analysis from personal interviews and classroom observations. In agreement 100% of the participants

expressed that when in doubt, the training manuals received from the initial training were a great resource of reference to ensure a lesson is taught correctly. The theme of on-going PD was an essential component in answering the initial research question of how teachers and administrators perceive the fidelity of the kindergarten Montessori program as related to enabling contexts. One-hundred percent of teacher participants noted having a PD opportunity that allows for peer collaboration would prove to be valuable with cross district teachers sharing resources. P1 indicated, "The Montessori training received through Southwestern Montessori Training Center, Inc. prepared me very well for the classroom, but I sometimes need a refresher course." P2 stated, "One of the greatest qualities of my training is the ability to create diversity in various ways in my classroom to strengthen the community between home and school, I would love more training on ways to diversify my lessons more." P3 and P5 noted the importance of continuous trainings and PD supports for teachers. P4 stated, "We have pretty good resources; the trainings were effective in making sure we were comfortable with teaching the lessons. P5 commented, "The trainings were full packed, at times I felt overwhelmed, but I now know the acceleration was needed to ensure us teachers got what we needed to be prepared." During the interview process, support with lesson planning surfaced frequently in the responses of the teacher participants. A1 explained that, "allowing teachers the opportunity to design lessons that are aligned with the state standards collectively will provide added resources and support for this major component of the Montessori program". P7 specified, "The trainings were thorough, but I would like a recap of math." P4 explained how helpful it would be to have trainings focuses on a

single subject at a time. In fact, 80% of the participants indicated that there was a need

for on-going PD to further the implementation of the Montessori program. One-hundred

percent of administrator participants indicated additional PD is needed to support

teachers implement the Montessori program with fidelity. A2 shared, "in order to

progress monitor and document data, I must know what the implementation must look

like in the Montessori classroom, which will come from complete training." One of the

major functions of a campus leader is to support, and guide the quality of teaching A1

indicated, "sitting in training with the teachers, learning with them not only unites the

educational team, but teachers are mindful that we as administrators will know what the

expectations are and what we should see when conducting classroom visits." With

administrators completing training with their teachers, the conceptual framework for this

study, implementation of science framework provides insight into the elements of an

effective implementation process that leads to the adoption of new policies, programs,

evidence-based methods, and/or intervention practices in a manner that is intended

Providing opportunities for additional PD for the kindergarten Montessori program will

reinforce the goals and objectives as intended for the kindergarten Montessori program to

ensure the program is implemented with fidelity. Below, Table 8 contains PD content that

emerged from data analysis, categorized by participant group of Montessori teachers and

building administrators.

Table 8

Professional development content by participant group

Professional Development Content	Overall participant response	% Montessori teachers	% building administrators
Montessori Philosophy Overview	90%	90%	100%
Resource design	100%	100%	100%
Collaborative Lesson Plan Alignment	90%	90%	100%

Central Research Question 2: observed implementation of Montessori program components. Observation of the teachers regarding how the Montessori program is implemented was a critical component of the data collection to determine if the program was being implemented as it was originally intended. Participants were observed related to the implementation of the Montessori components in their classrooms. Data from this research question were established from Montessori classroom observations and knowledge of the Montessori components. Based on analysis of the data collected, one major theme emerged.

Major Theme 1: Administrative support and capacity building for the Montessori program to support FOI . The first major theme and forth overall theme developed from the second research question regarding how the Montessori teachers are observed. In these data the theme emergered that administrators receive an overview introduction of the Montessori method but no formal training therefore systemic administrative professional development is needed to support administrators in monitoring and encouraging the FOI of the Montessori program. During the data

collection process, in personal interviews and classroom observations, 100% of the
participants relayed that building principals need to have a working knowledge of the
Montessori philosophy for classroom walk throughs and informal observation purposes.
Conducting observations allowed campus leaders to ensure effective teaching is taking
place in the classroom environment. The current evaluation protocol is that the district's
Director of Early Childhood conducts all formal teacher observations since the district
administrators have not been formally Montessori trained

     During an observation, P3 set up a small diverse group of nine struggling readers
to teach an initial sound Montessori lesson where the students match letters with objects
with the corresponding beginning letter. This specific beginning sound lesson involved
problem solving skills and reading strategies. The students utilized Montessori's three-
period lesson which is a learning strategy that allows the student to explore all answers to
the task provided before selecting an answer. This lesson showed P3's knowledge of the
students' reading abilities and addressed the individual needs of the students. It was
obvious that P3 had concern for each student by the way she addressed each student, used
the appropriate instructional tools, and because the students were all happily engaged in
the lesson. The students and teacher appeared to be comfortable, competent, and
confident. The students knew what was expected of them in order to achieve the
objective of the lesson. P3 was supportive of the students' learning and offered praise to
students for participating in the lesson activity and small group discussion

     Findings indicated that Participants 3, 4, 5, and 8 understood how their students'
learning is influenced by individual experiences, interests, and prior knowledge in

addition to language, culture, family, and community values. Researchers have argued that diverse students are more likely to succeed academically if the climate of the classroom and school is warm and welcoming, and they feel that their culture is valued.

While conducting an observation, P4 had arranged for students to choose previously taught work from the classroom shelves. The classroom environment was calm and some students were working and engaged in their lessons. There were some students off task and it was clear they were not engaged with the lessons they had chosen from the classroom shelves. It was evident class procedures were in place and students were accustomed to the expectations of the teacher. One student completed the desired work and began to wonder around the classroom looking for additional work to complete. P4 directed the student to the shelf to choose another lesson while another student completed the only advanced lesson for the content area being reinforced. It was evident that lack of advanced Montessori resources was a hindrance to the content delivery of the Montessori curriculum.

During a classroom observation P2 was having difficulty with several students not on task. The classroom was a bit loud in comparison to other observations. It was noted during the classroom visit students were not following the procedure of choosing Montessori work from shelves due to the teacher having to constantly remind the students to choose only work that was previously taught to reinforce the skill. Although the classroom management was not as solid as other observed classes, it was evident the teacher had gotten to know the interest of the students by the display of reading material. Some of the teacher made resources resembled the latest genre of childhood cartoon

characters for counting and number identification. Building student-teacher relationships

and making connections between cultures improves teaching and student learning.

From the data obtained from classroom observations, additional PD would benefit

the teachers in the areas of overviewing the Montessori program's expectations and

procedures, classroom management, and expanding advanced Montessori classroom

resources. Professional development is a critical component if the expectation of the

kindergarten Montessori program is to be implemented with fidelity by ensuring the goals

and objectives designed for program implementation are carried out as intended. Using

baseline data derived from the teacher and administrator interviews and classroom

observations, a PD program could be constructed based on understanding of the current

skills, preconceptions, and attitudes of teachers in regards to the Montessori program.

Central Research Question 3: implementation reflected in archival data.

Teacher participants were asked to present lesson plans and all PD training for a review

to accompany interview and observation data.

Major Theme 1: Precise and consistent comprehension of the Montessori

learning model is needed for FOI. The only major theme to emerge from research

question 3 and overall fifth major theme from the study was teachers do not implement

the procedures, interventions, nor share the share the same expectations resulting in

inconsistent implementation due to the variations of teachers' experience teaching

Montessori and lack of targeted PD. Results showed that consistent and routine

procedures assist in successful implementation of the Montessori content. The

participants shared that it is imperative to establish routines within the Montessori

implementation. A1 stated, "It is evident when procedures are taught initially, from the simple task of lining up." Building classroom routines and procedures must be imbedded in daily lessons to strengthen classroom goals and objectives. One-hundred percent of the participants indicated that procedures and expectations must be taught in order for the learner to become familiar with the Montessori learning environment. P8 stated, "Before students are taught a Montessori lesson, procedures are practiced daily." P3 stated, "Implementing the Montessori method is not a difficult way to teach, but the expectations and procedure are not consistent from class to class." In addition, P5 and P9 pointed out Montessori guidelines specified that the teacher should take at least six weeks to teach classroom environment routines. The district provided intense teacher training the summer prior to the teacher's initial year in addition to the mandatory trainings necessary to obtain Montessori certification, however that concludes the training specially geared towards the Montessori philosophy. P2 explained, although, expectations and procedures were thoroughly covered during training, once school starts, clarity is needed in certain area, this is when the additional training would be helpful." P3 added, "I could really benefit from having a training to assist in lesson planning and organizing the day to ensure procedures are reviewed throughout the day." A1 and A1 stated clear expectations of how to implement the Montessori method with fidelity is one of the keys to academic achievement by displaying accurate and sufficient implementation. trained "A1 indicated, "As an administrator, I would love to know what concepts are being taught when I come in and observe the class environment, lesson plans are not always 100% aligned to the state standards." A2 stated, "I literally have to ask the teachers questions to gain

knowledge of what I am seeing, I feel it would be beneficial for Administrators to have a short training for observation purposes." According to A2, asking teachers what is occurring during lesson delivery impedes on the implementation of the Montessori philosophy, and this can result in impediment of the overall goals for the teacher's plan of instruction. A2 stated, "As an administrator geared towards the traditional education model, I find is difficult at times to conference with teachers in regards to instructional matters."

P3 and P7 shared that when attending trainings or meetings, emphasis was placed on aligning Montessori components with state standards and teaching strategies, not so much on classroom procedures. P3 added, "Trainings need to focus on everything Montessori, not just certain components." From conducting classroom observations, it was evident that each teacher modified the classroom procedures and there was no consistent protocol throughout the district. Consistent routines decrease classroom discipline and increases student productivity. A1 and A2 indicated that having consistent procedures and expectations throughout the district would be beneficial when students move from one campus to another within the district, the parents and student will know what the expectations and procedures will be. Sixty-percent of the participants stated it would be helpful if procedures and expectations were the same throughout the district, the participants believed this will contribute to the Montessori program being implemented with fidelity. Creating a PD project tailored to meet the needs of the kindergarten Montessori program could have an exact influence on the FOI of the

program. This type of PD could be meaningful in this school district and could promote positive social change and academic success of all students.

Summary of the Findings

This qualitative, FOI study focused on a single issue, of determining the FOI of the kindergarten Montessori program in LISD1. I collected data by conducting 10 semi-structured interviews and classroom observations lasting approximately 60 minutes. Additional data were collected were archival data such as lesson plans. The teachers believed ongoing professional development is needed, which could lead to effective content delivery if teachers are continuously trained on implementation practices (Allain, 2014) These three sources of data, in addition to the initial literature review, provided rich, detailed information from LISD1 and the kindergarten Montessori program.

The themes from this study are closely aligned with the Montessori components outlining potential areas for a three-day PD. Continuing professional learning continues professional competence (Taylor, 2015). The major themes and Montessori component correlations are detailed in Table 9:

Table 9

Major themes and Montessori components

Major Themes (M)	Montessori Components	Fidelity Relationship/Connections
Theme 1: Relevant and targeted PD and peer support for novice teachers is needed to support FOI (M)	Instructional Approach	Effective Interventions/Implementation Methods/Enabling Contexts
Theme 2: Limited advanced Montessori resources (M)	Montessori Materials; Instructional Approach	Implementation Methods/Enabling Contexts
Theme 3: Peer coaching is needed to support new teacher implementation of the Montessori Method with fidelity (M)	Instructional Approach	Implementation Methods/Enabling Contexts
Theme 4: Administrative support and capacity building for the Montessori program to support FOI (M)	Instructional Approach	Implementation Methods/Enabling Contexts
Theme 5: Precise and Consistent comprehension of the Montessori Learning Model is needed for FOI(M)	Child-directed work; Instructional Approach	Implementation Methods/Intended Outcomes

Using data derived from the FOI study, a PD program could be constructed based on understanding of the current skills, preconceptions, and attitudes of teachers in regards to the Montessori program (Mowat, 2015; Orsati & Causton-Theoharis, 2013; Sawka et al., 2002). Toom (2016) noted professional learning is not something that happens in isolation, opportunities must be cultivated and nurtured. Applying Knowles' (1970) andragogy theory and Rogers' (1955) diffusion theory, participants may gain greater insight not only how they teach and deliver content, but how they process the material they are teaching. However, there has been no PD primarily focusing on Montessori education since the program's implementation in 2005. Therefore, based on Knowles' and Rogers' theories, the teachers and administrators within LISD1 could gain further understanding of how to deliver the Montessori program with fidelity with additional PD focusing on the program components. An interactive PD could be valuable for the Montessori program and could promote positive social change for all stakeholders.

Conclusion

The purpose of this doctoral study was to determine the FOI of the kindergarten Montessori program as designed so that the results from the FOI study can be used to refine the Montessori implementation at the study site. Within Section 2, I presented the methodology that was utilized for this proposed project study, which was to conduct a fidelity of implementation study for a kindergarten Montessori program, to maintain alignment with the purpose of the project study stated in Section 1. Section 2 outlines the research methodology and design of the FOI of the kindergarten Montessori program in an urban school district, which included interviews and observations. Through teacher

interviews, I was able to determine how teachers and district leaders perceived the Montessori program's effectiveness, gained knowledge on any PD potentially needed, and perceived professional self-efficacy regarding variations of the program and the program's fidelity. Observations provided data in regards to the behavior and instructional strategies as they are related to teachers and district administrators' perceptions of the Montessori program. In addition, within Section 2, I discussed sample procedures, data collection, and data analysis methods. After the data is analyzed, a project to address any PD needed to maintain or strengthen the fidelity of the kindergarten Montessori program have been planned by needs assessment.

Within Section 3 of this study, a project based on the study findings is presented. The project is professional development training for the teachers and administrators of the kindergarten Montessori program. It serves as a possible solution to the research problem under study. Section 3 will also provide a literature review, a project evaluation plan, and project implementations. Section 4 will be the final section, and will outline my reflections and conclusions of this doctoral project study.

Section 3: The Project

The purpose of this study was to determine the FOI of the Montessori program as designed so that results from the FOI study could be used to refine the Montessori program implementation at the study site. Findings from data collected revealed that the following factors would have an influence on the FOI of the kindergarten Montessori program: administrative support and capacity building for the Montessori program, increased advanced Montessori resources, peer coaching to support new teacher implementation of the Montessori method with fidelity, precise and consistent comprehension of the Montessori learning model by all stakeholders, and relevant and targeted PD including peer support for novice teachers. This project was designed based on study findings presented in Section 2 as a solution to the research problem. Some of the specific Montessori content that this PD will include will be focused on the addition of advanced Montessori resources; targeted PD focused on the Montessori philosophy, mission, and vision; and teaching techniques and intervention strategies for behavioral and academic issues related to language, math, writing, and science instruction. The goal is to deliver these targeted PD sessions in a collaborative format that promotes dialogue and a sense of a PLC within the Montessori community. The project is also designed to develop a forum of collaboration for colleagues, allow veteran teachers to coach novice teachers, and build capacity for administrators to support the FOI of the Montessori program.

In Section 3, I present the project. This section includes details regarding the description, goals, and rationale of the project. There is also a literature review, which

consists of a theoretical framework and research to support the project genre. The implementation of the PD is detailed, including the expansion of resources and existing supports, potential barriers, proposal for implementation and timetable, and roles and responsibilities of all instructional leaders. In addition, Section 3 outlines the project evaluation and implications including social change within the study site.

Descriptions and Goals

I created a professional development (PD) project designed for Montessori teachers and administrators within the research district aimed at creating advanced Montessori resources; providing information specific to the Montessori program such as an overview and review of the Montessori philosophy; and allowing for the district Montessori teachers and administrators to collaborate on the design, delivery, and fidelity of the Montessori program. The purpose of the study was to determine the FOI of the kindergarten Montessori program as designed so that results from the FOI study could be used to refine the Montessori program implementation at the study site. Findings from data collected revealed that the following factors would have an influence on the FOI of the kindergarten Montessori program: administrative support and capacity building for the Montessori program to support FOI, increased advanced Montessori resources, peer coaching to support new teacher implementation of the Montessori method, precise and consistent comprehension of the Montessori learning model, and relevant and targeted PD and peer support for novice teachers. After careful analysis and collaboration with my committee, I concluded that the best direction for the project was PD training for the teachers and administrators of the kindergarten Montessori program at the study site. The

audience for this PD will include the kindergarten Montessori teachers and administrators. The project serves as a solution to allow the teachers and administrators to collaborate and enhance their knowledge of the Montessori philosophy (see Appendix). The central goals of the project are to advance the Montessori educators' expertise on how to better educate kindergarten Montessori learners, and to expand the Montessori teachers' library of resources to allow administrators develop clarity and understanding of the Montessori philosophy.

The project is a 3-day PD training with a tentative implementation date of summer 2018 with approval from district leaders. The proposed PD project for kindergarten Montessori teachers and administrators at the research study site includes three in-service days that will include activities, discussions, training sessions, and Montessori resources. The overarching goal of the PD for the Montessori educators is to improve the quality of teaching at the study site to enrich all kindergarten Montessori students' academic achievement and educational experience while ensuring the fidelity of the program. Goals for the PD include the following:

- Goal 1: The Montessori teachers and administrators will gain a deeper understanding of the Montessori education philosophy and content delivery process.
- Goal 2: The Montessori teachers and administrators will understand adult learning theory in order to build collaborative efforts, provide peer mentor and administrative support, and provide ongoing support for the fidelity of the Montessori program.

- Goal 3: The Montessori teachers and administrators will collaborate with fellow Montessori educators in the district to support the fidelity of the Montessori program.

- Goal 4: District Montessori teachers will design lesson plans and share resources to align with state standards and the fundamental components of the Montessori philosophy.

- Goal 5: District Montessori teachers will have the opportunity to make Montessori instructional materials to use in their classrooms.

- Goal 6: The Montessori teachers and administrators will learn the strategies to enhance the quality of teaching at the study site to enrich all kindergarten Montessori students' academic achievement and educational experience while ensuring the fidelity of the program.

Rationale

The findings noted in Section 2 of this study indicated a need for continued PD at the administrative and teacher level. After conducting the FOI study, I found inconsistent teacher practices in the implementation of Montessori components, the absence of administrator observations of the Montessori classrooms to support FOI; and the absence of advanced Montessori resources. Findings indicated that, to build capacity, the structures and systems in the Montessori program must be implemented with fidelity and with adequate implementation and resources. Effective collaboration must be encouraged between district teachers and administrators. The need for PD was confirmed in both individual interviews and classroom observations. This PD will encompass vital

components, such as collaboration of all Montessori educators, enhancing the knowledge

of the Montessori philosophy, designing and lesson planning collaboration, designing

extension Montessori lessons, and integrating administrator Montessori training.

The qualitative study addressed the FOI of a kindergarten Montessori program.

Data analysis revealed that the fidelity of the program was lacking in the following areas:

administrative support and capacity building for the Montessori program, advanced

Montessori resources, peer coaching to support new teacher implementation of the

Montessori method with fidelity, precise and consistent comprehension of the Montessori

Learning Model, and relevant and targeted PD and peer support for novice teachers. The

project genre selected addresses the research problem by providing PD to kindergarten

Montessori educators on the best instructional practices for adult learners.

The project is directed toward advancing kindergarten Montessori educators'

skills, expertise, and understanding of andragogical theory and to help experienced

teachers mentor novice teachers. Findings from this study centered on the Montessori

program being implemented as designed. Although the study participants teach young

learners, during the PD training the participants will be adult learners. Adults learn

differently than children; therefore, pedagogical teaching methods are considered

ineffective (Chan, 2010; Chen, 2014, Holton, Knowles, & Swanson, 2016; Knowles,

19768, 1970, 2012; Tough, 1979). Instructional practices must be adapted to align with

the educational needs of adult learners particularly for institutions that serve a culturally

diverse population to ensure academic success (Wlodkowski, 2010). Based on study

findings, I identified the need for more support for the kindergarten Montessori program

at the study site, and the participation of the Montessori educators in the PD training will be instrumental in increasing support.

Koellner and Jacobs (2015) found a positive relationship between student-centered teacher PD and learner achievement. A key component of successful student learning is teacher effectiveness (Hawley & Rollie, 2007). Educators are accountable for their students' academic success. Patton, Parker, and Tannehill (2015) affirmed that teacher quality can be maintained if school administrators implement innovative PD practices that are tailored to meet the specific needs of their institution. After careful consideration, the PD project for the kindergarten Montessori teachers was considered the best solution to address specific areas identified in the study. All PD project initiatives are aimed at educating the kindergarten Montessori teachers and administrators on how to meet the needs of their learners and implement the best instructional practices to ensure academic achievement while ensuring the fidelity of the Montessori program as it was designed.

Review of Literature

The purpose of this study was to determine the FOI of the Montessori program as designed so that results from the FOI study could be used to refine the Montessori program implementation at the study site. A project was created to address the research problem by providing a PD program that will educate the kindergarten Montessori teachers and administrators on how to meet the needs of their learners and implement the best instructional practices to ensure academic achievement while ensuring the fidelity of the Montessori program as it was designed. I reviewed scholarly literature related to the

study findings and project genre. The literature review focused on adult learning and professional development. The following key words were used to conduct my literature search: *adult learners*, *adult learning theory*, *adult educators*, *andragogy*, *student achievement*, *professional development*, *teacher development*, and *professional development for teachers*. The literature review included peer-reviewed and scholarly articles. I retrieved most of the scholarly literature using the following Walden University library databases: Academic Research Complete, Education Research Complete, and SAGE Journals. Google Scholar was also used to retrieve articles referenced in this section. This section includes discussions on the following topics: (a) andragogy theory; (b) adult learning, educators, and education programs; (c) professional learning; (d) professional learning communities; (e) capacity building; and (f) creating a change in culture.

Conceptual Framework

The conceptual framework for this project was Knowles' (1970) theory on adult learning. The adult learning theory explains the ways adults learn differently from children and why (Holton et al., 2012, 2015). The theory guided the development of this project due to the principles of adult learning apply to how teachers and administrators in the Montessori program will gain knowledge from the PD project, and how they can meet the needs of their learners. Andragogy is the study of adult learning, the focus of the theory which proposes that adults are self-directed and self-directed learners who require detailed educational practices (Knowles, 1970). According to Knowles' andragogical model, there are six norms in regards to adult learning: (a) adults like to be in control of

their learning process, (b) adults like to know why they need to learn something, (c) adults benefit from learning that aligns with their position in society, (d) adults bring their life experiences to the classroom, (e) adults are intrinsically motivated to learn, and (f) adults tend to show an interest for learning when content relates to real-life situations (Holton et al., 2012, 2015; Knowles, 1990, 1995). Adult students view their educators as facilitators of learning and traditional pedagogy methods of teaching are ineffective (Chen 2014; Holton et al., 2012, 2015; Knowles, 1980, 1995). The adult learning theory presented itself as the standard for this PD project for the Montessori educators and administrators and proposes best educational practices for the Montessori program at the study site (Caffarella & Daffern, 2013). By reviewing Knowles' theory, I was able to obtain an understanding of why and how adults learn differently than young learners. It provided insight into the research problem, study findings, and results that may remedy the nonexistence of empirical evidence to support the potential effectiveness and FOI of the Montessori program.

Andragogy theory. Andragogy theory was initially described by Knowles in 1968 and recommends that the combination of an individual's life experiences and self-construction are the most important resources that aid adults when learning new concepts (Knowles, 1970). According to this theory, as adults become more mature and independent, they also become more responsible for their own learning. Knowles also retained that all learners, regardless of age, learn and reinforce new concepts and skills by comparing new and existing knowledge. Knowles et al. (2012) addressed five assumptions within the adragogical model, all of which address the needs of adult

learners: adults apply newly acquired knowledge and skills sooner, adults connect prior experiences to new experiences, adults are eager learners, adults are motivated to learn, and adults are self-directed. Knowles' (1970) andragogy theory produces significantly diverse results in association to other pedagogical theories on learning and teaching strategies, specifically when determining essential learning outcomes for teachers during PD occasions. PD opportunities support teachers in increasing student success (Coleman & Goldenberg, 2010).

Conducting an FOI study presented accountability to the teachers and administrators so that they became aware of the content needed to be retained and delivered to ensure the kindergarten Montessori program is implemented with fidelity. From this theory, I concluded, that when teachers deliver new concepts and skills, the implementation of the educators' preferred instructional strategies would be determined by their own experiences and practices (Knowles, Holton, & Swanson, 2012).

Diffusion theory. Diffusion is the method by which an innovation is transferred through specific avenues over a period of time among the participants of a social structure. Diffusion is a unique type of communication concentrated on the increase of messages that are observed as new knowledge (Rogers, 2013). "Diffusion of innovations takes a radically distinctive method to most other theories of change. Instead of focusing on persuading individuals to change, it sees change as being primarily about the evolution or "reinvention" of products and behaviors so they become better fits for the needs of individuals and groups" (Rogers, 2013, p. 213). In the diffusion of innovation theory, it is not people who change, but the innovations themselves (Rogers, 2013).

In diffusion of innovation theory, the focus is on recognizing the five qualities that help define the success of a program. The qualities are compatibility with present values and practices, observable results, relative advantage, simplicity and ease of usage, and trailabilty. Rogers (2013) stated that an individual cannot adopt new processes on their own, the five qualities of diffusion assist in the decision to link prior knowledge to new knowledge and how one perceives the new information.

Relative advantage. This is the step in which a program is perceived as better than the idea or practice. This step superseded a specific set of users, measured in limits that matter to those specific users, like economic advantage, community prestige, convenience, or gratification. The greater the observed relative advantage of a program, the more rapid rate of adoption is likely to occur (Rogers, 2013). There are no definite rules for what establishes "relative advantage." It is established on the insights and needs of the user group.

Compatibility with present values and practices. This is the step to which an innovation is apparent as being consistent with the standards, past experiences, and requirements of potential adopters. An idea that is irreconcilable with their values, models or practices will not be accepted as rapidly as an innovation that is harmonious. Rogers (2013) stated, the present values must be compatible with the core values and standards of the innovation.

Simplicity and ease of use. This is the degree to which a program implementation is perceived as challenging to understand and utilize (Rogers, 2013). New ideas that remain simpler to understand are approved more rapidly than inventions

that require the researcher to develop new abilities and understandings. To be successful, innovation usage must be less challenging to comprehend.

Trialability. This is the standard in which an innovation can be investigated with on an inadequate basis. An innovation that is a learning experience represents less risk to the individual who is considering it (Rogers, 2013). Innovations are most effective when the learning experience is relevant and experiences have a connection.

Observable results. The more informal it is for individuals to witness the results of an innovation, the more likely they will fully take advantage of the innovation learning experience. Rogers (2013) stated, visible results lower vagueness and stimulate participant discussion of a new concept, as friends and contributors of an adopter often inquire information about it. Results offer support if more growth is needed or if the innovation is effective.

According to Rogers (2013), the five qualities described determine between 49% and 87% of the discrepancy in the adoption of new programs. These five qualities create a valuable checklist toward framing the focus group collaborations or project evaluations. They can assist in identifying weaknesses to be outlined when improving procedures or characteristics. Reinvention is a crucial principle in diffusion of innovations. The success of an invention depends on how the completion evolves to meet the demands of more and more challenging and risk-averse individuals in a population.

Framework Relationship

Rogers' theory of diffusion of innovation is applicable to this study due to being described as a self-regulatory process whereby collaboration is promoted, exploration,

and problem solving are a valuable part of the process of learning while eliciting multiple points of view (Confer & Ramierz, 2012; Mercer & Howe, 2012; Rogers, 1962). Rogers' (1955) diffusion of innovation theory approach is often considered the best method for teaching and learning due to the learner making meaning from new information allowing for internal processing (Bagby, 2010; Bigg, 1999). As an illustration, for decades, social scientists have been studying how change happens, and you may find the implications of that research useful in endeavors to implement transformational teaching changes in your school with colleagues, administrators, parents, and other stakeholders. A central theory that describes the pace and path of acceptance of new ideas and innovations was put forth by Rogers (1955). Rogers described how the diffusion of innovation takes place in a social system as people undergo a five-step process to assess the impact of change on their work and lives. Below are the steps in the five-step process to assess the influence of change Rogers (1955):

1. In the knowledge step, learners become aware of a new idea and begin to develop their understanding of the function of this innovation.

2. Learners are then persuaded to form either a favorable or unfavorable attitude about this change.

3. Learners decide whether to adopt or reject the innovation.

4. Learners implement the new idea.

Rogers' theory (1955), acknowledged in his theory that people go through these steps at widely varying speeds and in ways that influence how others around them will respond to and adopt the innovation. Most innovators, or early adopters, are the first in line to try

out new concepts, and the positive responses of innovators who convey the benefits of adopting the innovation to others results in other people being drawn to the innovation by observing the response of the early adopter and seeing clearly the benefits of the innovation. The stages of adoption for an innovation include the early adopters, who are also the early majority, the late majority, and the laggards, who may resist adopting a new idea until they are penalized in some way for resisting the innovation or change.

Adult Learning, Educators, and Education Programs

Adults learn differently than children (Chan, 2010; Holton et al., 2012, 2015; Knowles, 1980, 1990, 1995; Tough, 1979). Adult learners are self-directed, and purpose driven (Klein-Collins, 2010; Knowles, 1980). Adult learners need to know the reason for learning content or aspects of an innovation and why it is worth learning. According to Falasca (2011), adult students seek to learn content that is relevant as well as applicable to real life circumstances. Once a learner reaches adulthood, they become decision-makers of their learning process (Kenner &Weinerman, 2011; Rabourn & Shoup, 2015). Adult students seek to work collaboratively with educators to gain knowledge (Chen, 2014). Adult learners must make the transition from teacher to facilitator of learning (Holton et al., 2012, 2015; Knowles, 1980, 1995; Tough, 1979). Teaching adult students involves knowledge of adult learning theory and experiences necessary to effectively implement andragogical instructional approaches (Chan, 2010; Finn, 2011; Henschke, 2011). Adult educators are expected to become familiar with the most suitable educational practices to ensure students 'academic success (Harper & Ross, 2011). The

PD project will enhance the knowledge of the Montessori teachers and administrators by furthering their expertise on the principles and components of the Montessori philosophy.

Adult education programs that are geared toward adult learners have been reconstructed around the learning theory and have make changes as to how programs are designed, teachers are trained, and student learning is fostered (Holton et al., 2012). Adult learners must learn how to put the adult learning theory to practice in order to best service adult learners like for example the teachers and administrators of the Montessori program (Kenner & Weinerman, 2011; Sieben, 2011). Education administrators that focus attention on enhancing student performance must consider how the adults who serve students learn as well as they plan for introducing or teaching adults (DuFour & Mattos, 2013). For this reason, PD programs for teachers should be designed with Knowles' six assumptions in regards to adult learning.

Teacher Professional Development

Based on study findings in Section 2, there is a need for additional PD for the Montessori teachers and administrators. The overarching goal of the PD for the Montessori educators is to improve the quality of teaching at the study site to enrich all kindergarten Montessori students' academic achievement and educational experience while ensuring the fidelity of the program is being upheld. This project was developed to train Montessori teachers and administrators on best practices to ensure academic achievement of the Montessori students. According to Lumpe, Czernaiak, Haney, and Beltyukova (2012), teacher PD programs offered to adult learners, which were research based and implemented effectively, resulted in improving student achievement by

providing educators with instructional strategies to strengthen students' identified weaknesses involving content knowledge. When considering input, experiences, adult learner needs, content knowledge, and feedback educators were more open to PD and other school reform efforts (Bottoms, Egelson, Sass, Uhn, & Southern Regional Education Board, 2013). PD initiatives must be deliberate to have a focal point on addressing the needs of the Montessori teachers and administrators as adults, and professional learners.

Improving student academic success by way of teacher learning is the basis of PD for educators (Creswell, 2012; DuFour, DuFour, & Eaker, 2008; DuFour & Mattos, 2013; Mertler; Schmoker, 2012). Teachers can enhance the quality of their instruction through active participation in PD programs that focus on student learning. Active participation facilitates new learning experiences for the teacher resulting in changes to the instructional process (Beavers, 2009; Kunter et al., 2013). Hill (2015) conducted research on the topic of PD for teachers that resulted in not all programs being effective or resulted in enriched student learning due to PD content not being relevant to the needs of the campus; however, Blanford (2012) stressed the importance for teacher PD as a means to improve school quality. PD enables educators to focus on teaching skills in an effort to improve student services (Riggsbee, Malone, & Strauss, 2012). Quality educators are professional learners who continue to elevate their knowledge of the discipline because they recognize that dedicating themselves to lifelong learning is one of the ways to remain effective in improving their craft of educating.

Van der Heijden, Gelden, Beijaard, and Popeijus, (2015) suggested that educators accept their responsibility as change agents which holds them accountable for student learning promoting instruction that will be effective and successful. Teachers are instrumental to school change and without their spirited engagement approaches to improving the quality of education within an institution improvements will be limited (McLaughlin & Marsh, 1990; Petrie & McGee 2012; Watson, 2014). Desimone (2011) completed a study on successful PD for teachers explaining high quality PD for educators is crucial to effective school reform and should contain the following five key elements, "active learning, coherence, content focus, collective participation, and sustained duration (p. 252)." School and district administrators should consider that traditional PD programs are outdated and new, improved PD should be implemented that is cutting edge, purpose driven, inquiry based, ongoing, and most importantly, student centered (Arce, Bodner, & Hutchinson, 2014). PD is often designed to bring about change in teacher practice, with a goal of improved engagement and achievement for students.

A research study conducted by Jao and McDougall (2015) conducted a qualitative study on collaborative teacher PD and student achievement. The research study was project based and focused on the poor performance in applied mathematics of students in ninth-grade (Jao & McDougall, 2015). The researchers examined the effectiveness of a PLC for educators on student learning. The research study included 11 middle schools across four school districts in Ontario, Canada. Jao and McDougall (2015) executed the Collaborative Teacher Inquiry Project over the course of three instructional semesters. Purposeful sampling was utilized to recruit ninth-grade math teachers to participate in the

study in which school participating were chosen by district leaders based on general student performance and low math scores on the most recent standardized assessment (Jao & McDougall, 2015). Data were attained from individual interviews and reflective journals that outlined participants PD experience. Researchers established that participants valued PD initiatives that offered them the opportunity to collaborate and engage in academic disclosure with colleagues (Jao & McDougall, 2015). Results also supported the Collective Teacher Inquiry Project allowed teachers to gain knowledge in regards to the best instructional practices to implement in the ninth-grade applied math courses. Jao and McDougall (2015) recommended that the combination of teacher PD and collaboration was most effective due to members of the PLC being able to create positive relationships, shared visions, common goals, and commitments to advance teaching and student learning. A school community profits greatly when teachers collaborate professionally and socially because they become more capable of establishing bonds that enrich the quality of education.

Professional Learning

PD is often designed to bring about change in teacher practice, with an objective of improved engagement and achievement for students. Often the new material does not make the transfer from conference room to classroom. Bain et al. (2011) noted that schools that work toward becoming self-organizing entities have a stronger chance to witness sustained change due to five key elements: consistent expectations and language, structures and systems that support the change, ownership among all stakeholders, shared understanding, and a cycle of planning, assessing, and reflection. There must be

alignment between the professional learning and the school's core goal, mission, and current circumstances for results to have greatest impact on student achievement (Klingner, Boardman, & McMaster, 2013; Taylor, 2015).

While there is not a tangible recipe for creating a successful PD session, there are some components that should be involved. Stevenson, Hedberg, O'Sullivan, and Howe (2016) noted the importance of personalization, research-based practices, and school-based collaboration. Personalizing PD so that it is relevant and meaningful in the day-to-day life of a teacher is critical (Nishimura, 2014). Bayar (2014) noted that teachers label PD effective if it will make a difference in their daily work and if it is sustained over time. In addition to follow-up components such as coaching, collaboration, or reflection are also a way to strengthen the effectiveness of the PD (Parsons et al., 2016). PD cannot be constructed in an assembly-line manner, it must be tailored to the needs of the learning environment. Understanding the context and needs of the school is vital to the long-term outcome of the training's effectiveness.

Heath and Heath (2007) suggested that providing a basis for initial PD planning offers a roadmap with steps to assist educators in obtaining the goals necessary to achieve success in the areas of concern. PD which is tied to the core values and beliefs of the school staff has been found to be more readily accepted than PD that was not connected to specific staff values or beliefs (Heath & Heath, 2007). Researchers have recommended to engage participants and maintain their attention by including some items that might challenge beliefs or surprise them (Kershner & McQuillan, 2016). Taylor (2015) suggested that PD facilitators must be sure that participants leave the PD with a clear

picture of the new initiative so they understand how the new program or initiative may affect their daily practices. It is critical to provide staff with research that supports the PD, which is facilitated in order for the staff to comprehend the rationale and need for change; school change must be research-based (Nishimura, 2014). The material must touch emotions rather than being solely focused on data and statistics regarding student performance (Bayar, 2014). The PD must have the attributes of relevant and real learning by connecting the information to teachers' current learning situations (Taylor, 2015). These specific qualities of PD assist to make PD opportunities more meaningful to the staff and support the adoption and transition of new programs and practices from the PD session to the classrooms and, most importantly, to the school culture.

Professional Learning Communities (PLCs)

Collaborations in PLCs at the study site are imperative to the successful implementation of the PD project. Choi and Tam's (2015) research study on the effect of PLCs on teacher's beliefs and practices found that the launch of a PLC is essential to teacher PD. School administrators should implement PLCs at their individual institutions with the intent to attract teachers' participation by facilitating learning instead of using traditional teaching methods (Hoaglund, Birkenfield, & Box 2014). Sims and Penny (2015) piloted a qualitative study on failed PLCs and found that the most effective PLCs promoted active collaboration, learning, and communication among teachers. Huges-Hassell, Dupree, and Brasfield (2012) commented that, "PLCs build relationships of comfort and trust, making members feel free to collaborate across PLCs, to talk openly about the needs of students, and suggest vital practices that will enhance support for all

students" (p.35). Teachers were able to collaborate and share ideas, experiences, resources, and new knowledge to build professional relationships on trust and communication in PLCs that practiced reflective discourse (DeGroot, Endedijk, Jaarsma, Simons, & van Beukelen, 2014). Findings from this study included that the teacher participants expressed the need to collaborate with fellow Montessori teachers to share resources and lesson ideas. Active communication among the Montessori teachers and administrators at the study site is vital to the organization of an effective PLC in addressing academic success and achievement for all students.

According to Adams and Vescio (2015), PLCs are networks made up of a diverse group of teacher-learners with individual needs to address so PD programs must be tailored accordingly. PD programs and PLCs should not all be the same or one size fits all. In most recent cases, PLCs have been deliberate with having teachers' time restraints and educational responsibilities in mind. McConnell, Parker, Eberhardt, Koehler, and Lundeberg (2013) conducted research on virtual PLCs, which revealed teachers preferred in-person collaboration, however deemed online meeting spaces as a convenient alternative. Virtual discussion platforms make it conceivable for teachers to maintain their professional network particularly when scheduling meetings with faculty become a barrier (Hall, George, & Steislebaur, 2013). Additional researchers on online PD advised that the use of technology for teacher collaboration is an effective strategy of communication in the digital age when properly facilitated and structured (Darling-Hammond & McLaughlin, 2011; Evans, 2015). Every learning institution is unique and

PD should be customized to meet the distinct needs of school-community members on site and remote (Grigal, Hart, & Migliore, 2011).

Carpenter and Krutka (2015) conducted a case study on PD and school partnerships. The researchers concentrated on how schools that participated in consistent PD positively affected the academic success for students (Carpenter & Krutka, 2015). The research site was selected decisively due to its participation in the PD school partnership with local state college aimed at promoting the overall well-being of local community members academically, socially, medically, and economically (Carpenter & Krutka, 2015). All educators at the school were recruited as participants for the study. Capenter and Krutka (2015) collected data from observations, semi-structured interviews, focus group discussions, and document analysis. Findings displayed PLCs could promote teacher leadership through PD that offered teachers opportunities to be participative leaders within their various learning institution (Carpenter & Krutka, 2015). Results from Carpenter and Krutka's (2015) study also suggested that PD school partnerships also permit teachers to be productive members of their PLCs as they validate their leadership roles through collaborative involvement and learning within the local community. PLC models are making a shift from focusing on teaching to focusing on student learning and student achievement (DuFour, 2014). Providing quality education must be a collaborative endeavor that the Montessori program administrators, teachers, staff, and local stakeholders all take part in, as communities to ensure the students in the Montessori program are successful.

Developing a high-quality PLC will involve a great deal of flexibility on behalf of teachers and cultural change within the institution contingent with school reform (DuFour, DuFour, & Eaker, 2008). School administrators seeking to implement PD would create a PLC to mediate teachers' resistance to change and assure success (Song, 2012). A productive school culture is created by an effective PLC that is comprised of educators committed to student achievement through continuous PD and collaborative efforts (Bieler, 2012). PLCs prosper on connections educators make while planning, working, learning, brainstorming, and collaborating ways to enrich their students' educational experience (Linder, Post, & Calabrese, 2012; Stewart, 2014; Van Driel & Berry, 2012). Collaborative effort on behalf of program administrators, faculty, support staff, and local stakeholders at the research site will allow for the launch of a PLC comprised of school-community members who work together on one accord to improve student achievement and academic success of the Montessori program.

Capacity Building

Administrators play a vital role in capacity building during the change process. Capacity building can be defined as a school-wide, proactive set of strategies put in place to impact skills, beliefs, and priorities of the organization through the change process (Bain, Walker, & Chan, 2011) or the utilization of a school's resources to support and sustain the change process (Crowther, 2011). Both parts of the definition are significant as they combine to highlight the focus on influencing skills, knowledge, and priorities, and the act of mobilization. The inclusion of the word *mobilization* exemplifies the

shared sense of purpose, the level of preparation and obligation, and the intentional collaboration that must be encompassed in any successful action plan for change.

Capacity building must be merged into the change process by embedding it into the actual work that is completed. Fullan (2008) noted that learning that occurs in settings such as conferences, workshops, and classes must be combined with learning opportunities in the workplace. There is an essential need for both routine and invention. A new method or system will not create lasting change; inserting these techniques, strategies, and best practices into an organizational culture is what will make change occur (Fullen, 2008).

Administrators must be able to affect the climate and culture in the school to display support of the goals and priorities of a shared vision that includes inclusion of all staff at its core (Harsh & Mallory, 2013). When considering the fidelity of the Montessori program, McMaster (2015) noted the investment, or lack of investment, towards Montessori program components provides information about the beliefs and values of the teachers and administrators of the Montessori program. While individuals may grow, and increase their own capacity, to build capacity in a school system, it must be down at the macrostructure level (Harsh & Mallory, 2013; Hoppey & McLeskey, 2016). There must be a critical mass working toward change for an influence on the school system (Drago-Severson, 2012). An administrator can create these conditions through distributed leadership opportunities and by supporting and participating in ongoing Montessori PD opportunities.

Creating a Change in Culture

Active PD will have an effect on changing the culture in the learning

environment. This can be challenging depending on the strength and duration of the PD

(Bartolini, Laconte, & Worth, 2014; Janusheva & Richardson, 2012). Killion (2011)

noted that effective PD could potentially be used to change and/or increase knowledge

and skills, attitudes and beliefs, content delivery, and student achievement.

Transformation is difficult if staff members have not incorporated the new vision and

continue to base decisions and priorities on standards that do not support the new work

(Nishimura, 2014). Whether schools are operating from an existing vision or are

implementing a new plan, it is vital that the vision of the school be communicated clearly

too all stakeholders (Coviello & DeMatthews, 2016). If people are working on different

goals, the lack of consistency will have a negative effect on the desired change, and the

culture and climate of the building (McKinney, Labat, Jr., & Labat, 2015). Effective PD

facilitators and planners who recognize the importance of adapting content to

individually benefit teachers to develop deeper comprehension of their role in the larger

context, permitting them to think in an analytic way and make informed decisions

consistent with the likeminded goal (Parsons et al., 2016). When administrators provide a

precise vision, illustrate common practices, and provide opportunities to learn

collectively, they support the teachers' development of knowledge and skills and

demonstrate the importance of consistency for all stakeholders, which serves to enhance

academic success (Sabanci, Ahmet Sahin, Sonmez, & Yilmaz, 2016). PD facilitators and

planners that provide staff with the skills and strategies essential to accommodate the

needs of the learners in their classrooms decrease the negative effect on student achievement (Kraft, Marinell, & Yee, 2016).

Heath and Heath (2010), Killion (2011), Hall and Hord (2015), McCarley, Peters, and Decman (2016) have prioritized clarity of goals and focus for PD. One additional way to form the focus for the PD is to begin by planning the assessment process (Killion, 2011). Creating the needs assessment process provides data to support expectations for short, medium, and long-term PD goals, based on the learning needs identified in the needs assessment. The administrators of the Montessori program must reflect on the goals and vision of the program to ensure the content is implemented as intended. Our learning goals should provide learners with precise probabilities of the knowledge obtained, the ability to produce results, and concepts for next steps. It is our duty as educators to create the learning opportunity, openly communicate the focus and expected outcomes, and then support all stakeholders involved reach the vision and goals as planned.

Project Descriptions

The project designed is a 3-day PD training that will be implemented in the summer 2018. The proposed PD project for kindergarten Montessori teachers and administrators at the research study site includes 3 in-service days which will include activities, discussions, training sessions, and making Montessori resources. The 3-day PD is designed for the teachers and administrators in the Montessori program working collaboratively to enhance the fidelity of the program. The PD will be divided into 3 days with a different focused concept for each day. Day 1 will be an overview of the

Montessori program in the morning session. In the afternoon of Day 1, small groups including the teachers and administrators will engage in with basic conversations in reference their experiences teaching or supervising the Montessori method/program. Day 2 will be a cross curricular forum, focused on how the Montessori program is implemented across the district at the various campuses. Administrators and Montessori teachers will have a chance to collaborate and review the vision and goals of the program. The afternoon session on Day 2 will consist of reviewing the Montessori lessons and Texas Essential Knowledge and Skills (TEKS), state standards linked to lesson plans. Day 3 will be a "Make It/Take It" day for the teachers. The morning of Day 3 will focus on Math and Language lessons, and the afternoon will be a continue to focus on content and making the resources to support the differentiation components involved in the Montessori program.

Resources and Existing Supports

The lead teachers from each campus (5 teachers) will assist the Montessori specialist each day of the PD in presenting the lessons and checking for understanding from the participants. Prior to and during the PD, I will need laptop access, the Internet, a photocopier and paper, markers, chart paper, Post-It notes, the district projector, and the district conference room. Prior to the PD, I will be sure to have all copies of the PD handouts, and reading materials in both electronic and hard copies. There will be a laptop per table so that each participant can work on the documents electronically if that is a preference. There will be a small budget allotted for candies and bottled water. Breakfast and lunch will be the responsibility of the participants. The three-day PD will be

scheduled during the participants' contracted workdays that are intended for district PD which will eliminate the need for substitutes or additional pay for the participants. An itemized list of the itmes needed and the estimated cost of each are detailed below.

Table 10

Projected cost of PD items

Items	Estimated Cost
Materials (paper, staples, name tags, pens, chart paper, notebooks, etc.)	$250.00
Substitutes	$0.00- PD sessions will be during scheduled planning times in the summer
Snacks/Food	$100.00- Snacks and water will be provided. Lunch will be the responsibility of the participant
Room Rental	$0.00
Total Estimated Cost of PD	$350.00

Potential Barriers and Solutions

The largest potential barrier to this PD is the process to schedule additional training for administrators and teachers over the summer. Many of the summer trainings have already been planned by the district. Adding another PD may not be well received with the targeted audience due to the PD previously scheduled. However, in meeting with the Director of Early Childhood Director to present the plans for this PD may prove to be beneficial. The teachers return to work two weeks prior to the start of school and the in-service days are planned by building principals. This valuable PD will enhance the knowledge and skill set for not only the Montessori teachers but administrators as well.

Proposal of Implementation and Timetable

      The proposed 3-day PD will be planned out in 3 consecutive days due to the teachers and administrators, attending will come from various campuses in the district. The recommendation is that there will be planning days blocked on official school calendar for PD on the district calendar. Proactively the blocked time on the district calendar will help in securing dates and the needed conference rooms and appropriate space in which to conduct the PD. The timeline for the PD is outlined in the table below:

Table 11

Timeline for PD

Date of session	Outline of the Daily Goals
Summer 2018	• Goal 1: Obtain permission to conduct the PD and share a copy of the PD plan and agenda with district leadership • Goal 2: Meet and greet cross district Montessori teachers and administrators • Goal 3: Provide an overview of Dr. Maria Montessori and the Montessori philosophy and components to promote fidelity • Goal 4: Small group discussion with teachers and administrators sharing experiences and expectations, visions, and goals of the Montessori method
Summer 2018	• Goal 5: Align Montessori lessons to Texas State Standards TEKs • Goal 6: Cross-curricular forum with Montessori teachers and administrators discussing how Montessori aligns with state requirements including Kindergarten TEKs • Goal 7: Create Montessori lesson plans
Summer 2018	• Goal 8: Make Montessori resources for the areas of Math and language

Roles and Responsibilities

The overarching goal of the PD for the Montessori educators is to improve the quality of teaching at the study site to enrich all kindergarten Montessori students' academic achievement and educational experience while ensuring the fidelity of the program is being upheld. Every Montessori teacher and administrator participant will have the responsibility of coming to each PD session with an open mind, be willing to collaborate, and fully be engaged in the content being delivered. My initial responsibility will be to meet with the director of early childhood in LISD1 to present my findings and to ask how to proceed for permission to schedule and facilitate this PD. If granted permission, I will oversee facilitation of the PD, schedule the dates, gather materials, book the conference room, and arrange for district teachers and administrators to be available to support the PD. Discussions of PD from this project study have been presented to district leadership and district leaders agreed PD would benefit all

stakeholders. PD presenters (lead teachers and Montessori Specialist) would be responsible for arriving to the sessions prepared and active engagement during their presentations. I will provide the content curriculum needed to facilitate each PD session.

Project Evaluation Plan

Summative evaluations will be used to evaluate this project in order to determine overall satisfactory. Project evaluation is vital to assess the weaknesses and strengths of the PD program (Caffarella & Daffron, 2013). Looney (2011) commented that, "summative evaluation is sometimes referred to as an assessment of learning and a formative evaluation, as assessment for learning," (p. 7). The justification for using this specific evaluation is that it will allow comparison of the teacher and administrator perceptions of effectiveness both at the end of each day of the PD. The feedback will assist in making necessary adjustments to the content if needed. These data will help to tailor and improve future district PD opportunities. Participants will complete evaluation forms at the close of each session and will have a more comprehensive evaluation form to complete after the final session. Prior to the 3-day PD participants will complete an informative needs assessment indicating what they already know, what they want to learn, and any questions they have that need to be addressed during the PD.

Summative evaluation will be used to evaluate outcomes of the project in its entirety. This type of evaluation is useful to conclude if the project goals were achieved (Black, 2012). At the close of each day, participants will write a reflection of the day that only they will see and share only if they decide to do so. Reflective writing can be constructive to the PD for novice and seasoned teachers and administrators (Gallego,

2014). This specific evaluation will allow participants the opportunity to document their

own learning. Shared feedback indicating the need for adjustments to promote learning

will be honored and addressed.

The PD project for kindergarten Montessori teachers and administrators at the

research study site includes 3 in-service days which will include activities, interactive

discussions, demonstration sessions, sharing the alignment of program components and

philosophy with the state TEKS, creating lesson plans and making Montessori resources

to support the differentiation for students in the program. One goal of the project is to

assess and enhance the Montessori's educators' knowledge of the Montessori philosophy

and content delivery process specific to the components examined in this study. Another

goal of the PD is to get the Montessori instructors to understand the concept of adult

learning and learn how to effectively implement andragogical practices within their PLC

meetings and future PD sessions. The overarching goal of the PD for the Montessori

educators is to improve the quality of teaching at the study site to enrich all kindergarten

Montessori students' academic achievement and educational experiences while ensuring

the fidelity of the program is being upheld.

The key stakeholders for this project study are district administrators and teachers.

The stakeholders will also be asked to participate in the 3-day PD project and complete

summative evaluations to evaluate the effectiveness of the PD content. The data collected

from the PD evaluations will be shared with all stakeholders in order to demonstrate the

efficiency of preparing teachers and administrators to implement the Montessori method

with fidelity within the study district to meet the needs of all kindergarten students. In the next section, I will address implications for social change.

Project Implications

Local Impact

This project is built on findings from Section 2, which revealed the fundamental factor that presently has an influence on the Montessori program in LISD1. It was evident that the Montessori teachers and administrators at the study site needed additional of PD. The teachers and administrators expressed more resources are needed as well as a recap of the fundamental principles of the Montessori philosophy. As a solution to the research problem, this project was developed to meet the needs of the Montessori teachers and administrators to improve the quality of education and enhance academic success at the study site.

The overall evaluation goals for this project will include increasing the skills and strategies used by Montessori teachers and administrators in terms of philosophy, strategies, lesson planning, and content delivery with the outcome of enhancing student achievement in this population. Once the teachers receive additional PD, there will be a potential increase in the academic success for all students at the study site (Taylor, 2015). This project has implications for social change due to the impact and benefits for teachers, administrators, and students.

Far-Reaching

This project recommends a PD program for Montessori teachers and administrators to skillfully and effectively implement strategies to enhance academic

success within the program. PD for the Montessori teacher and administrators is the most

effective approach to enhance the chances that all Montessori students will achieve

academic gains, which will strengthen chances for academic success in the next grade of

transition. In the larger context, this project strives to change previous Montessori

training by adding more content, adjusting the structure of how teachers are trained,

making extension Montessori materials for differentiation, and adding PD for

administrators.

Conclusion

Section 3 followed from the results outlined in Section 2. A 3-day PD was

developed based on details from data results. A comprehensive description of the PD,

including a project description, goals, rationale, and evaluation plans were comprised in

Section 3. Section 3 closed with the implications of this PD for social change in the study

district, as well as on a larger scale. Section 4 will discuss project strengths and

limitation, as well as alternative considerations. Section 4 will close with reflections on

scholarship, project development and evaluation, and leadership and change.

Section 4: Reflections and Conclusions

In Section 4, I present my reflections and conclusions on the project study. In this section, I include recommendations for alternative approaches that might be considered to assist in this area as well as implications, applications, and directions for future research. I also present specifics regarding leadership and change and analysis of being a scholar, practitioner, and project developer. Section 4 concludes with the project's social change implications, applications, and directions for future research.

Project Strengths and Limitations

This project study was conducted to determine the FOI of the Montessori program as designed. Data analysis revealed that participants thought more PD, resources, and administrator training could enhance academic success in the Montessori program. In response to the findings, I developed a PD project for Montessori teachers and administrators as a solution to address the need for additional PD as a refresher on the Montessori philosophy and program components. The PD project also addressed administrator Montessori training and the information needed to make Montessori resources for the classroom to support differentiation for students.

The project is 3-day PD program in which the Montessori educators will improve the overall quality of learning and teaching at the study site. PD was the most effective method to promote collaboration and team building with all educational stakeholders of the Montessori program. To improve student learning, Montessori educators must be knowledgeable in regard to the factors that will potentially influence student achievement, and PD training will help them address barriers. Montessori teachers and

administrators will be provided with strategies to foster relationships with students, colleagues, administrators, and parents that will positively influence learner achievement. The PD project was designed based on research that promotes the PD of teachers and administrators to boost student learning.

The essential elements of effective schools are PD programs for teachers and administrators that include the establishment of a PLC that allows them to collaborate on best practices to increase student achievement (Hawley & Rollie, 2007). The PD project designed in the current study includes opportunities that will promote collaboration and team building among the teachers and administrators of the Montessori program. Teachers and administrators will work together as a cohesive team to improve the quality of education within the Montessori program. They will brainstorm as leaders and change agents to implement improvement efforts. PD, if appropriately designed and planned, can result in successful learning for students (Skerbetz & Kostewicz, 2013). Hawley and Rollie (2007) observed that education professionals who engage in PD are better trained to meet the needs of their learners. One of the original concerns regarding the implementation of the Montessori program was that teachers would not follow daily routines. To follow the Montessori philosophy routines and procedures are practiced daily (see Skerbetz & Kostewicz, 2013). Repeated avoidance of routines and procedures could hinder the success of the program or intervention being implemented (see Razer et al., 2013). Without specific PD and consistent coaching to aide teachers in recognizing this issue, the cycle could continue.

Recommendations for Alternative Approaches

Teachers and administrators must engage in experiences that allow them to practice the skills learned to enhance their self-efficacy as Montessori educators. One alternative approach was to have monthly PLCs for all Montessori teachers and administrators to discuss experiences and content delivery and to address questions. This approach would allow opportunities for cross-district collaboration to share what is working and what is not working. Another alternative was offering teachers the opportunity to coach each other, model Montessori teaching strategies, observe one another, and provide feedback to each other as peers. This approach could foster growth of the teachers and result in stronger collaboration skills. The last alternative approach was to have teachers collaborate when writing lesson plans specific to Montessori instruction. Collaborating while writing lesson plans could provide the Montessori teachers with additional support and a sense of accountability to ensure lessons meet the standards of both the Montessori philosophy and state objectives. Utilizing the PD approach will encompass all of these learning and teaching strategies while presenting opportunities for teachers to reflect on their individual classrooms and the needs of their students.

Scholarship

Through this educational journey, I have learned that scholarship is about the endless quest for knowledge. As a lifelong learner, I realize knowledge is infinite and I enjoy learning new things. According to Marx and Harris (2006), "knowledge is acknowledging that the person at the top will not and cannot pretend to know everything"

(p. 13). I am naturally inquisitive, and conducting research was by far the most rewarding part of this doctoral journey. I knew I wanted to research the Montessori method, but finding a research focus was difficult. After many conversations, I decided to conduct an FOI study on the kindergarten Montessori program in LISD1.

Completing the research process taught me about perseverance, strength, patience, and a hunger and determination to finish what I started. Through this process, I have developed my writing skills to reflect the work of a scholar, including the use of scholarly language. In this journey, I have dedicated my time to reading, searching, writing, researching, rewriting, and rereading until my study met the standards of Walden University. Being a lifelong learner, I will continue to seek new knowledge.

Project Development and Evaluation

The project developed in this study is a 3-day PD program for the teachers and administrators at the Montessori program in LISD1. The theoretical framework that guided the project was Knowles' adult learning theory because of the differences between the way children and adults learn (Chan, 2010; Holton & Swanson 2012; Knowles, 1980, 1990, 1995; Tough, 1979). I selected a PD project because student success can be improved if teachers receive PD that helps them meet the needs of their students (see Blanford, 2012). The primary goal of the PD project was to improve the quality of teaching, to enhance the Montessori teachers' and administrators' learning, and to improve overall student achievement in the program. The formative evaluation for the PD project will include daily reflections and feedback from participants who will rate the

effectiveness of the content. The project will also be evaluated based on the Montessori students' academic and performance.

Leadership and Change

Educators are natural leaders in their individual learning environments. I recognize my position as a leader of change. Teachers are change agents within the institutions they serve (DuFour et al., 2008). To be an effective leader, I had to learn to follow. A leader's role encompasses responsibility, accountability, and flexibility, all of which were strengthened during this doctoral journey. A leader must also be a visionary and see possibilities when others see an immovable obstacle. Fullan (2008) commented that "effective school leaders are strong educators, anchoring their work on central issues of learning and teaching "(p. 251). As an educational leader, I have to be open to change. Leaders should dedicate themselves to enhancing student success and school quality.

Reflection on the Importance of the Work

This doctoral journey has provided me with strength, courage, and wisdom. This journey has been without a doubt the most challenging yet rewarding mission in my academic career. Through this journey, I was pushed beyond my limits as a scholar. I have witnessed firsthand the growth and commitment it took to get to this point in the doctor of education program. There were moments when I was doubtful; however, giving up was never an option. This journey required focus, sacrifice, resilience, and determination to remain persistent. I learned how to analyze, disaggregate, and triangulate data, and find viable solutions to problems. I developed a skill for independent

learning. I take great pride in the advances I have made academically, professionally, and personally.

I realize my contribution to the field of education is just beginning, as I am a novice scholar. The doctoral journey has shown that I can achieve any goal if I work hard and persevere. Through this journey, there were times I had to push myself to work and complete assignments, revise documents, revise edits, and search for literature. I struggled, but I remained steadfast to see this journey to the end. Through diligence, persistence, discipline, and scholarship, my dream of becoming a doctor is within reach.

I was very impressed by my ability to create a project as a solution to the research problem, which I am passionate about eliminating. Developing the PD project for the Montessori teachers and administrators took a substantial amount of planning. I had to fine-tune my time management, prioritization skills, and organizational skills to complete the project. Several edits and revisions were made to make my doctoral project acceptable to my committee chairpersons, university research reviewer, colleagues, and fellow education professionals. The final product is confirmation of my experience as a problem solver and project developer.

Implications and Applications

The project served as a solution to allow the teachers and administrators to collaborate and enhance their knowledge of the Montessori philosophy, which will improve the FOI of the Montessori program (see Appendix A). As a result of the findings of this study, I created a 3-day PD initiative designed for Montessori teachers and administrators within the research district aimed at creating advanced Montessori

resources; providing information specific to the Montessori program such as an overview of key components; reviewing the Montessori philosophy; and allowing for the district Montessori teachers and administrators to collaborate on the design, delivery, and fidelity of the Montessori program. Findings from this study indicated that solutions to the research problem should focus on the development of a PD project for the Montessori educators. The PD project will offer opportunities for Montessori teachers and administrators across the district to collaborate and share experiences as educators in the Montessori program, which will enhance teacher and administrator professional efficacy, improved FOI of the Montessori program, and increase student achievement.

Directions for Future Research

This project study provides insight into the implementation of the Montessori components that influence the Montessori program's fidelity. Thus, the resulting 24-hour PD for the Montessori educators will address the gap in practice by providing empirical data upon which the stakeholder may craft other supports for the program. The project's implications for future research are important to the effectiveness of the kindergarten Montessori program by tracking the long-term effect of classroom content delivery ensuring the vision and goals intended for the kindergarten Montessori program is implemented with fidelity. This research project is a single study at one study district. It would be beneficial to continue to track students throughout their elementary years to obtain data of academic gains or loss and implement a progress monitoring system that will provide teacher and administrator support the fidelity of the kindergarten Montessori program. Future research concerning Montessori program implementation could also be

conducted in districts that share the demographic makeup academically and

socioeconomically. The data generated from another case study using alternative study

sites may allow for the comparison and contrast of the FOI, which could be beneficial for

all stakeholders.

Conclusion

The purpose of this study was to determine the FOI of the Montessori program as

designed so that results from the FOI study could be used to refine the Montessori

program's implementation at the study site. The problem was studied due to the study

district's leadership not having evaluated the Montessori program in terms of FOI and not

knowing if the program was being implemented with fidelity in order to meet the needs

of students being served in the Montessori program. Findings from this study revealed

emerging themes that have an influence of the fidelity of the Montessori program

implementation. Administrative support and capacity building for the Montessori

program, limited advanced Montessori resources for differentiation, peer coaching

component to support new teacher implementation of the Montessori Method with

fidelity, precise and consistent comprehension of the Montessori Learning Model and

components, and relevant and targeted PD and peer support for novice teachers is needed

to support FOI. Study results guided the development of a PD project that include the

following goals:

- Goal 1: The Montessori teachers and administrators will gain a deeper

  understanding of the Montessori education philosophy and content delivery

  process.

- Goal 2: The Montessori teachers and administrators will understand adult learning theory in order to build collaborative efforts, provide peer mentor and administrative support, and professional development to provide ongoing support for the fidelity of the Montessori program.

- Goal 3: The Montessori teachers and administrators will collaborate with fellow Montessori educators in the district to support the fidelity of the Montessori program.

- Goal 4: District Montessori teachers will design lesson plans and share resources to align with state standards and the fundamental components of the Montessori philosophy.

- Goal 5: District Montessori teachers will have the opportunity to make Montessori instructional materials to use in their personal classrooms.

- Goal 6: The Montessori teachers and administrators will gain the strategies to enhance the quality of teaching at the study site to enrich all kindergarten Montessori students' academic achievement and educational experience while ensuring the fidelity of the program is being upheld.

Educated individuals possess skills and knowledge that put them in an improved status to promote to the productivity of society, which benefits everyone (Strong, 2007). The PD also needs to be supported in an ongoing manner. The ultimate goal is to ensure the Montessori program is being delivered with fidelity as designed. The study site administrators and Montessori teachers must continue to plan for future collaboration and

there must be scheduled coaching, continued conversations, supportive PLCs, and

accountability to support all stakeholders.

References

Abry, T., Rimm-Kauffman, S., Larsen, R., & Brewer, A. (2014). The influence of fidelity
of implementation on teacher-student interaction quality in the context of a
randomized controlled trial of the responsive classroom approach. *Journal of
School Psychology, 51*(4), 437-453. doi:10.1016/j.jsp.2013.03.001

Adams, A., & Vescio, V. (2015). Tailored to fit: Structure professional learning
communities to meet individual needs. *Journal of Staff Development, 36*(2).
Retrieved from https://learningforward.org/docs/default-source/jsd-april-
2015/tailored-to-fit.pdf

Adams, C. (2014). *Interest based strategies team discusses professional development and
compensation.* New York, NY: McGraw-Hill Education.

Alford, H. (2014). Classroom assessment: Teacher practices, student perceptions, and
academic self-efficacy beliefs. *Social Behaviors, 44*(5), 338-356.
https://doi.org/10.2224/sbp.2014.42.5.835

Allain, J. (2015). Fidelity reality: Practical application of research. *Journal of School
Psychology, 75*(3), 18-36. Retrieved from
https://www.sciencedirect.com/journal/journal-of-school-psychology

Ansari, A., & Winsler, A. (2014). Montessori public school pre-K programs and the
school readiness of low-income Black and Latino children. *Journal of
Educational Psychology*, *106*(4), 1066-1079. doi:10.1037/a0036799

Anyon, J. (2014). *Radical possibilities: Public policy, urban education, and a new social
movement*. New York, NY: McGraw-Hill Education.

Arce, J., Bodner, G. M., & Hutchinson, K. (2014). A study of the impact of inquiry-based professional development experiences on the beliefs of intermediate science teachers about "best practices" for classroom teaching. *International Journal of Education in Mathematics, Science and Technology, 2*(2), 85-95. Retrieved from www.ijemst.com

Ayer, D. (2016, October 12). Public, private, or something in between? A new model for Montessori schools. *Montessori Public*. Retrieved from http://www.montessoripublic.org/2016/10/3414/

Bagby, J. H. (2010). Montessori education and practice. *Montessori Life*, *22*(1), 44-51. Retrieved from https://amshq.org/Publications-and-Research/Montessori-Life

Bain, A., Walker, A., & Chan, A. (2011). Self-organization and capacity building: Sustaining the change. *Journal of Educational Administration, 49*(6), 701-719. doi:10.1108/09578231111174839

Bain, R. (2012). Mapping the teacher educational terrain for novices. *Phi Delta Kappan*, *93*(5). Retrieved from https://www.journals.elsevier.com/journal-of-school-psychology

Baldwin, S., Buchanan, A., & Rudisile, M. (2007). *Learning about diversity*. San Francisco, CA: Jossey-Bass.

Bartolini, V., Worth, K., & Laconte, J. E. J. (2014). A shift to inquiry: The heart of effective teaching and professional development for the twenty-first century. *New Educator, 10*(1), 53-61. doi:10.1080/1547688X.2014.868229

Bayar, A. (2014). The components of effective professional development activities in

terms of teachers' perspective. *International Online Journal of Educational

Science, 6*(2), 319-327. doi:10.15345/iojes.2014.02.006

Beaver. W. (2009). For-profit higher education: A social and historical analysis.

Sociological Viewpoints, *25*(1), 53-73. Retrieved from

https://www.questia.com/library/p436761/sociological-viewpoints

Berry, J. (2015). Child control in education decisions: An evaluation of targeted

incentives to learn in India. *Journal of Human Resources*, *50*(4), 1051-1080.

Retrieved from http://jhr.uwpress.org/

Bieler, D. (2012). Possibilities for achieving social justice ends through standardized

means. *Teacher Education Quarterly*, *39*(3), 85-102. Retrieved from

http://www.jstor.org/stable/23479684

Black, D. (2012). Middle income peers as educational resources and the constitutional

right to equal access. *Boston College Law Review*, *53*(2), 373-438. Retrieved from

https://www.bc.edu/bc-web/schools/law/academics-faculty/law-reviews/bclr.html

Blackford, P. (2013). A comparison of traditional and reform curricula in an elementary

school. *British Educational Research Journal*, *112*(4), 689-697.

doi:10.1080.0411921003734645

Blanford, S. (2012). *Managing professional development in schools*. New York, NY:

Oxford University Press.

Biggs, J. (1999). What the student does: Teaching for enhanced learning. *Higher

Education Research & Development*, *18*(1), 57-75. Retreived from

http://www.herdsa.org.au/higher-education-research-development

Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An introduction to theories and methods.* Boston, MA: Laureate Education.

Boroch, D., Fillpot, J., Hope, L., Johnstone, R., Mery, P., Serban, A., & Gabriner, R. S. (2007). *Basic skills as a foundation for student success in California community colleges.* New York, NY: Corwin Press.

Bottoms, G., Egelson, P., Sass, H., & Uhn, J. (2013). *Improving the quality of career and technical alternative teacher preparation: An induction model of professional development and support*. New York, NY: Corwin Press.

Boulmetis, J., & Dutwin, P. (2014). *The ABCs of evaluation*: *Timeless techniques for program and project managers.* San Francisco, CA: Jossey-Bass.

Brekke, J. (2012). *It will never happen to me: Growing up with addiction as youngsters, adolescents, adults* (3rd ed). Center City, MN: Hazelden.

Bridges, E. M. (2006). *The incompetent teacher: Managerial responses*. Oxon, England: Routledge.

Burner, J. (1983). Play, thought, and language. *Journal of Education*, *60*(3), 60-69. doi:10.1080/01619568309538407

Butler, D., & Schnellert, L. (2012). Collaborative inquiry in teacher professional development. *Teaching and Teacher Education*, *28*(8), 1206-1220.

Caffarella, R., & Daffron, S. (2013). *Planning programs for adult learners: A practical guide*. San Francisco, CA: John Wiley and Sons.

Callender, W. (2014). *Using differentiation in secondary schools: Training manual for*

successful implementation. New York, NY: Corwin Press.

Carpenter, J. P., & Krutka, D. G. (2015). Engagement through microblogging: Educator professional development via Twitter. *Professional Development in Education*, *41*(4), 707-728. doi:10.1080/19415257.2014.939294

Carroll, C., Paterson, M., Stevenson, A., & Woode, S. (2007). *The quality of documentation and reporting of fidelity of implementation strategies*. San Francisco, CA: Corwin Press.

Carter, B. (2013). An initial exploratory analysis of the fidelity of implementation in rural schools. *The Researcher*, *26*(1), 34-39.

Carter, D. (2013). What teacher candidates learned about diversity, social justice, and themselves from service-learning experiences. *Journal of Teacher Education*, *58*(4), 315-327.

Casety, S. (2013). A systematic review and summarization of the recommendations and research surrounding curriculum-based measurement of oral reading fluency. *Journal of School Psychology*, *51*(1), 1-18.

Castro-Villarreal, F. (2014). Teachers' perceptions and attitudes a response to collaborative learning. A qualitative analysis. *Teaching and Teacher Education 40*(1), 104-112. doi:10.1016/j.tate.2014.02.004

Chan, S. (2010). Applications of andragogy in multi-disciplined teaching and learning. *Journal of Adult Education*, *39*(2), p. 25-35.

Chattin-McNichols, N. (2014). A framework for integrated academic and behavioral Intensive Intervention. *Learning Disabilities Research & Practice, 30*(4), 150-

158.

Chen, T. (2014). *Academic revolutionary models*. New York, NY: Pegamon Press.

Choi, K., & Tam, R. (2015). *Professional learning, induction and critical reflections.*
New York, NY: Stringler Press.

Cochran-Smith, M., Shakman, K., Jong, C., Terrell, D. G. Barnatt, J., & McQuillan, P.
(2009). Good and just teaching: The case for social justice in teacher education.
American Journal of Education, 115(3), 347-377.

Coleman, R., & Goldenberg, C. (2010). What does research say about effective practices
for English learners? *Kappa Delta*, *46*(1), 10-16.

Confer, J., & Ramierz, S. (2012). Self-efficacy: Toward unifying theory of behavioral
change. *Psychological Review, 84*(2), 191-225.

Cook, C. (2013). Policies that support professional development in an era of reform. *Phi
Delta Kappan, 92*(6), 81-92.

Cossentino, J. M. (2006). Big work: Goodness, vocation, and engagement in the
Montessori Method. *Curriculum Inquiry*, *36*(1), 63-92.

Coviello, J. C., & DeMatthews, D. E. (2016). "This too shall pass": A new principal's
experience with school improvement. *Journal of Cases in Educational
Leadership, 19*(2), 43-51. doi:10.1177/1555458915626764

Creswell, J. W. (2010). *Qualitative inquiry and research design: Choosing among five
approaches.* (Laureate custom ed). Boston, MA: Pearson.

Creswell, J. W. (2012). *Narrative research: The mixed methods approach.* (Laureate
custom ed). Boston, MA: Pearson.

Creswell, J. W. (2014). *Educational research: planning, conducting, and evaluating quantitative and qualitative research* (Laureate custom ed). Boston, MA: Pearson.

Crowther, F. (2011). *From school improvement to sustained capacity: The parallel leadership pathway*. Thousand Oaks, CA: Corwin Press.

Dane, A., & Schinder, B. (2013). *Program integrity in primary and early secondary prevention: Are implementation effects out of control*? Relx Group, NY.

Danner, N., & Fowler, S. (2015). Montessori and non-Montessori early childhood teachers' attitudes towards inclusion and access. *Journal of Montessori Research*, *1*(1), 28–41. doi.10.17161/jomr.v1i1.4944

Debs, M., & Brown, K. (2017). Students of Color and Public Montessori Schools: A review of the literature. *Journal of Montessori Research, 3*(1), 1-15. doi:10.17161/jomr.v3i1.58

DeGroot, E., Endejk, M., Jaarsma, D., Simons, P., & Van Beukelen, D. (2014). Critically reflective dialogues in learning communities of professional studies, *Continuing Education*, *36*(1), 15-37. doi:10.1080/0158037X.2013.779240

Desimone, L. M. (2011). A primer on effective professional development. *Phi Delta Kappan, 92*(6), 68-71. doi:10.2307/25822820

Dobson, L. (2014). Elementary school teachers' acceptability of school reform: Contribution of belief congruence, self-efficacy, and professional development. *Teaching and Teacher Education*, *51*(2), 47-57.

Drago-Severson, E. (2012). New opportunities for principal leadership: Shaping school climates for enhanced teacher development. *Teacher College Record, 114*(3), 1-44. Retrieved from www.tcrecord.org

DuFour, R., & Eaker, R. (2008). *Getting started: Reculturing schools to become professional learning communities*. Blomington, Indiana: Solution Press.

DuFour, R., & Mattos, M. (2013). How do principals improve schools? *The Principalship, 70*(7), 34-40.

Dunst, C. J. (2013). An evidence based approach to professional development. An Interdisciplinary. *Journal of Early Childhood Intervention*, *22*(3), 164-176.

Dunst, C. J., Trivette, C.M., & Raab, M. (2013). An implementation science framework for conceptualizing and operationalizing fidelity in early childhood intervention studies. *Journal of Early Intervention, 35*(2), 85-101.

Eagle, J., Dowd-Eagle, S., Snyder, A., & Holtzman, E (2015). Implementing a multi-tiered system of support (MTSS): Collaboration between school psychologist and administrators to promote systems-level change. *Journal of Educational and Psychological Consultation*, *25*(2-3), 160-177.

Education Reform. (2014). *Education, 44*(2), 356-428.

Ellis, K. (2014). The changing dynamics of teacher qualifications across schools: A statewide perspective post-NCLB. *Education Policy Analysis Archives, 18*(2), 1-31.

Evans, M. (2015). Expanding pockets of excellence with diversity. *The Reading Teacher*, *66*(6), 449-453.

Falasca, M. (2011). Barriers to adult learning: Bridging the gap. *Australian Journal of Adult Learning*, *51*(3), 583-590. Retrieved from https://pdfs.semanticscholar.org/d44e/b9e6b2fca1417bc3367cb3b6c758902e3e0c.pdf

Feez, S. (2011). *Montessori and early childhood: A guide for students*. San Francisco, CA: Sage.

Finn, P. (2011). Critical thinking: Knowledge and skills for evidence-based practice. *Language, Speech, Hearing Services in Schools, 42*(1), 69-72. doi:10.1044/0161-1461(2010/09-0037).

Fosnot, C. T. (2013). *Constructivism: Theory, perspectives, and practice.* Boston, MA: Teachers College Press.

Fox, L., Veguilla, M., & Binder, D. (2014). *Data decision-making and program-wide implementation of the pyramid model.* San Francisco, CA: Sage.

Fullan, M. (2008). *The six secrets of change*. San Francisco, CA: John Wiley & Sons, Inc.

Gagnon, R., & Bumpus, M. (2016). Fidelity and its importance to experiential and outdoor education. *Journal of Outdoor Recreation*, *8*(1), 10-25.

Gardner, H. (2006). Multiple *intelligences:* New horizons. Brooklyn, NY: Basic books.

Gast, D., & Ledford, J. (2014). Single *case research methodology: Applications in special education and behavioral sciences* (2nd ed.). New York, NY: Routledge.

George, A. A., Hall, G. E. & Steiglebauer, S. M. (2013). Measuring implementation in schools: The stages of concern questionnaire. Online: SEDL.

Gerstner, J., & Finney, S. (2015). Measuring the implementation fidelity of student

affairs programs: A critical component of the outcomes assessment cycle.

Research & Practice in Assessment. New York, NY: Kilgore Press.

Gesten, E. (2013). So what happens after the event? Exploring the realization of

professional development with early childhood educators. *Journal of Early

Childhood, 38(1), 11-15.*

Grigal, M., Hart, D., & Migliore, A. (2011). Comparing transition planning,

postsecondary education, and employment outcomes of students with intellectual

and other disabilities. *Career Development for Exceptional Individuals*, *34*(1), 4-

17. doi: 10.1177/0885728811399091

Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed). Boston,

MA: Pearson Education.

Gramble, S. (2014). The effects of teacher and school level factors on teachers'

participating in professional development activate: The role of principal

leadership. *Journal of International Education Research*, *9*(4), 374-380.

Gresham, T. (2014). Professional development and teacher change. *Teachers and

teaching: Theory and practice, 8*(3), 381-391.

Grogan, H., & Bumpus, A. (2016). *Implementing change: Patterns, principles, and

potholes* (4th ed). Upper Saddle River, NJ: Pearson.

Gulamhussein, A. (2014). Teaching the teachers: Effective professional development in

an era high stakes accountability. *Center for Public Education*, pp. 1-47.

Gureckis, T., & Markant, R. (2012). *Response to intervention and continuous school*

improvement: Using data, vision, and leadership to design, implement, and evaluate a school wide prevention system. San Francisco, CA: Corwin Press.

Gunn, J. (2014). Pyramid *response to intervention: RTI, professional learning communities, and how to respond when kids don't learn.* New York, NY: Solution Press.

Hall, G. E., & Hord, S. M. (2015). *Implementing change: Patterns, principles, and potholes*. Upper Saddle River, NJ: Pearson Educational.

Ham, H. (2013). Supporting early childhood teachers to promote children's social competence: Components for best professional development practices. *Early Childhood Education*, *9*(4), 171-179. doi:10.1007/s10643-013-0584-7

Hansen, C. (2014). Response to intervention: Research and practice. *Contemporary Issues in Education Research, 6*(3), 273-277.

Harachi, T. (2013). Effects of teachers' knowledge for teaching on student achievement. *American Educational Research Journal, 42*(2), 371-406.

Harper, L., & Ross, J. (2011). An application of Knowles' theories of adult education to an undergraduate interdisciplinary studies degree program. *Journal of Continuing Higher Education, 59*(3), 161-166. doi:10.1080/07377363.2011.614887

Harsh, S., & Mallory, M. (2013). The future of education: Building capacity for success. *Delta Kappa Gamma Bulletin, 80*(1), 16-25. Retrieved from https://www.questia.com/library/journal/1P3-3083426291/the-future-of-education-building-capacity-for-success

Hassell, H., Dupree, A., & Brasfield, S. (2012). Making the most of professional learning communities. *Knowledge Quest*, *41*(2), 30-37. Retrieved from http://knowledgequest.aasl.org/

Hatch, J. A. (2014). *Doing qualitative research in education settings.* Albany, NY: State University of New York Press.

Hawley, W., & Rollie, D. (2007). *The keys to effective schools: Educational reform as continuous improvement*. New York, NY: Corwin Press.

Heath, C., & Heath, D. (2007). *Made to stick:Why some ideas survive and others die.* [Kindle iOS version]. Retrieved from Amazon.com

Henschke, J. A. (2011). Bringing together personal learning, higher education institutional elements, and global support for a re-orientation toward a focus on lifelong learning and education. In *Encyclopedia of Information Communication Technologies and Adult Education Integration* (p. 1031-1049). IGI Global.

Henson, F. (2013). Fidelity of Implementation and instructional alignment in response to intervention research. *Learning Disabilities Research & Practice, 27*(3), 116-124.

Hill, K. (2015). Professional learning communities: Creating a foundation for collaboration skills in pre-service teachers. *Project Innovation*, *4*(8), 521-528.

Hoaglund, A., Birkenfield, K., & Box, J. (2014). Professional learning communities: Creating a foundation for collaboration skills in pre-service teachers. *Project Innovation*. *4*(8), 521-528.

Hoffester, D. (2014). Teacher *development and the challenges beyond the classroom.* New York, NY: Scott Press.

Hoppey, D., & McLeskey, J. (2016). A case study of principal leadership in an effective

    inclusive school. *The Journal of Special Education, 46*(4), 245-256.

    doi:10.1177/0022466910390507

Hurley, T, Wehby, J., & Feurer, G. (2011). *Professional learning communities:*

    Leadership, purposeful decision making, and job-embedded staff development,

    New York, NY: Corwin Press.

Jao, L., & McDougall, D. (2015). The collaborative teacher inquiry project: A purposeful

    professional development initiative. *Canadian Journal of Education*, *38*(1), 1.

Jones, L. (2015). The importance of professional learning communities for school

    improvement. *Greater Education, 4*(5), 357-361. doi:10.423/c2013.45052

Jordana, V. (2014). Collecting and documenting evidence methods for helping teachers

    improve instruction and promote academic success. *Intervention in School and*

    Clinic, 50(2), 86-96.

Kenner, C., & Weinerman, J. (2011). Adult learning theory: Applications to non-

    traditional college students. *Journal of College Reading and Learning*, *41*(2), 87-

    96.

Kershner, B., & McQuillan, P. (2016). Complex adaptive schools: Educational leadership

    and school change. *Complicity*, *13*(1), 4.

Killion, J. (2011). The perfect partnership: What it takes to build and sustain relationships

    that benefit students. *Journal of Staff Development*, *32*(1), 10.

Kingsbury, M. (2013). Fidelity of implementation framework: A critical need for

    response to intervention models. *Psychology in the Schools, 49*(4), 342-352.

Kinnunen, E. (2014). Multi-tiered system of supports for effective inclusions in secondary schools. *Handbook of effective inclusive schools: Research and practice*. Boston, MA: Corwin Press.

Kline, A. (2009). *Do children need concrete instantiations to learn abstract concepts*? McGraw Press: New York, NY.

Klein-Collins, R. (2010). Fueling the race to postsecondary success: A 48-institution study of prior learning assessment and adult student outcomes. *Council for Adult and Experiential Learning (NJ1)*. Retrieved from http://www.cael.org/pdf/PLA_Fueling-the-Race.pdf

Klingner, J. K., Boardman, A. G., & McMaster, K. L. (2013). What does it take to scale up and sustain evidence-based practices? *Exceptional Children*, *79*(2), 195-211.

Koellner, K., & Jacobs, J. (2015). Distinguishing models of professional development: The case of an adaptive model's impact on teachers' knowledge, instruction, and student achievement. *Journal of Teacher Education*, *66*(1), 51-67.

Kozol, J. (2012). Reducing unnecessary referrals. *Teaching Exceptional Children*, *44*(4), 38-47.

Knowles, M. S. (1968). *The modern practice of adult education: Andragogy versus pedagogy.* San Francisco, CA: Jossey-Bass Press.

Knowles, M. S. (1970). *The adult learner: The definitive classic in adult education and human resource development*. New York, NY, Corwin Press.

Knowles, M. S. (2012). *The self-directed learner. A guide for teachers and students.* Prentice Hall: New York, NY: Cambridge Press.

Knowles, M., Holton, E., & Swanson, R. (2016). *The adult learner: A neglected species*. Gulf Press.

Kraft, M. A., Marinell, W. H., & Yee, D. (2016). *Schools as organizations: Examining school climate, teacher turnover, and student achievement in NYC*. Research Alliance for New York City Schools.

Kunter, M. (2013). Professional competence of teachers: Effects on instructional quality and student development. *Journal of Educational Psychology*, *105*(3), 805.

Lampert, R. (2011). Beyond teacher training: The critical role of professional development in maintaining curriculum fidelity. *Journal of Adolescent Heath, 54*(3), 53-58.

Langbein, W. (2013). The politics of accountability in teacher education policy. *Education Policy*, *27*(2).

Learning Forward Association (2001). Transform Professional Learning. Retrieved from: https://learningforward.org/publications/transform/2001/7/keeping-the-learning-in-learning-communities.

Leonard-Barton, M. & Kraus, A. (2013). Combatting challenges to establishing trustworthiness in qualitative research. *Qualitative Research in Psychology*, *12*(4), 397-414.

Lee, B., & Picanco, K. (2013). Elementary and secondary teacher self-efficacy for teaching and pedagogical conceptual change in a dram-based professional development program. *Teaching and Teacher Education, 30*(2), 84-98. doi: 10.1016/j.tate.2012.10.010

LeLaurin , L., & Wolery, S. (1992). Effective ways of motivating adults for learning in

    professional field. *Canadian Center of Science and Education, 11*(3), 235-241.

Lillard, A. (2005). *The early years: Evaluating Montessori education* (3rd ed.). Boston,

    MA: Oxford University Press.

Lillard, A. (2011). *Montessori, the science behind the genius* (2nd ed.). Boston, MA:

    Oxford University Press.

Lillard, A. (2012). *Playing, learning, and Montessori education*. Boston, MA: Oxford

    University Press.

Lillard, A. (2014). *Evaluating Montessori education*. Boston, MA: Oxford University

    Press.

Linder, R. A., Post, G., & Calabrese, K. (2012). Professional learning communities:

    Practices for successful implementation. *Delta Kappa Gamma Bulletin*, *78*(3), 13-

    22.

Lodico, M., Spaulding, D., & Voegtle, K. (2012). Methods *in educational research:*

    From theory to practice. (Laureate Education, Inc., custom ed.). John Wiley &

    Sons. San Francisco: CA.

Looney, J. (2011). Developing High-Quality Teachers: teacher evaluation for

    improvement. *European Journal of Education*, *46*(4), 440-455.

Lopata, M. (2011). Action research and response to intervention: Bridging the discourse

    divide. *The Educational Forum*, *76*(1), 69-80.

Lumpe, A., Czerniak, C., Haney, J., & Beltyukova, S. (2012). Beliefs about teaching

    science: The relationship between elementary teachers' participation in

professional development and student achievement. *International Journal of Science Education*, *34*(2), 153-166.

Malcom, J., Wood, R., Booth, E., Rick, J., & Bailain, A. (2013). Teacher perceptions and subsequent instructional practices after an intensive professional development program. *School Science & Mathematics*, *113*(1), 16-28.

Mallett, J. D., & Schroeder, J. L. (2015). Academic achievement outcomes: A comparison of Montessori and non-Montessori public elementary school students. *Journal of Elementary Education*, *25*(1), 39–53. Available from the University of the Punjab: http://pu.edu.pk/images/journal/JEE/PDF-Files/3_v25_no1_15.pdf

Marqulis, D. (2012). Self-efficacy, job satisfaction, motivation, and commitment: Exploring learning relationships. *European Journal of Psychology of Education*, *27*(1).

Marsh, J. (2013). Interventions promoting educators' use of data: Research insights and gaps. *Teachers College Record*, *114*(11), 1-48.

Marx, R.W., & Harris, C. J. (2006). No Child Left Behind and science education: Opportunities, challenges, and risks. *The Elementary School Journal*, *106*(5), 467-478.

McCarley, T. A., Peters, M. L., & Decman, J. M. (2016). Tranformational leadership related to school climate: A multi-level analysis. *Educational Management Administration & Leadership, 44*(2), 322-342. doi:10.1177/1741143214549966

McConnell, T. J., Parker, J. M., Eberhardt, J., Koehler, M. J., & Lundeberg, M. A. (2013). Virtual professional learning communities: Teachers' perceptions of

virtual versus face-to-face professional development. *Journal of Science Education and Technology*, *22*(3), 267-277. doi:10.1007/s10956-012-9391-y

Mercer, N., & Howe, C. (2012). Explaining the dialogic processes of teaching and learning: The value and potential of sociocultural theory. *Learning, Culture and Social Interaction*, *1*(1), 12-21.

Merriam, S. B. (2014). *Qualitative research: A guide to design and implement.* San Francisco, CA: Jossey-Bass.

McGrew, D. (2013). *Building teachers: A constructivist approach to introducing education.* San Diego, CA: Cengage Learning Press.

McKinney, C. L., Labat, M. B., Jr., & Labat, C. A. (2015). Traits possessed by principals who transform school culture in national blue ribbon school. *Academy of Educational Leadership, 19*(1), 152-166. Retrieved from http://www.alliedacademies.org/academy-of-educational-leadership-journal/

McKinna, W. (2014). A qualitative inquiry: Teachers' attitudes and willingness to engage in professional development experiences at different career stages. *The Delta Kappa Gamma, 79*(2), 6-14.

McMaster, C. (2015). Culture and the process of change. *International Journal of Whole Schooling, 11*(1), 16-34. Retrieved from www.wholeschooling.net/

McLaughlin, M. W., & Marsh, D. D. (1990). *Staff development and school change. Schools as collaborative cultures:Creating the future now*, 213-232. New York, NT. Teachers College Press.

Mercer, L., & Howe, M, (2012). Factors influencing the establishment and sustainability

of professional learning communities: The teacher's perspective. *International Journal of Business and Social Science*, *5*(11), 23-29.

Mertens, D.M. (2014). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. New York, NY: Sage Press.

Mersenger, S. (2015). *Qualitative research: A guide to design and implementation.* San Francisco, CA: Jossey-Bass.

Metz, V. (2015). *Building communities of learners: Collaboration among teachers, students, families, and community*. Boston, MA: Routledge Press.

Miller, J. (2014). *Qualitative research design: An interactive approach* (SAGE). Thousand Oaks: New York, NY: SAGE Press.

Montessori, M. (1917). *The advanced Montessori method*. Boston, MA: Frederick Stokes Press.

Montessori, M. (1985). *The absorbent mind*. Boston, MA: Clio Press.

Montessori, M. (1989). *The discovery of the child*. New York, NY: Claude Press.

Montessori, M. (2010). *The education of a new world*. Boston, MA: Clio Press.

Montessori, M. (2014). *The child, society, and the world: The advanced Montessori method.* Boston, MA: Clio Press.

Mowbray, S. (2013*). Learning together, leading together: Changing schools through professional learning communities*. New York, NY: Texas College Press.

National Education Association (2002). www.nea.org

Nellis, L. (2012). Maximizing the effectiveness of building teams in response to

intervention implementation. *Psychology in the Schools, 49*(3), 245-256. doi:
10.1002/pits.21594.

Neuman, K. (2002). The relationship between teacher value orientations and engagement in professional learning communities. *Teachers and Teaching theory and Practice*, *4*(1), 1-20.

Nishimura, T. (2014). Postsecondary education for students with disabilities. *The road ahead: Transition to adult life for persons with disabilities*, 177-198.

North American Montessori Teachers' Association (2014). www.namta.org

Nutbrown, C., & Clough, P. (2014). *Early childhood education: History, philosophy, and experience*. San Diego, CA: Sage Press.

O'Conner, E., & Freeman, E. (2012). District-level considerations in supporting and sustaining program implementation. *Psychology in the Schools. 49*(3). 297-310. doi:10.1002/pits.21598.

O'Neill, W., Geoghegan, K., & Peterson, B. (2013). Three-tiered models of prevention: teacher efficacy and burnout. *Education and Treatment of Children, 36*(4), 95-126. doi:10.1353/etc.2013.0037

Orwin, S. (2013). Exploring the instructional strategies of elementary school teachers when developing technological, pedagogical, and content knowledge via a collaborative professional development program. *International Education Studies*, *6*(11), 58-68.

Parsons, A. W., Ankrum, J. W., & Morewood, A. (2016). Professional development to promote teacher adaptability. *Theory into Practice, 55*(3), 250-258. doi:10.1080/00405841.2016.1173995

Pailoor, A. (2014). *Key building blocks for successful teacher professional development*. Boston MA: Corwin Press.

Patton, S. (2013). Highlighting the need for further response to intervention in general education. *Research in Higher Education Journal*, *20*(1).

Patton, K., Parker, M., & Tannehill, D. (2015). Helping teachers help themselves: Professional development that makes a difference. *NASSP Bulletin*, *99*(1), 26-42.

Peray, A. (2014). The impact of teacher self-efficacy on the students' motivation and achievement. *The Theory and Practice in Language Studies*, *3*(2), 478-490. doi:20.4310/tpls.2.3

Percepletchikora, N., & Kazdin, S. (2014). The impact of fidelity of implementation in effective standards based instruction. *Principal*, *88*(1), 38-41.

Peres, D. (2013). Principal's decisions implementing response to intervention. *Educational Policy*, *29*(1), 179-205. doi:10.7711/08959048145567.

Persampieeri, A., Gatmaker, D., Daly, T., Sheridan, R., & McCurdy, B. (2006). The influence of a two-year professional development institute on teacher self-efficacy and use of inquiry-based instruction. *Science Educator*, *20*(2), 47-53.

Peterson, P. (2006). *Choice and competition in American education*. Rowman & Littlefield. New York, NY: Corwin Press.

Peterson, P. (2014). Considering coherence: Teacher perceptions of the competing

agendas of professional development. *Exceptionality Education International*, *21*(3), 66-81.

Peterson, P., Home, A., & Winderlich, S. (2013). Integrity on intervention effectiveness. https://dx.doi.org/10.19012Fjaba.2012.45-449

Petrie, K. C., & McGee, C. (2012). *Teacher professional development: Who is the learner*? New York, NY: Corwin Press.

Piaget, J. (1936). The *origins of intelligence in children*. New York, NY: McMillian Press.

Pool, J. L. (2014). Tier 2 team processes and decision making in a comprehensive three-tiered model. *Intervention in School*, *48*(4), 232-239. doi:10.1177/1053451212463961

Posavac, E. (2015). *Program evaluation: Methods and case studies*. Boston, MA: Routedge Press.

Prasse, S. (2015). Teacher professional learning communities: Going beyond contrived collegiality toward challenging debates of professional growth. *Australian Journal of Adult learning*, *54*(2), 54-77.

Prothone, N. (2008). The impact of fidelity of implementation in effective standards based instruction. *Principal*, *88*(1), 38-41.

Richardson, J., & Janusheva, V. (2012). The lasting impact of "reading to learn" and sustainability of professional development. *The International Journal of Learning, 18*(9), 195-210. Retrieved from http://miar.ub.edu

Riggsbee, J., Malone, D., & Straus, M. (2012). The role of liberal education in preparing tomorrow's teachers. *Peer Review*, *14*(2), 12.

Rogers, E. (1955). *Diffusions of innovation theory*. (1st ed). New York, NY: Free Press of Glencoe.

Rogers, E. (1962). *Diffusions of innovation theory*. (3rd ed). New York, NY: Free Press of Glencoe.

Rogers, E. (2013). *The origins of development of the diffusions of theory*. New York, NY: Free Press Press.

Ross, M. (2013). Teachers' professional development needs and the systems that meet them. *Creative Educat*ion, *1*(5), 1497-1511. doi:10.4236/ce2014.515167

Royse, D., Thyer, B., & Padgett, D. (2015). *Program evaluation: An introduction to an evidence-based approach*. Boston, MA: Cengage Learning Press.

Ryan, A., & Cousins, D. (2014). Response to specific training for students with different levels of learning difficulties. *Exceptional Children*, *80*(3), 337-352. doi:10.1177/0014402914522424

Sabanci, A., Ahmet Sahin, A., Sonmez, M. A., & Yilmaz, O. (2016). The correlation between school managers' communication skills and school culture. *International Journal of Progressive Education, 12*(3), 155-171. Retrieved from http://www.inased.org

Sanger, D. (2014). Educator's yearlong reactions to the implementation of a response to intervention model. *Journal of Ethnographic & Qualitative Research*, *7*(11), 98-107.

Schleicher, L. (2011). Social constructivist teaching strategies in the small group classroom. *Small Group Research*, doi:1046496413488422.

Seldin, P. (2013). *Strategies and tools for building a learning organization*. Boston, MA: Cowin Press.

Sibthrop, D., Schuman, M., Gookin, L., Bayner, S., Paisely, I., & Rathunde, S. (2011). Knowledge and teaching: Foundations of the new reform. *Educational Review, 57(1)*.

Sieben, L. (2011). As a path to a degree, the GED Is rerouted with students' needs in mind. *Chronicle of Higher Education*. San Diego, CA: Corwin Press.

Silverman, D. (2011). *Qualitative research* (3rd ed.). Thousand Oaks, CA: SAGE Press.

Simon, K. (2011). *Dissertation and scholarly research: Recipes for success*. Seattle, WA: Dissertation Services, LLC.

Sims, R. L., & Penny, G. R. (2015). Examination of a failed professional learning community. *Journal of Education and Training Studies*, *3*(1), 39-45.

Skerbetz, M. D., & Kostewicz, D. E. (2013). Academic choice for included students with emotional and behavioral disorders. *Preventing School Failure, 57*(4), 212-222. doi:10.1080/1045988X.2012.701252

Smith, S. (2013). Examination of a failed professional learning community. *Journal of Education and Training Studies, 3*(1), 39-45.

Song, J. (2012). An investigation of mobile learning readiness in higher education based on the theory of planned behavior. *Computers & Education*, *59*(3), 1054-1064.

Spaulding, L. (2013). Teachers' knowledge base for implementing response to

intervention models in reading. *Reading and Writing. 25*(7), 1691-1723. doi: 10.1007/s11145-011-93335

Spier, H. (2015). Motivation as a mediator of social disparities in academic achievement. *European Journal of Personality*, *26*(3), 335-349. doi:10.1002/per284

Shyder, R. (2011). Educators maneuvering the challenges of professional development guideless for success. *The Delta Kappian*, *78*(2), 27-32.

Stevenson, M., Hedberg, J. G., O'Sullivan, K., & Howe, C. (2016). Leading learning: The role of school leaders in supporting continuous professional development. *Professional Development in Education, 42*(5), 818-835. doi:10.1080/19415257.2015.1114507

Stewart, C. (2014). Transforming professional development to professional learning. *Journal of Adult Education*, *43*(1), 28.

Stufflebeam, O. (2012). Motivating factors for adult learners in higher education. *International Journal of Higher Education, 4*(1), 22-37. doi: 10.5430/ijhe.v4np12

Swanson, E., Solis, M., Ciullo, S., & McKenna, J. W. (2012). Special education teacher perceptions and instructional practices in response to intervention implementation. *Learning Disability Quarterly*, *35*(2), 115-126. doi:10.1177/0731948711432510

Taylor, C. (2015). Factors influencing sustained teacher change: A collective case study of two former professional development participants. *Conference Papers – Psychology of Mathematics & Education of North America*, 956-959.

Thomas, D. R. (2008). A general inductive approach for analyzing qualitative evaluation

data. *American Journal of Evaluation*, *27*(2). doi:10.1177/1098214005283748,

Tobbler, T. (2013). Educational expectations for high school students labeled with

learning disabilities. *Journal of Health and Social Behavior*, *54*(4), 462-480.

doi:10.11.777/0022146515250

Tobbler, T., & Stratton, J. (2014). Special education teachers' perceptions and

instructional practices in response to intervention implementation. *Learning*

Disability Quarterly 53(2). 126-136. doi:10.1177/07319487114

Tough, A. (1979). *The adult's learning projects. A fresh approach to theory and practice*

in adult learning. New York, NY. Teachers College Press.

Tuckwilder, M., & Childress, J. (2013). *Social cognitive theory and motivation. The*

handbook of human motivation. Boston, MA: Oxford University Press.

Ungerer, E. (2013). *An estemological glance at the constructivist approach:*

Constructivist learning theories of: Dewey, Piaget, and Montessori. New York,

NY: Corwin Press.

Wallace, J., Blasé, M., Fixen, S., & Naoom, W. (2013). Characteristics of general

education reading interventions implemented in elementary schools for students

with reading difficulties. *Journal of Remedial and Special Education, 33*(3), 192-

202. doi:10.1117/17419257103162

Waltz, K. (2012). We modify each other's lessons: The role of literacy work circles in

developing professional communities. *Journal of Teacher Development*, *7*(46), 1-

16. doi:10.8010/66136654530

Waters, C. (2013). Effective professional learning communities? The possibilities for

teachers as change agents. *British Educational Research Journal*, *40*(5), 18-35.

doi:10.5005/berij.2530

Webster, J. (2012). District-wide effects on data use in the classroom. *Education policy analysis archives*, *20*(5), 1-37. doi:http://dx.doi.org/10.14507

Weissberry, M. (2012). Barriers and benefits to intervention: Perceptions of special education teachers. *Rural Special Education Quarterly*, *33*(2).

Wholey, J. (2010). *Building a framework for succes*s. Solution Tree Press,

Wlodkowski, R. J. (2011). *Enhancing adult motivation to learn: A comprehensive guide for teaching all adults*. San Francisco, CA: John Wiley & Sons.

Wolkin, C. (2014*). Cognitive equilibrium. Encyclopedia of human development.* Thousand Oaks, CA: SAGE Publications.

Williams, G. D. (2014). *Determining best practices for the integration of academics in career and technical education programs at career and technical centers* (Unpublished Doctoral dissertation) Auburn University.

Wingate, J. (2014). *The principal as the instructional leader: A handbook for supervisors*. Boston, MA: Routledge Press.

Wright, E. (2013). *Psychoanalytic criticism.*Cambridge, MA: Routledge Press.

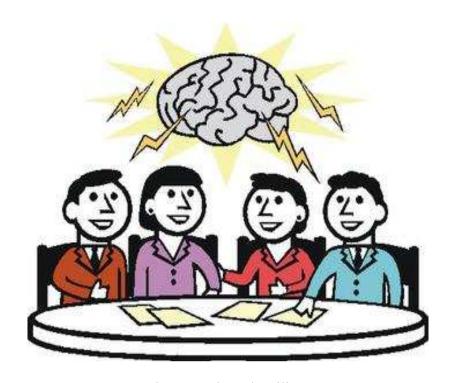Van der Heijden, H. R. M. A., Geldens, J. J. M., Beijaard, D., & Popeijus, H. L. (2015). Characteristics of teachers as change agents. *Teachers and Teaching*, *21*(6), 681-699.

Van Driel, J. H., & Berry, A. (2012). Teacher professional development focusing on pedagogical content knowledge. *Educational Researcher*, *41*(1), 26-28.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Watson, J. (2014). *Keeping pace with K-12 digital learning: An annual review of policy and practice.* San Francisco, CA: Evergreen Education Group.

Yakil, K., Welton, N., O'Connor, G., & Kline, K. (2009). Teacher collaborative learning community. *The Journal of Experimental Education*, *80*(3), 263-288. doi:10.10845214/2457554

Yin, R. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: SAGE Publications.

Zepke, N., & Leatch, L. (2010). Improving student engagement: Ten proposals for actions. *Active learning in Higher Education*, *11*(3), 167-177.

Zohrahi, D. (2012). *Transforming professional development into student results.* Alexandria, VA: Association for Supervision and Curriculum Development.

Zvoch, K., Letourneau, L., & Parker, M. (2012). How does fidelity implementation matter? Using multilevel models to detect relationships between participant outcomes and the delivery and receipt of treatment. *American Journal of Evaluation*, *33*(4), 547-565.

Appendix: The Project

Professional Development (PD) for Kindergarten Montessori Educators and Administrators

Project Developer/Facilitator:

DaMesia D. Starling, M.Ed.

Walden University Doctoral Student

Project Purpose and Rationale

The purpose of this professional development (PD) is to provide teachers and administrators of a kindergarten Montessori program with training that addresses the perceptions, concerns, and challenges of implementing the Montessori philosophy with fidelity. This PD was developed based upon an in-depth study of teachers and administrators' perceptions of the fidelity of implementing the Montessori philosophy. The study addressed concerns and perceptions that can impact the implementation of the Montessori method, knowledge of content, and application of teachers and administrator' practices, and student achievement. Data analyzed from this study resulted in the formation of five themes: administrative support and capacity building for the Montessori program to support FOI, limited advanced Montessori resources, peer coaching is needed to support new teacher implementation of the Montessori Method with fidelity, precise and consistent comprehension of the Montessori Learning Model is needed for FOI, and relevant and targeted PD and peer support for novice teachers is needed to support FOI. Providing opportunities for additional PD for the kindergarten Montessori program will reinforce the goals and objectives as intended for the kindergarten Montessori program to ensure the program is implemented with fidelity. Below, Table 8 contains PD content that emerged from data analysis, categorized by participant group of Montessori teachers and building administrators.

Table 8
Professional development content by participant group

Professional Development Content	Overall participant response	% Montessori teachers	% building administrators
Montessori Philosophy Overview	90%	90%	100%
Resource design	100%	100%	100%
Collaborative Lesson Plan Alignment	90%	90%	100%

Using data derived from the FOI study, this PD was constructed based on the understanding of the current skills, preconceptions, and attitudes of teachers and administrators in regard to the Montessori program (Mowat, 2015; Orsati & Causton-Theoharis, 2013; Sawka, et al., 2002). Toom (2016) noted professional learning is not something that happens in isolation, opportunities must be cultivated and nurtured. This type of PD could be valuable for the Montessori program and could promote positive social change for all stakeholders.

Program Goals

The overarching goal of the PD for the Montessori educators is to improve the quality of teaching at the study site to enrich all kindergarten Montessori students' academic achievement and educational experience while ensuring the fidelity of the program is being upheld. Goals for the PD are noted below:

- Goal 1: The Montessori teachers and administrators will gain a deeper understanding of the Montessori education philosophy and content delivery process.

- Goal 2: The Montessori teachers and administrators will understand adult learning theory to build collaborative efforts, provide peer mentor and administrative support, and professional development to provide ongoing support for the fidelity of the Montessori program.

- Goal 3: The Montessori teachers and administrators will collaborate with fellow Montessori educators in the district to support the fidelity of the Montessori program.

- Goal 4: District Montessori teachers will design lesson plans and share resources to align with state standards and the fundamental components of the Montessori philosophy.

- Goal 5: District Montessori teachers will have the opportunity to make Montessori instructional materials to use in their personal classrooms.

- Goal 6: The Montessori teachers and administrators will gain the strategies to enhance the quality of teaching at the study site to enrich all kindergarten Montessori students' academic achievement and educational experience while ensuring the fidelity of the program is being upheld.

Table 11

Timeline for PD

Date of session	Outline of the Daily Goals
Summer 2018	• Goal 1: Obtain permission to conduct the PD and share a copy of the PD plan and agenda with district leadership • Goal 2: Meet and greet cross district Montessori teachers and administrators • Goal 3: Provide an overview of Dr. Maria Montessori and the Montessori philosophy and components to promote fidelity • Goal 4: Small group discussion with teachers and administrators sharing experiences and expectations, visions, and goals of the Montessori method
Summer 2018	• Goal 5: Align Montessori lessons to Texas State Standards TEKs • Goal 6: Cross-curricular forum with Montessori teachers and administrators discussing how Montessori aligns with state requirements including Kindergarten TEKs • Goal 7: Create Montessori lesson plans
Summer 2018	• Goal 8: Make Montessori resources for the areas of Math and language

The themes from this study are closely aligned with the Montessori components outlining potential areas for the three-day PD. The theme and component correlation detailed in the following presentation slides:

Theme 1: Relevant and targeted PD and peer support for novice teachers is needed to support FOI

Montessori Component:

Instructional Approach

Fidelity Relationship:

Effective Interventions/Implementation Methods/Enabling Contexts

Theme 2: Limited advanced Montessori resources

Montessori Component:

Montessori Materials;
Instructional Approach

Fidelity Relationship:

Implementation
Methods/Enabling Contexts

Theme 3: Peer coaching is needed to support new teacher implementation of the Montessori Method with fidelity

Montessori Component:

Instructional Approach

Fidelity Relationship:

Implementation
Methods/Enabling Contexts

Theme 4: Administrative support and capacity building for the Montessori program to support FOI

Montessori Component:

Instructional Approach

Fidelity Relationship:

Implementation Methods/Enabling Contexts

Theme 5: Precise and Consistent comprehension of the Montessori Learning Model is needed for FOI

Montessori Component:

Child-directed work; Instructional Approach

Fidelity Relationship:

Implementation Methods/Intended Outcomes

PD PowerPoint
Day #1

Montessori Matters

A Three-Day Professional
Development Training:
*Implementing the Montessori
Method with Fidelity*

Ms. DaMesia D. Starling, M.Ed.
Project Developer/Facilitator

DAILY GOALS AND OBJECTIVES

Participants will:

Review the Montessori Components:

- The Montessori Instructional Approach
- Montessori Materials
- Child-directed Work

Break Out Collaboration Sessions

Recap/Review/Reflect

PD Evaluations

Day #1

WELCOME!!

- PLEASE SIGN IN
- TAKE A NAME TAG AND PLACE IT ON YOUR PERSON
- TAKE A SEAT

DAILY GOALS AND OBJECTIVES

Participants will:

Review the Montessori Components:

- The Montessori Instructional Approach
- Montessori Materials
- Child-directed Work

Break Out Collaboration Sessions

Recap/Review/Reflect

PD Evaluations

History of Montessori

The **Montessori Method** of education, developed by Dr. Maria **Montessori**, is a child-centered educational approach based on scientific observations of children from birth to adulthood. It is an approach that values the human spirit and the development of the whole child—physical, social, emotional, cognitive (Montessori, 1985).

The Montessori Components

To Do List:

- Get into groups (No more than 6 per group)
- Choose a group leader
- Choose a name for your group

The Instructional Approach

Montessori is a **method** of education that is based on self-directed activity, hands-on learning and collaborative play.

In **Montessori** classrooms children make creative choices in their learning, while the classroom and the teacher offer age-appropriate activities to guide the process.

Take a few minutes to collaborate on the perception you have on your classroom in relation to the Montessori approach.

Group Assignment

Spotlight characteristics of an effective way to display effective Instructional approaches within the Montessori classroom.

BE CREATIVE!

DRAW!

ACT OUT A SKIT!

JUST BE CREATIVE!

YOU HAVE 20 MINUTES.

BREAK!!

Be prepared to reconvene at 10:45

Montessori Materials

Montessori Materials

The Montessori materials have an interesting history. Many early ones were initially developed by Séguin for mentally retarded children and were adapted by Montessori in the early 1900s. From there, Montessori modified the originals and added to them. From her books and from conversations with people who have access to unpublished lectures and/or have spent time with people who worked directly with Montessori, is that tremendous thought and experimentation went into the development of these materials and their use

Montessori Materials Cont'd

Montessori watched children in the classroom and thought about their developmental needs; she developed materials that she thought would suit those needs; and she then watched the children with the materials, and revised and refined them until she thought she had a material that would meet one or more specific needs.

Montessori Materials Cont'd

- A hallmark of Montessori education is its hands-on approach to learning. Students work with specially designed materials, manipulating and investigating until they master the lesson inside.

- Beautifully crafted and begging to be touched, Montessori's distinctive learning materials are displayed on open, easily accessible shelves. They are arranged (left to right, as we read in Western languages) in order of their sequence in the curriculum, from the simplest to the most complex.

Montessori Materials Cont'd

- Each material teaches a single skill or concept at a time—for example, the various "dressing frames" help toddlers learn to button, zip, and tie; 3-dimensional grammar symbols help elementary students analyze sentence structure and style. And, built into many of the materials is a mechanism ("control of error") for providing the student with some way of assessing her progress and correcting her mistakes, independent of the teacher.

Montessori Materials Cont'd

The concrete materials provide passages to abstraction, and introduce concepts that become increasingly complex. As students progress, the teacher replaces some materials with others, ensuring that the level of challenge continues to meets their needs.

Group Talk

Chat in your group about what materials have shown success with and what materials have your students ked had less success with utilizing.

You have 5 minutes.

Child-directed Work

- The Montessori teacher, child, and environment may be seen as a learning triangle, with each element inextricably linked, and a vital part of the whole. The teacher thoughtfully prepares a classroom environment with materials and activities that entice her students to learn. She may guide her students to new lessons and challenges, but it is the child's interaction with what the environment has to offer that enables learning to occur.
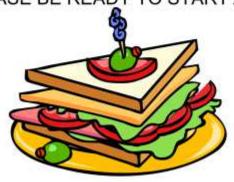
Child-directed Work Cont'd

Because the teacher isn't meant as the focus of attention, he can often be difficult to spot. Typically you'll find him sitting on the floor or at a table, observing his students as they work and making notations about their progress, or consulting with an individual or a small group.

LUNCH

(PLEASE BE READY TO START AT 1:00)

BREAK OUT SESSION

Participants will rotate through groups (each being titled from one of the Montessori Components discussed from the morning session). Each group will spend 15 minutes per rotation.

RECAP/REVIEW/REFLECT

- Take 3-4 minutes to review what we have discussed today with your table mates.

- Each table will share something that went well and ways to improve the training.

- Please complete the Evaluations and turn them over as you leave your table.

- Thank you for your time and see you for Day #2.

References

Boroditsky, L. (2000). Metaphoric structuring: Understanding time through spatial metaphors. Cognition, 75(1), 1–28.

Montessori, M. (1985). The Montessori method. New York: Schocken. Montessori, M. (

Montessori Matters

Professional Development for LISD1 Montessori Educators

Day 1: Make It/ Take It (Math and Language)

Summer 2018

Evaluation

Evaluation:

What ideas and structures from today worked for you?

What ideas and structures from today could be improved to help in the next session?

What lingering questions do you have?

Montessori Matters

Professional Development for LISD1 Montessori Educators

Day 2: Peer Collaboration/Lesson Planning

Summer 2018

8:30 AM-3:30 PM

Agenda

8:30- 8:45   Participants Sign-In

8:45-9:00   Welcome, Introduction/Overview of Day #2

9:00-10:15   Participants will sit with their campus of assignment to discuss and review

the vision, goals, and intended outcomes of the Montessori program to

their understanding. Sharing campus experiences.

10:15-10:25   Break

10:25-11:30   Each campus group will share out what was discussed from their groups

and allow other groups to comment, question, or agree.

11:30-1:00   Lunch (On your own)

1:00-1:10   Overview of the afternoon session

1:15-3:00   Lesson Planning

Participants will collaborate to design Montessori Lesson plans that are

aligned to the TEKS

3:00-3:30   Review and Reflect on the day. Complete Evaluations.

PD PowerPoint
Day #2

Day #2

WELCOME!!

- PLEASE SIGN IN
- TAKE A NAME TAG AND PLACE IT ON YOUR PERSON
- TAKE A SEAT

Glad your back!

DAILY GOALS AND OBJECTIVES

Participants will:

- Collaborate with campus peers to discuss the vision and goals of the Montessori program
- Participants will review Kindergarten TEKS for Math and Language
- Participants will design a lesson plan for both Language and Math
- Recap/Review/Reflect
- PD Evaluations

BREAK!!

Be prepared to begin at 10:25

LUNCH

(PLEASE BE READY TO START AT 1:00)

Feed your curiosity™

RECAP/REVIEW/REFLECT

- Take 3-4 minutes to review what we have discussed today with your table mates.

- Each table will share something that went well and ways to improve the training.

- Please complete the Evaluations and turn them over as you leave your table.

- Thank you for your time and see you for Day #3.

Texas Essential Knowledge and Skills for Kindergarten

§111.2. Mathematics, Kindergarten.

(a) Introduction.

(1) The desire to achieve educational excellence is the driving force behind the Texas essential
knowledge and skills for mathematics, guided by the college and career readiness standards. By
embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education
and prepare all Texas students for the challenges they will face in the 21st century.

(2) The process standards describe ways in which students are expected to engage in the content. The
placement of the process standards at the beginning of the knowledge and skills listed for each
grade and course is intentional. The process standards weave the other knowledge and skills
together so that students may be successful problem solvers and use mathematics efficiently and
effectively in daily life. The process standards are integrated at every grade level and course.
When possible, students will apply mathematics to problems arising in everyday life, society, and

the workplace. Students will use a problem-solving model that incorporates analyzing given
information, formulating a plan or strategy, determining a solution, justifying the solution, and
evaluating the problem-solving process and the reasonableness of the solution. Students will
select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and
technology and techniques such as mental math, estimation, number sense, and generalization and
abstraction to solve problems. Students will effectively communicate mathematical ideas,
reasoning, and their implications using multiple representations such as symbols, diagrams,
graphs, computer programs, and language. Students will use mathematical relationships to
generate solutions and make connections and predictions. Students will analyze mathematical
relationships to connect and communicate mathematical ideas. Students will display, explain, or
justify mathematical ideas and arguments using precise mathematical language in written or oral
communication.
(3) For students to become fluent in mathematics, students must develop a robust sense of number.
The National Research Council's report, "Adding It Up," defines procedural fluency as "skill in
carrying out procedures flexibly, accurately, efficiently, and appropriately." As students develop
procedural fluency, they must also realize that true problem solving may take time, effort, and
perseverance. Students in Kindergarten are expected to perform their work without the use of
calculators.
(4) The primary focal areas in Kindergarten are understanding counting and cardinality,
understanding addition as joining and subtraction as separating, and comparing objects by
measurable attributes.
(A) Students develop number and operations through several fundamental concepts. Students
know number names and the counting sequence. Counting and cardinality lay a solid
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foundation for number. Students apply the principles of counting to make the connection
between numbers and quantities.
(B) Students use meanings of numbers to create strategies for solving problems and

responding to practical situations involving addition and subtraction.

(C) Students identify characteristics of objects that can be measured and directly compare objects according to these measurable attributes.

(5) Statements that contain the word "including" reference content that must be mastered, while those

containing the phrase "such as" are intended as possible illustrative examples.

(b) Knowledge and skills.

(1) Mathematical process standards. The student uses mathematical processes to acquire and

demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating

a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as

appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) Number and operations. The student applies mathematical process standards to understand how to

represent and compare whole numbers, the relative position and magnitude of whole numbers,

and relationships within the numeration system. The student is expected to:

(A) count forward and backward to at least 20 with and without objects;

(B) read, write, and represent whole numbers from 0 to at least 20 with and without objects or

pictures;

(C) count a set of objects up to at least 20 and demonstrate that the last number said tells the

number of objects in the set regardless of their arrangement or order;

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(D) recognize instantly the quantity of a small group of objects in organized and random arrangements;

(E) generate a set using concrete and pictorial models that represents a number that is more
than, less than, and equal to a given number up to 20;
(F) generate a number that is one more than or one less than another number up to at least 20;
(G) compare sets of objects up to at least 20 in each set using comparative language;
(H) use comparative language to describe two numbers up to 20 presented as written numerals; and
(I) compose and decompose numbers up to 10 with objects and pictures.
(3) Number and operations. The student applies mathematical process standards to develop an
understanding of addition and subtraction situations in order to solve problems. The student is
expected to:
(A) model the action of joining to represent addition and the action of separating to represent
subtraction;
(B) solve word problems using objects and drawings to find sums up to 10 and differences
within 10; and
(C) explain the strategies used to solve problems involving adding and subtracting within 10
using spoken words, concrete and pictorial models, and number sentences.
(4) Number and operations. The student applies mathematical process standards to identify coins in
order to recognize the need for monetary transactions. The student is expected to identify U.S.
coins by name, including pennies, nickels, dimes, and quarters.
(5) Algebraic reasoning. The student applies mathematical process standards to identify the pattern in
the number word list. The student is expected to recite numbers up to at least 100 by ones and
tens beginning with any given number.
(6) Geometry and measurement. The student applies mathematical process standards to analyze
attributes of two-dimensional shapes and three-dimensional solids to develop generalizations
about their properties. The student is expected to:
(A) identify two-dimensional shapes, including circles, triangles, rectangles, and squares as
special rectangles;
(B) identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the
real world;

(C) identify two-dimensional components of three-dimensional objects;

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(D) identify attributes of two-dimensional shapes using informal and formal geometric language interchangeably;

(E) classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size; and

(F) create two-dimensional shapes using a variety of materials and drawings.

(7) Geometry and measurement. The student applies mathematical process standards to directly

compare measurable attributes. The student is expected to:

(A) give an example of a measurable attribute of a given object, including length, capacity,

and weight; and

(B) compare two objects with a common measurable attribute to see which object has more

of/less of the attribute and describe the difference.

(8) Data analysis. The student applies mathematical process standards to collect and organize data to

make it useful for interpreting information. The student is expected to:

(A) collect, sort, and organize data into two or three categories;

(B) use data to create real-object and picture graphs; and

(C) draw conclusions from real-object and picture graphs.

(9) Personal financial literacy. The student applies mathematical process standards to manage one's

financial resources effectively for lifetime financial security. The student is expected to:

(A) identify ways to earn income;

(B) differentiate between money received as income and money received as gifts;

(C) list simple skills required for jobs; and

(D) distinguish between wants and needs and identify income as a source to meet one's wants

§110.11. English Language Arts and Reading, Kindergarten,

(a) Introduction.

(1) The English Language Arts and Reading Texas Essential Knowledge and Skills (TEKS) are

organized into the following strands: Reading, where students read and understand a wide variety

of literary and informational texts; Writing, where students compose a variety of written texts

with a clear controlling idea, coherent organization, and sufficient detail; Research, where students are expected to know how to locate a range of relevant sources and evaluate, synthesize,

and present ideas and information; Listening and Speaking, where students listen and respond to

the ideas of others while contributing their own ideas in conversations and in groups; and Oral
and Written Conventions, where students learn how to use the oral and written conventions of the
English language in speaking and writing. The Reading strand is structured to reflect the major
topic areas of the National Reading Panel Report. In Kindergarten, students engage in activities
that build on their natural curiosity and prior knowledge to develop their reading, writing, and
oral language skills.

(2) For students whose first language is not English, the students' native language serves as a
foundation for English language acquisition.

(A) English language learners (ELLs) are acquiring English, learning content in English, and
learning to read simultaneously. For this reason, it is imperative that reading instruction should be comprehensive and that students receive instruction in phonemic awareness, phonics, decoding, and word attack skills while simultaneously being taught academic vocabulary and comprehension skills and strategies. Reading instruction that enhances ELL's ability to decode unfamiliar words and to make sense of those words in context will expedite their ability to make sense of what they read and learn from reading. Additionally, developing fluency, spelling, and grammatical conventions of academic language must be done in meaningful contexts and not in isolation.

(B) For ELLs, comprehension of texts requires additional scaffolds to support comprehensible input. ELL students should use the knowledge of their first language (e.g., cognates) to further vocabulary development. Vocabulary needs to be taught in the revised August 2017

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context of connected discourse so that language is meaningful. ELLs must learn how rhetorical devices in English differ from those in their native language. At the same time English learners are learning in English, the focus is on academic English, concepts, and the language structures specific to the content.

(C) During initial stages of English development, ELLs are expected to meet standards in a
second language that many monolingual English speakers find difficult to meet in their native language. However, English language learners' abilities to meet these standards will be influenced by their proficiency in English. While English language learners can analyze, synthesize, and evaluate, their level of English proficiency may impede their ability to demonstrate this knowledge during the initial stages of English language acquisition. It is also critical to understand that ELLs with no previous or with interrupted schooling will require explicit and strategic support as they acquire English and learn to learn in English simultaneously.

(3) To meet Public Education Goal 1 of the Texas Education Code, §4.002, which states, "The

students in the public education system will demonstrate exemplary performance in the reading

and writing of the English language," students will accomplish the essential knowledge, skills,

and student expectations at Kindergarten as described in subsection (b) of this section.

(4) To meet Texas Education Code, §28.002(h), which states, "... each school district shall foster the

continuation of the tradition of teaching United States and Texas history and the free enterprise

system in regular subject matter and in reading courses and in the adoption of textbooks,"

students will be provided oral and written narratives as well as other informational texts that can

help them to become thoughtful, active citizens who appreciate the basic democratic values of our

state and nation.

(b) Knowledge and skills.

(1) Reading/Beginning Reading Skills/Print Awareness. Students understand how English is written

and printed. Students are expected to:

(A) recognize that spoken words can be represented by print for communication;

(B) identify upper- and lower-case letters;

(C) demonstrate the one-to-one correspondence between a spoken word and a printed word in

text;

(D) recognize the difference between a letter and a printed word;

(E) recognize that sentences are comprised of words separated by spaces and demonstrate the

awareness of word boundaries (e.g., through kinesthetic or tactile actions such as clapping and jumping);

(F) hold a book right side up, turn its pages correctly, and know that reading moves from top

to bottom and left to right; and

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(G) identify different parts of a book (e.g., front and back covers, title page).

(2) Reading/Beginning Reading Skills/Phonological Awareness. Students display phonological

awareness. Students are expected to:

(A) identify a sentence made up of a group of words;

(B) identify syllables in spoken words;

(C) orally generate rhymes in response to spoken words (e.g., "What rhymes with hat?");

(D) distinguish orally presented rhyming pairs of words from non-rhyming pairs;

(E) recognize spoken alliteration or groups of words that begin with the same spoken onset or

initial sound (e.g., "baby boy bounces the ball");

(F) blend spoken onsets and rimes to form simple words (e.g., onset/c/ and rime/at/ make cat);

(G) blend spoken phonemes to form one-syllable words (e.g.,/m/ …/a/ …/n/ says man);

(H) isolate the initial sound in one-syllable spoken words; and

(I) segment spoken one-syllable words into two to three phonemes (e.g., dog:/d/ …/o/ …/g/).

(3) Reading/Beginning Reading Skills/Phonics. Students use the relationships between letters and

sounds, spelling patterns, and morphological analysis to decode written English. Students are

expected to:

(A) identify the common sounds that letters represent;

(B) use knowledge of letter-sound relationships to decode regular words in text and independent of content (e.g., VC, CVC, CCVC, and CVCC words);

(C) recognize that new words are created when letters are changed, added, or deleted; and

(D) identify and read at least 25 high-frequency words from a commonly used list.

(4) Reading/Beginning Reading/Strategies. Students comprehend a variety of texts drawing on useful

strategies as needed. Students are expected to:

(A) predict what might happen next in text based on the cover, title, and illustrations; and

(B) ask and respond to questions about texts read aloud.

(5) Reading/Vocabulary Development. Students understand new vocabulary and use it correctly

when reading and writing. Students are expected to:

(A) identify and use words that name actions, directions, positions, sequences, and locations;

(B) recognize that compound words are made up of shorter words;

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(C) identify and sort pictures of objects into conceptual categories (e.g., colors, shapes, textures); and

(D) use a picture dictionary to find words.

(6) Reading/Comprehension of Literary Text/Theme and Genre. Students analyze, make inferences

and draw conclusions about theme and genre in different cultural, historical, and contemporary

contexts and provide evidence from the text to support their understanding. Students are expected

to:

(A) identify elements of a story including setting, character, and key events;

(B) discuss the big idea (theme) of a well-known folktale or fable and connect it to personal
experience;
(C) recognize sensory details; and
(D) recognize recurring phrases and characters in traditional fairy tales, lullabies, and folktales from various cultures.
(7) Reading/Comprehension of Literary Text/Poetry. Students understand, make inferences and draw
conclusions about the structure and elements of poetry and provide evidence from text to support
their understanding. Students are expected to respond to rhythm and rhyme in poetry through
identifying a regular beat and similarities in word sounds.
(8) Reading/Comprehension of Literary Text/Fiction. Students understand, make inferences and draw
conclusions about the structure and elements of fiction and provide evidence from text to support
their understanding. Students are expected to:
(A) retell a main event from a story read aloud; and
(B) describe characters in a story and the reasons for their actions.
(9) Reading/Comprehension of Informational Text/Culture and History. Students analyze, make
inferences and draw conclusions about the author's purpose in cultural, historical, and contemporary contexts and provide evidence from the text to support their understanding. Students are expected to identify the topic of an informational text heard.
(10) Reading/Comprehension of Informational Text/Expository Text. Students analyze, make
inferences and draw conclusions about expository text, and provide evidence from text to support
their understanding. Students are expected to:
(A) identify the topic and details in expository text heard or read, referring to the words and/or illustrations;
(B) retell important facts in a text, heard or read;
(C) discuss the ways authors group information in text; and
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(D) use titles and illustrations to make predictions about text.
(11) Reading/Comprehension of Informational Text/Procedural Texts. Students understand how to
glean and use information in procedural texts and documents. Students are expected to:
(A) follow pictorial directions (e.g., recipes, science experiments); and
(B) identify the meaning of specific signs (e.g., traffic signs, warning signs).
(12) Reading/Media Literacy. Students use comprehension skills to analyze how words, images,

graphics, and sounds work together in various forms to impact meaning. Students continue to

apply earlier standards with greater depth in increasingly more complex texts. Students (with

adult assistance) are expected to:

(A) identify different forms of media (e.g., advertisements, newspapers, radio programs); and

(B) identify techniques used in media (e.g., sound, movement).

(13) Writing/Writing Process. Students use elements of the writing process (planning, drafting,

revising, editing, and publishing) to compose text. Students (with adult assistance) are expected

to:

(A) plan a first draft by generating ideas for writing through class discussion;

(B) develop drafts by sequencing the action or details in the story;

(C) revise drafts by adding details or sentences;

(D) edit drafts by leaving spaces between letters and words; and

(E) share writing with others.

(14) Writing/Literary Texts. Students write literary texts to express their ideas and feelings about real

or imagined people, events, and ideas. Students are expected to:

(A) dictate or write sentences to tell a story and put the sentences in chronological sequence;

and

(B) write short poems.

(15) Writing/Expository and Procedural Texts. Students write expository and procedural or work related

texts to communicate ideas and information to specific audiences for specific purposes. Students are expected to dictate or write information for lists, captions, or invitations.

(16) Oral and Written Conventions/Conventions. Students understand the function of and use the

conventions of academic language when speaking and writing. Students continue to apply earlier

standards with greater complexity. Students are expected to:

(A) understand and use the following parts of speech in the context of reading, writing, and

speaking (with adult assistance):

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(i) past and future tenses when speaking;

(ii) nouns (singular/plural);

(iii) descriptive words;

(iv) prepositions and simple prepositional phrases appropriately when speaking or writing (e.g., in, on, under, over); and

(v) pronouns (e.g., I, me);
(B) speak in complete sentences to communicate; and
(C) use complete simple sentences.
(17) Oral and Written Conventions/Handwriting, Capitalization, and Punctuation. Students write
legibly and use appropriate capitalization and punctuation conventions in their compositions.
Students are expected to:
(A) form upper- and lower-case letters legibly using the basic conventions of print (left-to right
and top-to-bottom progression);
(B) capitalize the first letter in a sentence; and
(C) use punctuation at the end of a sentence.
(18) Oral and Written Conventions/Spelling. Students spell correctly. Students are expected to:
(A) use phonological knowledge to match sounds to letters;
(B) use letter-sound correspondences to spell consonant-vowel-consonant (CVC) words (e.g.,
"cut"); and
(C) write one's own name.
(19) Research/Research Plan. Students ask open-ended research questions and develop a plan for
answering them. Students (with adult assistance) are expected to:
(A) ask questions about topics of class-wide interest; and
(B) decide what sources or people in the classroom, school, library, or home can answer these
questions.
(20) Research/Gathering Sources. Students determine, locate, and explore the full range of relevant
sources addressing a research question and systematically record the information they gather.
Students (with adult assistance) are expected to:
(A) gather evidence from provided text sources; and
(B) use pictures in conjunction with writing when documenting research.
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(21) Listening and Speaking/Listening. Students use comprehension skills to listen attentively to
others in formal and informal settings. Students continue to apply earlier standards with greater
complexity. Students are expected to:
(A) listen attentively by facing speakers and asking questions to clarify information; and
(B) follow oral directions that involve a short related sequence of actions.

(22) Listening and Speaking/Speaking. Students speak clearly and to the point, using the conventions
of language. Students continue to apply earlier standards with greater complexity. Students are
expected to share information and ideas by speaking audibly and clearly using the conventions of
language.

(23) Listening and Speaking/Teamwork. Students work productively with others in teams. Students
continue to apply earlier standards with greater complexity. Students are expected to follow
agreed-upon rules for discussion, including taking turns and speaking one at a time.

Teacher Lesson Plan

Grade Level: --------------- Subject: ----------------
Lesson Aim/Objective: --

Materials: --

TEK Standards:

Montessori Area of Concentration:

Instruction/Procedure:

Assessment Activity:

Follow Up:

Notes/Reflections/Reminders

Montessori Matters

Professional Development for LISD1 Montessori Educators

Day 2: Make It/ Take It (Math and Language)

Summer 2018

Evaluation

Evaluation:

What ideas and structures from today worked for you?

What ideas and structures from today could be improved to help in the next session?

What lingering questions do you have?

Montessori Matters

Professional Development for LISD1 Montessori Educators

Day 3: Make It/ Take It (Math and Language)

Summer 2018

8:30 AM-3:30 PM

Agenda

8:30- 8:45   Participants Sign-In

8:45- 9:00   Welcome, Introduction/Overview of Day #3

9:00-9:15   Participants will be introduced to the materials that are available to make

the Montessori math and language resources

9:15-11:30-   Participants will make Montessori materials (one Math and one Language

lesson of their choice)

11:00-1:00   Lunch (On your own)

1:00-3:00   Participants will continue to make Montessori materials

3:00-3:15   Review and Reflect from the past three days

Participants will have a chance to ask questions, comment, or share any

take-away thought from the past three days

3:15-3:30   Evaluation

Participants will complete the PD evaluation

PD PowerPoint

Day #3

Day #3

WELCOME!!

- PLEASE SIGN IN
- TAKE A NAME TAG AND PLACE IT ON YOUR PERSON
- TAKE A SEAT

DAILY GOALS AND OBJECTIVES

Participants will:

- Make Montessori Materials for the area of Math and Language
- Recap/Review/Reflect
- PD Evaluations

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Make It/ Take It Time!!

LUNCH

(PLEASE BE READY TO START AT 1:00)

RECAP/REVIEW/REFLECT

- Take 3-4 minutes to review what we have discussed today with your table mates.

- Each table will share something that went well and ways to improve the training.

- Please complete the Evaluations and turn them over as you leave your table.

- Thank you for your time and it is my hope you obtained knowledge from this PD.

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Evaluation

Evaluation:

What ideas and structures from today worked for you?

What ideas and structures from today could be improved to help in the next session?

What lingering questions do you have?