

MONTESSORI CURRICULUM IN MINNESOTA
AND WISCONSIN PUBLIC MONTESSORI
ELEMENTARY SCHOOLS

A Dissertation

Presented to the
Faculty of Argosy University/Twin Cities
College of Education and Human Development

In Partial Fulfillment of
The Requirements for the Degree of
Doctor of Education

by

Michael James Dorer

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1515 Central Parkway
Eagan, MN 55121

May 2007

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Chair: Dr. David Lange

Committee: Dr. Susan Huber

Dr. Randall Peterson

College of Education and Human Development

Abstract

This descriptive study examined management of curriculum in Minnesota and Wisconsin public Montessori elementary schools. It considered curriculum documentation, such as written curriculum documents, Montessori teacher manuals, and others. It reviewed and described feelings and attitudes held by Montessori school personnel toward written overt curriculum documentation. The study was survey based, with 77 administrator and teacher respondents. Survey items involved both closed-end questions and open-ended qualitative items. The results show that 13.2% of the schools studied used written curriculum documentation. Majorities of the respondents favored using written curriculum documentation, believed that classes at the same level should have the same lessons, thought that written curriculum assists in student evaluation, and asserted that a written curriculum would strengthen their schools.

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Dissertation Committee Approval:

Dr. David Lange

Date

Dr. Susan Huber

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Dr. David Lange, Program Chair

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AUTHOR'S NOTE: RESEARCHER EXPERTISE

Throughout this dissertation, the researcher makes certain assertions about Montessori education. These may include discussions about the curriculum, the status of Montessori schools, or the other Montessori topics. The writer wishes the readers to know that these observations are made from a position of expertise resulting from a lengthy experience and directed practice with Montessori education.

In 2006, Madeline Chi discussed the characteristics of experts in a variety of fields. One approach to expertise that Chi references, is what she calls *relative expertise* (Chi, 2006). This definition suggests that an expert is one who demonstrates a level of proficiency that novices do not achieve. In this sense, the more knowledgeable group can be considered the experts and the less knowledgeable group the novices.

In addition, Chi asserts that this definition means that the expert has acquired the very knowledge and understanding that makes one expert from experience. “The more skilled person became more expert-like from having acquired knowledge about a domain, that is, from learning and studying and from deliberate practice” (Chi, 2006, p. 23).

K. Anders Ericsson discussed the relation of practice to expertise (Ericsson, 2006). He found repeatedly that there is a relationship between repeated and deliberate practice and the development of expertise. Ericsson suggests, like Chi, that expertise is acquired gradually and with long periods of practice. The writer is an expert in Montessori education. In fulfilling Chi's and Ericsson's descriptions, this expertise has been acquired gradually and with a great deal of practice.

The author began a career in Montessori education in 1969, working as an aide in a publicly funded Montessori school and day care center in the inner city, which

specialized in serving disadvantaged children from a very diverse, multi-racial background. Two years were spent in this setting, during which the author completed Montessori teacher education for the early childhood level, receiving a credential in 1971.

Montessori studies involve a great deal of reading and writing. It also requires many hours of focused practice with the Montessori materials. This deliberate practice, recalls that Chi (2006) mentioned this as directly contributing to expertise.

The writer then spent several years teaching in suburban and greater Minnesota schools, acquiring expertise in working with other populations. In 1978, the writer completed a collegiate degree in Early Childhood education. Although this program was not specifically a Montessori program, it is applicable because the focus was traditional nursery school education, leading to a state certification in nursery school.

In 1979 through 1980, the writer again took a year of study in a Montessori teacher education program for the early childhood level. This led to many hours of practice with the aim of development of proficiency.

In 1979, the Minnesota Alliance of Montessorians elected the writer as president. This organization was the statewide professional group supporting Montessori education. This included organizational details and offering workshops to peers involved in Montessori education. The writer was re-elected, serving as president until 1984.

In addition, in 1979, the writer joined the faculty of the Twin Cities Montessori Center in St. Paul, MN as an adjunct teacher educator in Montessori. This position carried responsibilities for teaching Montessori mathematics, sensorial, classroom management, supervision of lab sessions, grading albums, and administration of oral examinations. This adjunct position continued from 1979 through 1985.

In 1980, the researcher began study at Xavier University of Cincinnati, OH in the elementary level of Montessori education. This course of study, led to a credential from the American Montessori Society in Montessori teaching for lower elementary children.

During and after this year the writer practiced as a Montessori elementary teacher. This began in a small private school, then the author transferred to a public Montessori school in North Minneapolis.

In 1982-1983, the writer was a student at the International Center for Advanced Montessori Studies, in Bergamo, Italy. The Bergamo center was the site where much of the modern elementary Montessori approach was researched and developed.

The author wrote eight Montessori albums during the training course. Substantial practice time was also required, as was the observation of elementary Montessori classes in Italy. The course culminated with the issuance of a Montessori credential from the Association Montessori Internationale in 1983. The multicultural character of the international course added substantially to the learning experience.

Upon returning to the United States from Italy, the researcher began teaching in an upper elementary Montessori class. He practiced as a classroom Montessori teacher for the next 10 years. This experience as a practitioner added substantially to the writer's expertise, particularly with the older child and the advanced materials.

In 1990, the writer joined the faculty of the Montessori Teacher Education Center of the College of St. Catherine in St. Paul, MN as an adjunct assistant professor. This position carried responsibilities for teaching graduate level Montessori mathematics and geometry as well as Montessori theory, sensorial and classroom management to Montessori trainees.

In 1991, the writer became the teaching principal of a small Montessori school in Winona, Minnesota. At that time, "It did not occur to me or to the parents who helped begin the school that it could be public" (Dorer, 2002). The legislature at that time was considering the possibility of a form of school to be called *Charter Schools*. These Charter Schools could represent a possible future for public school Montessori. The writer reviewed the legislation and determined that it could meet the needs of the school. State Senator Ember Reichgott and State Representative Becky Kelso were advancing the legislation at that time (Smetanka, 1992).

The Charter Law passed in the 1991 session of the legislature and became law. It was, "the first charter law enacted by any state" (Palmer & Gau, 2003). The writer prepared a charter and presented it to the Winona School Board on October 21, 1991 (Dorer, 2002). At that time, no other charter had ever been presented.

The State Board passed the charter unanimously. America's first charter school, a Montessori school, had been born on December 10, 1991 (Dorer, 2002). As the author and advocate of the charter for the first charter school, the author developed considerable expertise in the political and public policy process as it relates to education.

In 1993, the writer was selected as the Chair of the Montessori Teacher Education Center at the College of St. Catherine in St. Paul, MN as an assistant professor. This was an experience of developing expertise as well as applying it. Management of the program involved the development of syllabi for every course, the acquisition of Montessori materials, the arrangement of the prepared environments in all classrooms, as well as the selection of faculty. The position has represented a tremendous development of expertise.

At the same time, the author began offering his services as a speaker, workshop presenter, and consultant to Montessori schools. In the last 15 years, the writer has offered presentations on numerous Montessori topics to over 100 audiences in schools, workshops, conferences, parent meetings, and professional development seminars. These have been offered in many states, Canada, Mexico, South Africa, Israel, New Zealand, and Taiwan. This has also included being selected to present at seven American Montessori Society [AMS] national conferences.

In 1999, the author was elected to the Board of Directors of AMS. Working on the board level called for the development of new skills and expertise. The writer has been re-elected to that board and continues in this service until 2008.

In 2002, the AMS selected the writer to be the presenter of its traveling symposium series, a five city speaking and presentation series on Montessori topics sponsored by AMS. The topic was *The Five Great Lessons*, presented in conjunction with Judith Bauerlein (Dorer & Bauerlein, 2002).

In 2006, the author was elected as president of the American Montessori Society, the largest Montessori organization in the world. Its activities include teacher education, school accreditation, and support, offering national and regional conferences, and public advocacy for Montessori.

The writer has established his expertise for the readers to allow them to know the background he has in the Montessori field. In doing so, he has utilized the insights of Chi (2006) and of Ericsson (2006) that clarify the meaning of expertise. As a result of the demonstrated expertise, many statements are made in this document that are attributable

to the expertise and background of the writer. Statements without other specific attribution are attributable to the writer, based upon his knowledge and proficiency.

Acknowledgements

Writing a dissertation can be a long, challenging, difficult, and lonely journey. The encouragement, good will, and support of so many people have enabled completion of this project. Thank you!

I would like to express sincere gratitude to my colleagues and friends at the Center for Contemporary Montessori Programs. Without their assistance, tremendous support, advice, and encouragement, this project would not have happened. Thank you to Jeri Grant-Miller, Syneva Barrett, Gaye Sorenson, and an extra special *thank you* to Irene Bornhorst, who alternately dragged and pushed me towards my goal. I cannot say enough in thanks.

I am very grateful to my committee members, Dr. Susan Huber, and Dr. Randall Peterson for their support in this research project. Special thanks to my advisor and committee chair, Dr. David Lange, for his time and commitment.

Finally, I want to acknowledge and thank my family for their unwavering support throughout the entire doctoral quest, and the health issues that I encountered along the way. My children (Jacob, Benjamin and Margaret) always were cheerful and supportive of their father, even to the extent of listening to many rants about Montessori and curriculum. Thanks!

My greatest support throughout this process has been my beautiful and caring wife, Rose. Never wavering in her support throughout the financial strains, repeated edits, health issues and my Montessori obsession, she made this possible. I love you, Rose.

Dedication

To all of the Montessori teachers and administrators

In public and private Montessori schools

And

To all of the children, both those now in Montessori schools and those not yet
served by Montessori programs.

You are the future.

CHAPTER ONE: INTRODUCTION

Introductory Material

What is the Montessori viewpoint of curriculum, or is there one? Is there even a recognized Montessori curriculum? If one does exist, what differences are there or should there be, between the Montessori curriculum and everybody else's? Should the differences stand out or be minor? Are there any generally accepted written curricula for Montessori schools, especially at the elementary level? Is there any widely accepted scope or sequence? Should this be implemented as a written document? These and other related questions have led to an examination of Montessori curricula and its implementation.

Theoretical Framework

Since the 1970s, Montessori schools have been appearing in American public school districts. By 1992, John Chattin-McNichols reported that there were as many as 100 public school districts that offered Montessori programs (Chattin-McNichols, 1992). In 2006, that estimate had grown to over 200 Montessori schools in the public sector (Jola Publications, 2006). Although these schools are in most states, Jola Publications, (2006) lists 14 elementary public schools using Montessori in Minnesota. They also list 15 elementary public schools using Montessori in Wisconsin. These schools include both regular public schools and public charter schools.

As Montessori public schools have grown in Minnesota, Wisconsin, and the United States within publicly funded school districts, greater demands for accountability

have been placed upon them. This includes a legitimate and increasing call for clear written curriculum documentation.

Montessori elementary schools have generally had no accepted and documented curriculum plan. This may mean a lack of formalized written curriculum documentation, including grade level expectations, and scope and sequence. This kind of document is what Leslie Wilson calls an overt or explicit curriculum. “The overt curriculum is usually confined to those written understandings and directions formally designated and reviewed by administrators, curriculum directors and teachers” (Wilson, 2005). Montessori schools frequently function without any such document.

It is important that it be made clear that this research specifically refers to this sort of written curriculum document. The use of the word *curriculum* in this study is based on the work of Wilson (2005), and the Jerome School District (Jerome School District # 261, 2003). It will refer to a written document with the explicit purpose of identifying what is taught (the content or scope), in what order or sequence it is taught, when it is taught (grade level), to whom it is taught, and the instructional materials that are used to teach the content. This sort of document should also include planned outcomes for students. Finally, a planned and written formal curriculum should be subject to evaluation.

“A written curriculum guide provides direction and a blueprint for teachers to follow. The guide provides focus and communicates to teachers the instructional objectives, time allocation, evaluation means, instructional materials, and instructional suggestions to truly guide the instructional process” (English, 2000, p. 148). Teachers adhering to a written curriculum that is aligned and articulated, and that promotes continuity and cumulative acquisition of skills and knowledge, enhance learning. The

lack of a written curriculum guide forces the teachers to rely on other resources for guidance in planning and delivering instruction. These may not be in alignment with the instructional intent of the district or provide for educational consistency across and between the grades and levels.

Bambi Betts is the Director of the Principals' Training Center for International School Leadership and consultant on international schools. In 1997, Dr. Betts, writing to principals of international schools, described what she called the first job of a principal as to, "Ensure that there is a clear usable written curriculum in place that describes essential learner outcomes and standards, assessment strategies, and essential instructional strategies" (Betts, 1997, p. 1). Betts goes on to cite the finding that 80% of international schools surveyed in 1996, either had no written curriculum or had a textbook-driven curriculum, with no particular guidance for the teacher. This makes the situation in international schools similar to Montessori schools. Betts argues,

Understandably, it is inconceivable to most of our boards and parents that, after decades of working at improving formal education, we still cannot or are unwilling to state what we intend to do all day with their children and what they will be better at in June than they are in September. (Betts, 1997, p. 1)

Background on Montessori

Dr. Maria Montessori, an Italian physician and educator who lived from 1870 until 1952, began Montessori education (Kramer, 1976). Montessori started her first school, called a *Casa dei Bambini*, in the San Lorenzo district slums of Rome in 1907. (Montessori, 1912). This first school, what might today be called a preschool, was for poverty stricken children too young to attend public school.

As time passed and Montessori's programs met with success and international attention, additional levels and programs have been added. The elementary level is a Montessori program for children from ages 6-12, in grades 1-6. These programs began as early as 1919 (A correspondent, 1919).

Secondary programs are also growing in Montessori with most of the growth at this time in the early adolescent years, from 12-15. This encompasses grades 7 and 8 and may in some instances include grade 9. Some high school programs for Montessori are also in existence, although these are relatively new.

Montessori programs that serve infants and toddlers have also grown. Called a *nido*, the Montessori room for these very young children is meant to include parents as well. In fact, many infant programs now offer prenatal parenting classes for prospective parents.

Montessori education builds on the every day experiences of young children, which leads them to the construction of their own consciousness. It presumes that children construct their own patterns of learning which leads to self-construction (NAMTA, 2005).

The focus of this present research study is the Montessori curriculum at the elementary level. In Montessori schools, the elementary level is generally considered grades one through six. For this reason Kindergarten is not be included in this study.

Montessori Characteristics

The researcher has determined that there are ten essentials in the Montessori approach. Just as Montessori education is a whole and cannot be fully understood by

dissecting it into component parts, no list of elements will fully describe Montessori programs. However, this list may give the reader a general picture of Montessori. The ten essentials (Dorer, 2006a) are:

1. Mixed age classes.
2. Prepared environment.
3. Montessori materials.
4. Repetition.
5. Movement.
6. Freedom of choice.
7. Independence.
8. Respect.
9. The Montessori view of the child.
10. The trained adult.

Mixed Age Classes

All Montessori programs are predicated upon a mixed age grouping of children. There are no single grades. Multi age grouping is applied in all authentic Montessori classrooms. Dr. Montessori observed that children learn best in a mixed age classroom while developing uniquely human social experiences (Montessori Family School, 2006; Seldin & Epstein, 2003).

Montessorians have seen that within multi age groupings older children help teach younger children, while at the same time they are perfecting their own skills. Younger

children benefit from and are motivated by the older students. This setting also reflects normal human groupings.

Prepared Environment

The prepared environment is Montessori's term for a carefully readied and organized setting for children. It is geared to Montessori's vision of the needs and characteristics of young children. "Among its features is an ordered arrangement of sequential learning materials, designed to be developmentally appropriate and aesthetically appealing. Used in the noncompetitive Montessori classroom, the materials allow each child to develop at her own individual rate" (Collier, 2006, ¶ 3). It is especially organized with logical groupings of material sequenced from left to right. Each of these groupings represents a specialized topical area such as language arts, mathematics, or other such curricular subjects. The room or environment is furnished with shelves to contain and organize the materials, child size furniture, and a variety of interesting workspaces for the children (Seldin & Epstein, 2003). There may be no teacher's desk or area, just a specially designated chair.

The prepared environment is designed to help the child achieve self-mastery and mastery of the environment through the execution and repetition of apparently simple tasks, which are linked to the cultural expectations that the child faces in the context of his or her total development (Rambusch, 1962).

Montessori Materials

The Montessori materials are a set of scientifically designed hands-on learning devices. The materials for young children are generally made of hard woods or of metal. Natural looking materials are often emphasized. Montessori materials are constructed to be of very high quality, exceptionally durable and very long lasting.

At the upper level of Montessori education, especially the upper elementary and adolescent programs, more materials may be wall charts, specialized posters, research protocols, and interactive pages. These too are designed with beauty as well as educational value in mind.

The set of Montessori materials is very specific. Simply being hands on material is not enough to be placed in a Montessori classroom. Instead, each of the specialized materials is unique to Montessori and designed with particular purposes in mind. These materials are not the same as conventional materials found in regular Kindergartens and nursery schools. Their unique design features set them apart.

The present range of Montessori materials has, in effect, been selected by the children of the world in response to their inner directives. Invariably, children of all races, socio cultural and economic backgrounds have found an irresistible appeal in these materials and continue to do so after nearly a century. (Nienhuis Montessori, 2007)

Repetition

The freedom to repeat was one of the original *three freedoms*. Repetition is not only allowed in the Montessori setting, it is encouraged. In a Montessori school, this means that the child may continue working with a piece of material as long as he or she desires to do so. The only limit on this continued usage is that the material is properly

used and no other person is disturbed. This is in contrast to conventional schools in which there may be a limit on repetition, so that sharing can be enforced. In combination with this Montessori standard, is an expectation that the children who are repeating activities will benefit from the in-depth repeated focus while the others will also benefit from waiting for a turn at a later time (I. Bornhorst, personal communication, 2006).

Movement

Movement is one of the original three freedoms in the Montessori class. Children may move about the classroom if that movement has a purpose that serves learning and education. The movement also must not disturb others or interfere with the child's own work. Furthermore, all of the work in the Montessori class is to involve purposeful movement. This includes movement of the hands and arms as well as movement of the whole body. Children are expected to move in a Montessori class (Dorer, 2006a).

Freedom of Choice

Freedom of choice is one of the three basic and original freedoms of the Montessori approach. Children are to have the freedom to make choices regarding their seating spaces, work choices, work partners, and timing. However, the control of this freedom is that those decisions must not negatively affect their own work or others (Dorer, 2006a). In Montessori schools, freedom brings with it responsibility. As a result, children bear the responsibility for the consequences of their choices. "The child has the freedom of choice. He is free to develop the potential within him, free to learn, explore,

to discover. He is free to be creative. The child has the freedom to develop his individual interests” (Collier, 2006, ¶ 7).

Independence

The development of independence is seen as a core value in Montessori education (Seldin & Epstein, 2003). Beginning with the youngest children, a curriculum area called *practical life* exists, which has, as a main purpose, growth in independence. For the young child, this may mean learning to tie shoes or pour liquids. For older children it includes money management and traveling in other countries.

“Montessori teachers share a conviction that success in school is directly tied to the degree to which children believe that they are capable, independent human beings” (Seldin & Epstein, 2003, p. 31). It is important that this conviction is accurate and remains so. Montessorians point out that children who are not independent, are dependent. This state of dependence cannot be a life goal (I. Bornhorst, personal communication, 2006).

Respect

The Montessori Method is based on a profound respect for humanity and human beings in all stages of development. Montessori offered the insight that children are too often disrespected, indicating a basic prejudice toward children on the part of some adults. Sonnie McFarland, a Montessorian focusing on peace education, writing in *Honoring the Light of the Child* (McFarland, 2004), repeatedly makes the point that the

unique spiritual needs of children demand a nurturing loving adult who can demonstrate respect toward the child and childhood.

The Montessori View of the Child

Montessori saw children as having a special role or significance to humanity as well as to society. Furthermore, the state of childhood is defining for each individual. Children create the adult that they become. “We cannot with our efforts, create a man. That is the task of the child himself, and it is the most important side of the whole educational question: what the child himself accomplishes of his own power and not what adult man can do for him” (Montessori, 1942).

Montessori also saw children as being the preservers of culture and claimed that without children we would have neither civilization nor culture. Thus, it becomes critical that the education provided to them be rich in culture to offer the opportunity to carry it forward (Dorer, 2004).

In understanding children, Montessori stressed that we should gain knowledge through observation, much like an anthropologist observed other peoples. In doing so, she developed a series of ten fundamental needs of people as well as a set of human tendencies (Dorer, 2003). All of these manifest themselves in childhood. To understand children, it is critical to observe children with these needs and tendencies in mind (C. Fernando, personal communication, 1998).

The Trained Adult

The Montessori adult is the designer of the environment, an observer, a presenter, a role model, a resource person, and a facilitator. He or she creates the Montessori classroom's prepared environment, and it includes the learning materials and the representation of each learning curriculum. The adult as a guide or facilitator shows the correct use of the Montessori learning materials and any other necessary resources (Dorer, 2001).

Montessori called this adult a *directress*, rejecting the word *teacher*. She believed that this sent the wrong message since the children were to be their own teachers. The adult prepared the environment, observed, presented lessons and acted as a role model, but did not specifically teach. In modern America, the term *teacher* is again used, however the word *guide* is also very common.

The preparation of this Montessori adult requires five elements or components. These five elements are physical, intellectual, didactic, moral, and spiritual (Dorer, 2001).

Physical preparation. The physical preparation of the adult leads to the control of the body, which is essential in the Montessori classroom. This includes the ability to move quietly, display vocal control, and successfully manipulate the delicate objects in the environment. The adult also must be able to kneel, bend squat and work on the floor.

Intellectual preparation. This refers to a broad liberal background of study including a focus upon children. Montessorians must have a good knowledge base in grammar, literature, mathematics through geometry, history and pre-history, archaeology, biology, earth and physical sciences, general music, arts and crafts, art history, and

human growth and development. Additionally, they must have a theoretical foundation in Montessori theories and foundations.

Didactic preparation. This means the specific instruction offered to the adult in training focused upon the Montessori materials and their proper use. This could be compared to methods courses in conventional teacher preparation.

Every piece of Montessori material has a specific use or uses. This even includes how they are to be displayed upon a shelf or how they are to be carried. The materials are to be presented in a precise and accurate manner, following particular steps. Learning these uses and the manner of presentation is very complex and represents the didactic preparation of the adult.

Moral preparation. The moral preparation of the teacher is a vital element, not all of which is accomplished in the teacher education institution. Instead, it depends upon prior preparation. This means the candidates' background as well as the Montessori teacher education (Dorer, 2001).

Teachers are role models in many ways, including morally. For this reason, it is essential that the adult be a model of moral rectitude. This concept is not unique to Montessori. For example, Thomas Lickona, director of the Center for the Fourth and Fifth Rs (Respect and Responsibility), wrote about teachers,

They can serve as moral models — ethical persons who demonstrate a high level of respect and responsibility both inside and outside the classroom. Teachers can also model moral concern and moral reasoning by taking time to discuss morally significant events in the school and wider world. (Lickona, 2006)

Spiritual preparation. Montessori felt that the spiritual preparation was the most significant and most often ignored in conventional education (C. Fernando, personal communication, 1998; Dorer, 2001). This spiritual level suggests that the teacher's spirit is involved in working with children and that that work leads to spiritual growth.

Montessori herself wrote, "We must take into consideration that from birth the child has a power in him. We must not just see the child, but God in him. We must respect the laws of creation in him" (Montessori, 1989, p. 98).

Ron Miller, one of the major thinkers and writers in the emerging field of holistic education, wrote, "The guiding belief of Montessori's educational philosophy, the fundamental point around which all her principles and techniques revolve, is her conviction that humanity has its own special function to fulfill in divine evolution" (Miller, 2006, ¶12). This represents the essential spiritual core in Montessori education, a central component of teacher training.

The Distribution of Montessori Schools

Despite the non-traditional aspects of Montessori education, many public Montessori elementary schools exist today as options within public school or charter school choice programs. Montessori schools are found worldwide, serving children from birth through adolescence. In the United States, it is estimated that there are more than 5,000 private Montessori schools and more than 200 public school districts with schools that offer Montessori programs (NAMTA, 2005).

Public school Montessori programs have been growing in the United States (Chattin-McNichols, 1983; Chattin-McNichols, 1992; NAMTA, 2005). Jola Publications,

the publisher of the *Public School Montessorian*, lists about 4,300 Montessori schools in the United States (Jola Publications, 2006). The discrepancies in numbers are due to the challenges in counting Montessori schools.

It is difficult to be completely accurate in this listing for several reasons. Many schools do not use the word *Montessori* in their name or otherwise clearly identify themselves as Montessori schools. Others may be quite small or even based in a home and have no web presence. They may have a telephone listing under the name of the owner or other adult instead of the school's name. Some schools may have several satellite locations or campuses, but have only one listing. Also new start up schools and charter schools may not appear in any list.

In Minnesota, Jola Publications (2006) lists 125 total Montessori schools. Of these 125 schools, 14 are publicly funded schools serving elementary age children. Nine of these schools are schools in traditional school districts. Five schools are listed as public charter schools.

In the state of Wisconsin, Jola Publications (2006) lists 67 total Montessori schools. Of these 67 schools, 15 are publicly funded schools serving elementary age children. Five of these Wisconsin schools are schools in traditional school districts. Ten Montessori schools are identified as public charter schools.

Subject Areas

Montessori elementary schools offer at least six traditional subject areas. These are arithmetic, biology, geography, geometry, history, and language arts with reading

(Dorer, 2006a; Dorer, 2006b; Dorer, 2006c). Each of these areas is uniquely organized for Montessori classrooms.

One of the adaptations in Montessori schools is that every lesson or concept is linked to one or more specific pieces of Montessori educational material (Dorer, 2006b; Dorer, 2006c). This has led many Montessorians to equate the material itself with the curriculum. In fact, the material exists to make the abstract concepts in learning more concrete.

Albums

The word *album* is used in Montessori education to mean a teacher's manual. They were originally called albums because they consisted of exercises collected by Montessori teachers in training. They were illustrated with drawings and assembled in a booklet, such as a three ring binder. This process is still essentially followed, except that word processors may now be used.

During their Montessori teacher education, almost all future Montessori teachers prepare a number of subject centered teacher manuals, or albums. These are written for each subject area. The creation of the albums is the central element of curriculum development that is done by the Montessori teacher candidates. This work is very extensive and tremendously time consuming. It may be because of this work of having created albums that Montessori teachers do not see a reason to write a separate curriculum document. These albums are used as the basis of their planning and teaching. The use of the albums thus creates a curriculum-as-taught or practiced in at least the six major subjects (Dorer, 2006a).

An album is not a curriculum, under the definition of curriculum that is used in this research. Albums are collections of exercises, which may or may not have other elements such as grade levels, outcomes, or assessment (Dorer, 2006a).

In October 2006, the researcher did a written paper survey of all American Montessori Society (AMS) recognized elementary teacher education programs to determine their use of albums. There are presently 30 recognized AMS elementary programs. Responses were received from 29 of them for a 90.6% response rate. Responses were received from 17 states and 1 foreign country.

Every one of the surveys returned (100%) indicated that the teacher education program or center uses albums in some important manner. Eighteen of the programs (62%) issue albums to students in a workbook style, which the students then complete. Six of the centers or 20.7%, distribute fully complete albums to their students. Three programs or 10.3% offer some of their albums in a completed form but have students complete others. One center, or 3.4%, has its students write all of their albums completely. One teacher education program did not respond to this issue.

These data strongly indicate that albums are a central part of all American Montessori Society Montessori teacher education programs at the elementary level. It also indicates that albums are ubiquitous in Montessori work, since all credentialed Montessori teachers are graduates of Montessori teacher education programs.

In most Montessori programs, the teachers teach from the manuals or albums that they created or studied during their pre-service training (Dorer, 2006a; Jennings, 2006; Yen, 1999). As was indicated previously, these Montessori teachers' albums do not

provide overall curricular guidance, but are unique to each teacher, or at least to each training course from which the teachers graduated.

Because the work on albums is so central in Montessori teacher education and so all encompassing, most Montessori teachers use them very extensively in lesson planning. Furthermore, Montessori teachers frequently confuse them with a curriculum.

This creates a particular difficulty for Montessori educators and schools alike. Because most Montessori schools and teachers have not created nor utilized a written curriculum document, they often do not have a scope and sequence, nor clear grade level expectations. Instead, Montessori teachers continue to use their albums as a sort of curriculum-as-taught (R. Dorer, personal communication, 2006; I. Bornhorst, personal communication 2006; Y. Vang, personal communication, 2007).

Curriculum planning

In Montessori elementary schools, curriculum planning does occur, but not in the same way that it is often understood in conventional schools. Elementary Montessori teachers use their albums to plan lessons, either daily or on a week-by-week basis. Then a set of lesson plans may be drawn up. Very frequently, there are no lesson plans other than a notation to teach a lesson on a particular album page.

This leads to what might be called a curriculum-as-taught. This means the curriculum components that are actually presented or taught to students as opposed to those that are planned. The concern is that if there are planned elements, they may well not be equal to the elements that are actually taught (Western Carolina University [WCU], Department of Educational Leadership and Foundations, 2005). This is because

the Montessori teachers teach either from their albums or from the materials, but usually not from a plan.

In this study, one center of attention is on the curriculum components that are taught, but may not be explicitly planned. This leads to the central research problem, which is determining what sort of planning and organization Montessori public elementary schools use in curriculum issues. For the purposes of this study, then, interest will be focused on the curriculum-as-planned and whether and how it relates to a curriculum-as-taught.

It is very uncommon for Montessori schools to plan curriculum in the sense of setting out and writing a full scope and sequence specifying what will be offered in each grade or level. This sort of written document, a curriculum-as-written, common in conventional public schools, would usually not be in place in the Montessori setting. Instead, what is referred to as curriculum is simply the set of lessons in each teacher's album. In other words, it is a curriculum-as-taught.

Unfortunately, each of the 30 American Montessori Society Montessori teacher education programs (TEPs) uses different albums, sometimes substantially different. This is even truer of all of the other TEPs that are not affiliated with AMS or those which are not even accredited. As a result, there is very little internal consistency among the albums used by teachers in many schools. This means that there is also very little internal consistency among the teachers in those schools. Appendix A is a list of all 30 AMS Montessori TEPs as of January 2007.

Montessori as Public Domain.

The word *Montessori* is in the public domain. It does not belong to any Montessori organization or group. This means that schools and day care centers may use the word *Montessori* in describing their programming or even in the name of their school without governmental or other approval. In Minnesota and Wisconsin, there is no official governmental classification for Montessori schools, nor any special licensing.

This situation is due to a lawsuit in 1967 (*American Montessori Society, Inc. V. Association Montessori Internationale, 1967*). This case resulted from an effort by the Association Montessori Internationale (AMI) to register the word *Montessori* as a trademark, thus limiting its use by any other party.

The American Montessori Society filed a trademark opposition, number 47,291 (*Waldstreicher, Lefkowitz, & Shryock, 1967*) against the application on the grounds that Montessori was a generic name applied to Montessori teaching methods as well as learning materials, toys, games, and teaching aids. AMS was successful in court in this opposition, which has led to the word *Montessori* being in the public domain. Any verification of authenticity as a Montessori school is a private concern undertaken by accreditation agencies, such as AMS, or AMI.

For the purposes of this study, no attempt is made to verify the Montessori authenticity of the schools being studied. All use the name *Montessori* in their title or publicity and they all claim to offer Montessori programs. No public schools in Minnesota are presently accredited by AMS or AMI. For these reasons, the researcher has determined that all public schools identifying themselves as Montessori may be included in the study.

Definitions of Terms

Montessori is a very specific field within education, with a specialized vocabulary of its own. In addition to Montessori nomenclature, other terms are used that require explanation. In this study, the following definitions are used:

Album

An album is a teacher manual, specific to Montessori education. Almost every album contains a philosophy or theory section as well as a set of detailed lesson plans. Albums typically list every lesson or presentation in the entire subject area. "These contain all the detailed information on the setup, procedures, aims, variations, extensions, as well as teaching notes of an arbitrary activity" (Yen, 1999). An album does not meet the definition in this study of being a curriculum.

Casa dei Bambini

The Italian term, *Casa dei Bambini*, was used by Montessori as a name for her first children's program (Meidow, 2002). It is translated into English as Children's House or Children's Home. There is no universal agreement on the translation as Ron Miller suggests:

The term is usually translated into English as "children's house," and even many Montessori schools are named with some variation of "Children's House" or "House of Children." However, the learning environment Montessori sought to provide was not simply a house—a physical space with child-sized furniture and developmentally appropriate materials. The correct translation of *casa dei bambini*, as Dorothy Canfield Fisher insisted in 1912, is "children's home." (Miller, 2006)

In the United States, the term means the early childhood level of Montessori for children of ages 3 through 6. It is sometimes simply referred to as the *Casa*.

Charter Schools

Charter schools are specially organized public schools. They operate under a charter issued from a state or local school board, usually with freedom from many of the regulations and mandates that apply to traditionally organized public schools. The charter establishing each such school is a contract detailing the school's mission, program, goals, students served, and ways to measure success (U.S. Charter Schools, 2007).

Children's House

The term *children's house* is a common English translation of the Italian term *Casa dei Bambini*, Montessori's name for her program for small children. A Children's House indicates a Montessori program for preschool children.

Cosmic Education

Cosmic education is Montessori's term for her approach to education at the elementary level. It involves the integration of subject matter in a thematic approach, and emphasizes relationships (Montessori, 1948; Montessori, M. M., 1976; Dorer, 2005a).

The basis of cosmic education lies in five philosophical notions. These are as follows

1. All life has value
2. All things are connected – Holistic vision.

3. Humanity can be a collaborator with nature.
4. Universal Altruism – unconscious work for all (Cosmic selfishness).
5. Sense of Gratitude (Dorer, 2005b).

Cultural Studies.

In the Montessori classroom, the term *cultural studies* is used to refer to geography, history, music, art and sometimes science. This is because when presented, they are placed in a cultural context (Bornhorst, 2005).

Curriculum

In referring to curriculum, the meaning is a formalized, written document, indicating scope, sequence, content, materials, presentations, and grade or age level specific lessons. This is often called an overt, written, or explicit curriculum (Jerome School District # 261, 2003; Wilson, 2005). The word *curriculum*, unless otherwise qualified, will not include lessons or presentations unless they are related to a written document.

Elementary Grades

An elementary school is usually thought of as a school for young children; usually the first six or eight grades (Answers.com, 2006; WordNet Search, n.d.). In a Montessori school, the elementary level includes grades one through six. It does not include Kindergarten, nor grades above six (Haines, 2001).

Full Elementary Class

In Montessori elementary school programs, full *elementary* refers to grades one through six, or age levels 6-12. The full elementary is also sometimes called *Elementary*. These classes are mixed age, so that a child stays in this level with the same teacher for 6 years. This is an alternative Montessori elementary structure to having a lower elementary class and an upper elementary class.

Generalizability

Generalizability, also called external validity, means the extent to which the results of a study can be generalized to other circumstances. Internal validity is a prerequisite for generalizability. External validity is a matter of judgment and depends on the characteristics of the participants included in the study, the study setting, and the outcomes assessed (Moher, Schulz & Altman, 2001).

Going Out

Going out is a Montessori term for having groups of children leave the classroom for trips into the community to enlarge the learning experience. Going out may involve a small group of children or the entire class, and sometimes even multiple classes. It is considered an important part of the Montessori elementary experience. Destinations for going out may include local museums, theatres, colleges, farms, campsites, nature centers, and other environments to learn about the community in which the children live (Dorer, 2005c).

Great Lessons

In the Montessori elementary class, there are five special lessons, each of which introduces a particular theme. These five presentations are called great lessons because of their importance and the emphasis placed upon them with the children.

The five great lessons are: the history of the universe or the story of creation, the coming of life to Earth, the history of humanity, the story of language and the story of mathematics.

These five lessons are all presented at the beginning of the school year to the entire class. “All five great lessons MUST be given to the elementary children in the beginning of the year” (Temple, 1988). They are repeated annually.

Idiots and Idiocy

The word *idiot* is a word derived from the Greek *idiōtēs* meaning a person lacking professional skill or a private individual. It was extended to the ordinary layperson without specialized knowledge and thus became used patronizingly for an ignorant person. It was in the derogatory sense that the word entered English through Latin and Old French (Ayto, 1993).

The word *idiot* was used in the late 19th and early 20th century to refer to children and adults with special needs or learning difficulties. Montessori herself used the term in *The Montessori Method*, (Montessori, 1912, p. 36) to refer to what she also called backward children. Edouard Seguin also used the word in his book *Idiocy: and its Treatment by the Physiological Method* (Seguin, 1866). Seguin was one of the major influences on Montessori. The words *idiocy* or *idiot* are no longer used in education.

Lower Elementary

In Montessori elementary school programs the term *lower elementary* refers to grades one, two and three, or age levels 6-9. It is also sometimes called *Elementary One*. Historically, Montessorians referred to this level as *Junior Montessori* (Denison, 2006; Haines, 2001). These classes are mixed age, so that a child stays in this level with the same teacher for 3 years.

Montessori Curriculum

This is a curriculum as defined above which is specific to Montessori at the elementary level (Augsburg Park Montessori School, 2006; Bellevue Montessori School, 2005; Gallivan, 2006). "The Montessori Curriculum is an integrated thematic approach that ties the separate disciplines together into studies of the physical universe, the world of nature, and the human experience" (Casa dei Bambini, 2002). The term *Montessori curriculum* is, however, very frequently used to refer to the curriculum-as-taught, absent any written plans.

Montessori School

For this research, the term *Montessori school* will mean any school that identifies itself as a Montessori school. There will be no requirement of being nationally or regionally accredited or officially recognized as a Montessori school by the state or some other recognition body.

A school, which follows the teachings of Dr. Maria Montessori. Since the name *Montessori* is not protected by any copyright, Montessori in the name of a school does not necessarily mean that it adheres to the Montessori

philosophy of education. Nor does it mean that it is accredited by the American Montessori Society.” (Kennedy, 2006)

Practical Life

Practical Life is one of the five major areas in a Montessori Children’s House, along with sensorial, language, mathematics, and cultural studies. The practical life area offers exercises to develop a sense of order, concentration, coordination, and independence.

Practical life activities include a wide range of tasks from pushing in a chair to preparing food. The skills gained through work in the practical life area are essential for success in all other curriculum areas (C. Fernando, personal communication, 1998; San Francisco School, 2006).

Prepared Environment

The prepared environment is the Montessori term for the classroom in which the Montessori class is held. The prepared environment is to be beautiful and appealing to children. The prepared environment for learning includes the use of a wide range of Montessori learning materials placed attractively so that children may access them individually (Orem, 1974). The environment is built upon the idea that children learn directly from their environment and by direct interaction with the materials and apparatus in their surroundings (Neubert, 1972).

Public Montessori School

A public school in the United States is a tax-supported school open to anyone (Yahoo! Education, 2006). This definition includes a school in regular public school district as well as a public charter school. A public school that is also a Montessori school as identified above, is a *public Montessori school*.

Scope and Sequence

Scope and sequence refer to a curriculum plan, in which a range of instructional objectives, skills, materials, and outcomes is organized according to the successive levels at which they are taught.

The word *scope* means the totality of all that is taught or covered in a curriculum. As an element of curriculum, scope describes the document that records decisions about the entirety of what is taught or presented. Scope may be presented in any order or outline.

The word *sequence* refers to the order in which lessons or concepts are presented. It includes decisions about the arrangement in which lessons, units, concepts, or materials will be taught or presented. (Department of Education Tasmania, 2006).

The scope of a curriculum area is often arranged in a chart that also reflects the sequence of its presentation. In that case the document is referred to as a scope and sequence.

Sensorial

Sensorial is one of the five major areas in a Montessori Children's House, along with practical life, language, mathematics, and cultural studies. The sensorial area contains materials and exercises aimed at assisting children in educating and refining their senses as well as learning associated vocabulary (Fernando, 1997).

Skip Logic

Skip logic is an electronic survey tool or application, which allows new questions to be determined by earlier answers. When answering certain questions in an electronic survey utilizing skip logic, a respondent may skip to another spot in the survey based upon the answer to the prior question (Cvent, 2006; Group Surveys, 2007). Skip logic is also considered a proven way to reduce "drop-outs" and overall frustration (SurveyMonkey, 2006).

Three Freedoms

In the first Montessori *Casa dei Bambini* in Rome, Montessori offered the children freedom in three areas. Today these are referred to as the *three freedoms* (C. Fernando, personal communication, 2004). The first freedom is freedom to repeat. This means that Montessori children are to be free to repeat activities as frequently as they like. The second freedom is freedom of movement. This means that Montessori children may move about the classroom without being restricted. The third freedom is the freedom of choice. This freedom allows children to make essential choices about their work, seating, and time schedule (C. Fernando, personal communication, 2004).

Upper Elementary

In Montessori elementary school programs, the term *upper elementary* refers to grades four, five, and six. It is also often called *Elementary Two*. (Denison, 2006; Haines, 2001). These classes are mixed age, so that a child stays in this level with the same teacher for three years.

The Research Problems

This research study examines organized written curriculum documents in public Montessori schools. It seeks to determine what method or system of curriculum documentation is presently being used by Montessori public schools. The first goal of the research is to determine whether the curriculum management system in Montessori public schools consists of formal written curriculum documents or if other techniques of curriculum management are used. As a second goal, the research will examine how curriculum is managed if there is no specific written curriculum document. This will include a determination as to what forms of curriculum guidance are available. These could include brief curriculum statements, curriculum documents for certain ages or classes, allowing the children to direct the curriculum, the use of Montessori albums only, modifications of the public school curriculum, or no curriculum management system. As a third goal, the feelings and beliefs of teachers and Montessori school heads with respect to curriculum management are also assessed.

The objective of this research is to better understand and report on the state of written, overt Montessori-specific curriculum in public schools. Because of distance and

convenience, the study focuses specifically on the public Montessori schools located in Minnesota and Wisconsin.

The Research Questions

1. What form of curriculum documentation and management provides guidance for public Montessori schools in Minnesota and Wisconsin?

Examples would include a formal written Montessori oriented curriculum document, curriculum from the school district, a written curriculum that covers certain ages or certain subjects, an officially accepted school set of albums, each teacher's individual albums, following the lead of children, or no overall form of curriculum direction.

2. Are the beliefs and feelings of Montessori teachers and administrators in Wisconsin and Minnesota congruent with their practice with respect to curriculum?

There are essentially four possibilities related to curriculum. The first possibility is that they may believe that having a formal curriculum is correct, and they have one. The second possibility is that they believe that having a formal curriculum is not correct or needed, yet they still have one. The third possibility is that they believe that having a formal curriculum is correct and necessary, yet they do not have one. The final possibility is that they believe that having a formal curriculum is not correct and not needed, and they do not have one.

3. Are there differences in the approach to Montessori school curriculum documentation and management attributable to position, location, or school type?

For this question, attitudes regarding curricula were compared. The research compared Montessori school heads and teachers; Minnesota and Wisconsin locations; and school type.

Limitations of the Study

Limitations are internal factors that relate to the internal validity of the study (Dereshiwsky, 1999). This means that limitations affect how believable or credible the results will be. It is possible that there are some limitations or challenges to this plan of study. These are not severe enough to represent a problem. Three limitations are history, validity, and reliability of the survey instrument, and teacher resistance.

History

History could possibly be a factor. This means that during the period of the study, some of the schools being studied may be in the process of studying and adopting a curriculum. This could mean that by the end of the study, a different result could be in place. This is not a major limitation. To mitigate this threat, the schools were asked to answer all questions as of the date of the initiation of the study.

The Validity and Reliability of the Survey Instrument.

The researcher wrote the survey based upon established guidelines (Alreck & Settle, 1995; Fowler, 1995; Rea & Parker, 1997; Salant, & Dillman, 1994). There was no survey model upon which to base this survey without substantial modification. To validate the survey and mitigate this threat, the survey was checked for face validity and content validity as described under instrumentation in chapter three.

The survey instrument was also piloted with 22 individual Montessori teachers and graduate Montessori students. It was pre-tested in a school, Dakota Montessori School, which is not included in the main study. Dakota Montessori School is a Montessori school that does not fit the criteria of being a public Montessori school in Minnesota or Wisconsin.

Teacher Resistance

Montessori teachers may be resistant to any sort of written and documented curriculum. They may hold a belief that Montessori programs should simply follow the interest of each individual child.

David Kahn (1988) refers to this attitude as a part of the Montessori essentialist viewpoint. According to Kahn, many Montessorians oppose a school wide curriculum or whole school curriculum planning. Instead, they see areas of study as emerging from each child. For this reason they see school curriculum discussions and possible implementation as the wrong direction (Kahn, 1988). This attitude did emerge in the study, but did not prevent the study from being carried out, nor pose a serious threat to internal validity.

Delimitations of the Study

Delimitations are factors that can affect the generalizability of the study.

Generalizability means the extent to which the results of a study can be generalized to other circumstances. This may also be called external validity (Dereshiwsky, 1999).

It is possible that there are some delimitations for this plan of study. As with the limitations, these are not severe enough to represent a problem. The following are the anticipated delimitations:

1. The size of the study. This study focused only on the public Montessori elementary schools in Minnesota and in Wisconsin. Generalizability may be limited due to the small number of schools or sample.
2. A second concern could be the location of the schools. All of the schools are in Minnesota and Wisconsin. These states are in an upper Midwest location in the United States. Other follow up studies may be indicated to verify the findings in schools outside of Minnesota and Wisconsin.
3. The Montessori nature of the study. Only Montessori schools are being studied. This study cannot be generalized to other schools, with other sorts of programs or curricula.
4. An incorrect list. A potential delimitation is the possibility that the list of Montessori public elementary schools was dated or incomplete. However, this list has been compared with the American Montessori Society (American Montessori Society, n.d.b), and with Jola Publications (Jola Publications, 2006), so it is believed that this threat is mitigated.

Educational Significance of the Study

Although Montessori schools are widespread, it appears that there has been no study specifically focused on Montessori curriculum. The fact that no study has been done, strongly suggests that this needs to be investigated. It is possible that it has not been studied either because of a low awareness of Montessori or because many educators may believe that all schools must have an overt or written curriculum.

The lack of literature in this area suggests that this study could lead to a better understanding of how public Montessori schools manage curriculum. It could also aid curriculum developers in preparing curricula for the Montessori sector. It may also offer information to state departments of education as well as local education agencies as they consider the implementation of a public school Montessori program. Finally, this study could assist in developing unique assessment instruments for public Montessori schools.

There are now over 200 public school districts with Montessori programs in place. Minnesota and Wisconsin, taken together, have 29 such schools at the elementary level. (Jola Publications, 2006). This also argues that the need for such a study is increasing.

For Montessori public schools to grow and to demonstrate success, clear written curricula are needed. This is also very necessary for accountability and reporting purposes. Charter schools and other Montessori schools in the public sector may be required to report their accomplishments referenced to their documented curriculum. A clear written curriculum document will aid in this effort.

This study made clear the extent of the need for written curricula. This recognition may lead to the development of written curricula, which could address the need for documentation.

Overview of the Study

The research protocol was a survey-based project. The survey was created on SurveyMonkey; a web based firm hosting electronic surveys. This survey was web-based and located on the SurveyMonkey site.

The first contact was to each school head, using U. S. mail. This letter introduced the survey and the researcher as well as giving contact information. The school head was asked to participate in the survey and to enlist the participation of the school's elementary Montessori staff.

The initial letter was followed up with a telephone call to the school head to firm up the contact and answer any potential questions. Every participant was given an opportunity to withdraw from the survey at that time. The third contact was an email to the school head. This email contained a clickable link to the actual survey.

The electronic survey was aimed at public school Montessori leaders in Minnesota and Wisconsin public Montessori elementary schools. Its purposes were to assess what sort of written curriculum existed and the perceived value of having a written curriculum. This survey also was directed to the Montessori elementary teachers at the selected schools. This led to a comparison or contrast with the school heads.

The survey consisted of 21 response items and took 10 to 15 minutes to complete. Even while completing the survey, participants were given opportunities to opt out. The survey was anonymous, and SurveyMonkey protected the anonymity.

Four to five days after the survey link was sent out, an email was sent to each school head. This email thanked the participants and urged them to complete the survey, if that had not yet been done. Due to the anonymous nature of the survey, the researcher could not know which persons had participated.

Ten days after having sent the original survey link, a final email was sent to each participating school head. This thanked the school heads and informed them that in two days the survey would be shut down. The researcher then disabled the survey. At this point, the data analysis and interpretation began.

CHAPTER TWO: LITERATURE REVIEW

General Comments

Montessori education has been in place for 100 years. During these hundred years, the system has grown from a single classroom in the slum district of Rome known as San Lorenzo to a worldwide phenomenon with schools on every inhabited continent (Kramer, 1976; Meidow, 2002; Shute, 2002). This growth and years of experience has generated a great deal of literature, but only some of it is research based, and very little of it is curriculum focused. In developing this literature review, it was the researcher's intent to look developmentally at the growth and progress of the Montessori educational experience.

The goal of this literature review is to examine four main issues. The first of these is the writing of Maria Montessori herself. Montessori published her first book directly about her approach to children's education in 1912 (Montessori, 1912). She continued writing and publishing throughout her life.

The second topic to be explored will be Montessori essentials. These include the nature of the Montessori educational program, again with emphasis upon the elementary level. In this, the history of the Montessori approach has been examined, as well as some basic ideas of Montessori theory, and the Montessori elementary school. In doing this, a chronological approach has been taken.

The third major issue is general curriculum material, which pertains to the Montessori curriculum in some related way. This includes information that examines related curriculum movements. This can help the reader to understand the development of the Montessori curriculum.

The fourth issue is the Montessori curriculum, focusing upon its historical development. In this topic, the writer has looked at Montessori curriculum basics, and the concept of a written Montessori curriculum. The focus taken in this study is to examine major or significant works that affect Montessori education or more specifically, the elementary school level of Montessori education.

The researcher is most interested in specific research that indicates results of using written curriculum documents. This has not yet been found in the literature. Several documents, books or articles that support written curriculum were found, but not as research results.

Maria Montessori

Although she was a physician, Maria Montessori is best known for her lifelong work with children. This work has led to the establishment of Montessori schools around the world. Montessori herself wrote very extensively, beginning with her first book about her approach, *The Montessori Method* (1912). In this book, Montessori documents the first Montessori school and gives the basics of her approach. Montessori insists that she does not have a fixed method as such, but a system in which the classroom is a laboratory, a scientific approach.

The Montessori Method was very successful and led to Montessori touring the United States several times. In her 1915 trip, Montessori addressed the National Education Association in San Francisco. Dr. Montessori was then invited to set up a classroom at the Panama-Pacific International Exposition in San Francisco so that more interested people could observe her methods. As a part of her presentation, she

set up a popular glass walled classroom in which authentic Montessori classes were held, right during the convention. For 4 months, the classroom was attended by 21 children, all of whom were completely new to a Montessori environment. The observation seats were filled every day and at noon, when the children served lunch to their classmates and washed up afterwards, there was standing room only in the audience. The two gold medals awarded for education at the Panama-Pacific International Exposition both went to the Montessori class. (Stephenson, 2004). The delegates from around the country were able to observe an actual Montessori classroom in action (Kramer, 1976; Shute, 2002).

Montessori became a sort of celebrity, attracting national attention with crowds of individuals trying to meet her and receive training in the Montessori Method. Among the prominent Americans involved were telephone inventor Alexander Graham Bell and his family and President Woodrow Wilson (Kramer, 1976).

The focus of this study is Montessori at the elementary level. Although Montessori's initial classroom work was with preschool age children, by as early as 1915 some of her followers, such as Bell, were already formulating extensive lessons and plans for elementary age children (Bell, 1915; Bell, 1916). These early beginnings, such as Bell's work, were only components of a plan, not an entire program or curriculum. Bell's efforts focused on beginning ideas of elementary science. His writings include many science experiments with an object of leading every child to develop his or her own reasoning faculties, "We want him to find things out by himself, by the exercise of his own mental powers" (Bell, 1915, p. 69).

Then in 1916, William Heard Kilpatrick released a shattering small monograph, *The Montessori System Examined* (Kilpatrick, 1916). Kilpatrick, a prominent professor at

the Teacher's College of Columbia University, argued that Montessori's work was out of step with American education at that time. Although Kilpatrick saw some utility in what Montessori calls *Exercises of Practical Life*, he found little else positive in the system.

Specifically, Kilpatrick addresses Montessori's idea of the education of the senses. Montessori suggests that special material can isolate a single sense and develop perception as well as associated language in that sense. Kilpatrick associated this with the outdated notion of transfer psychology. He identifies this Montessori principle as "either carelessness in thinking or erroneous theory" (Kilpatrick, 1916, p. 46).

A second concern that Kilpatrick addresses is that Montessori does not make an effort to connect her exercises with the life of the child (Kilpatrick, 1916, p. 59). In essence, this is an argument for relevance, related to the plans of Dewey, as in *Schools of Tomorrow* (Dewey, J. & Dewey, E., 1915).

A third Kilpatrick concern had to do with self-expression. He argued that the exercises as construed by Montessori are too narrow and limited. He even went so far as to claim that the exercises cannot work with normal children. "So limited and narrow a range of activity cannot go far in satisfying the normal child" (Kilpatrick, 1916, p. 27).

Finally, Kilpatrick compares the work of Montessori to Dewey. Again, Kilpatrick maintains that the Montessori scheme is too simplistic. "Professor Dewey could not obtain the education which he sought in so simple a fashion" (Kilpatrick, 1916, p. 63). In a later statement, Kilpatrick contends that "her idea of pedagogy is much narrower than is Professor Dewey's idea of education" (Kilpatrick, 1916, p. 65). In general, Kilpatrick is arguing that the notions of Montessori, while they may have some interesting qualities do not measure up to Dewey's.

This small book changed the course of Montessori education in the United States. Within 7 years, almost every Montessori school in America had closed. (Kramer, 1976; Shute, 2002). No more new Montessori schools would open in the United States for nearly 40 years.

In 1916, Montessori, still very active in Europe, published a seminal work that vastly expanded the scope of the approach. *The Advanced Montessori Method* (Montessori, 1965, 1988) was a two-volume work addressing the elementary school or grade school child. This moved Montessori's work up through 12-year-old children.

Volume one of this work focuses upon theory. In this work, Montessori addresses the will, intelligence, attention, the preparation of the teacher, and imagination. All of these topics are related to 6 to 12 year old children.

The second volume addresses specific elementary level curriculum and materials. Montessori sets out plans in language arts, grammar, reading, arithmetic, drawing, music, and metrical analysis of poetry. This book, first available in English in 1920, marks the official beginning of the elementary Montessori program.

During this period from about 1912 to the early 1920's, there was a great deal of interest in Montessori internationally. Publications appeared from Smith (1912), Bell (1915, 1916) and others aimed at spreading the word about Montessori. The focus was uniformly on the early childhood level, with very little on the elementary.

However, over the next several years some other works appeared discussing Montessori curriculum, including works on the elementary or including references to the elementary. For example, Sheila Radice (1920) published *The New Children: Talks with*

Dr. Maria Montessori. The final section of this work addresses the elementary child and even adolescence.

Montessori herself (1925) wrote an additional article focusing on the analytic method to be used in the elementary school. Although a relatively short piece, several salient points emerge. The first is that the elementary program is viewed as a successor to the earlier preschool, “the facts were already prepared in the Casa dei Bambini” (Montessori, 1925, p. 96). *Casa dei Bambini* was Montessori’s Italian term for the preschool level. This established the important idea of an educational continuum, the levels are not separate.

Secondly, Montessori (1925) demonstrates the analytic method, which is still prevalent in the elementary level today. Using music as an example, she shows this approach of taking a subject apart into its component elements, an approach still followed in Montessori biology, grammar, mathematics, poetry, and music.

Montessori’s next major book on her system of general childhood education was not released until 1936. *The Secret of Childhood* (Montessori, 1936) is a short volume that summarized Montessori’s concept of child development and child psychology. In this book, Montessori suggests that there is a secret plan of development within each child, a plan that the child does not control. She argues that the child has no awareness of this inner natural plan. A proper environment can activate this inner direction toward self development and upbringing or it can be stifled by adults, often for what they may consider the good of the child.

During the 1940s as World War II was in progress, the British government detained Montessori in India for 7 years as an Italian enemy national (Kramer, 1976;

Standing, 1957). While there, she offered teacher education programs around the country and once in what was then called Ceylon (C. Fernando, personal communication, 1998; Kahn, 1979, 2004; Kramer, 1976; Standing, 1957). During the wartime period she did the basic research that culminated in another major work, *The Absorbent Mind* (Montessori, 1949). In this book, Montessori offered a very detailed discussion of child development including the pre-natal embryonic period and the first days as a post-natal infant.

It is in *The Absorbent Mind* that Montessori (1949) also advanced the idea of a unique mind or mental structure in young children. Naming this mental structure of childhood the *absorbent mind*, she argued that children have a unique capacity to learn directly from their environment and their own interactions with it. It suggests that children actually build their own mental structures while motivated by inner drives or forces.

Maria Montessori passed away in Noordwick, Netherlands in 1952 (Kramer, 1976). Since that time, many others have written articles and books about Montessori and her work. Others have referenced her in texts that are more general. These will be cited as they apply in the following sections.

Montessori Essentials

Historical Perspective

Maria Montessori (1870-1952) began her career as a medical doctor. Upon her graduation, she became the first female physician to qualify in Italy. Although today she is known as the originator of the *Montessori Method*, she began by simply working with special education children or *idiots*, as they were known at the time. After graduating

from medical school, Montessori began her work with institutionalized mentally challenged and special education children in a state school in Rome. (American Montessori Society [AMS], n.d.a; Hainstock, 1968).

In 1906, a consortium of businessmen who had built a housing development in an area of Rome known as the San Lorenzo district approached Montessori. The children of the working poor in that area were apparently unsupervised and damaging property. The businessmen proposed to Montessori that she take charge of the children and thus protect the property (Kramer, 1976). Although Montessori did recognize the motivations of the businessmen, she accepted and opened her first school in 1907. She called it a *casa dei bambini* or children's house. This was to designate its importance as the place for children among all of the adult-oriented surroundings (Montessori, 1912).

Three Freedoms

It was in that initial children's house that the first basic elements of Montessori theory were developed. Today these are referred to as the three freedoms (C. Fernando, personal communication, 2002). The first freedom is freedom to repeat. This means that Montessori children are to be free to repeat activities as frequently as they like. The second freedom is called freedom of movement. This means that Montessori children may move about the classroom without being restricted. The third freedom is the freedom of choice. This freedom allows children to make essential choices about their work, seating, and time schedule. (C. Fernando, personal communication, 2002).

In the years that have followed, there have been changes and growth within the Montessori Method, but these three elements still remain. However they have been

modified such that no child's exercising of his or her freedom may impinge upon the group. (C. Fernando, personal communication, 2002).

The Montessori approach, “ is structured around, and promotes, the child's natural, self-initiated impulse to become absorbed in an environment and to learn from it. Montessori developed specific materials, techniques and curriculum areas that assist each child in reaching his or her full potential” (Augsburg Park Montessori School, 2006). The Montessori approach today involves at least ten additional unique qualities that are very significant. These can be seen in most Montessori settings.

Preschool Focus

The first Montessori focus is on preschool children (Gordon, 1993; Montessori, 1912; Seldin, & Epstein, 2003). These are children aged 6 and younger. Montessori work begins with these small children. The focus of this research is however, upon elementary age children. As was seen before, Montessori first wrote about the elementary age group in 1916 (Montessori 1965, 1988).

Montessori's approach integrated careful observation of children with a scientific knowledge of human growth and development to create a framework for an educational approach that would lead all children to become self-motivated, independent and life long learners (American Montessori Society, n.d.a). In describing her “method,” Montessori said:

There was no method to be seen, what was seen was a child. A child's soul freed from impediments was seen acting according to its own nature. The characteristics of childhood, which we isolated, belong quite simply to the life of a child. They are not at all the product of an ‘educational method.’ It should, however, be obvious that education can have an influence upon

these natural qualities by protecting them and nurturing them in a way that will assist their natural development. (Montessori, 1936, p. 136)

Multi Age Groupings

Another important element of Montessori classes is multi age grouping. In defining a Montessori classroom, the Center for Contemporary Montessori Programs (2006) explains that a classroom must have a 3-year age grouping. This is carefully defined to be very clear. In the elementary grouping, it means ages 6-9 or 9-12. (NAMTA, 2005; Seldin & Epstein, 2003). No Montessori classroom would contain a single grade.

During the period of one class such as the lower elementary level, the children keep one teacher. That teacher or guide stays with the children for the entire 3-year period.

Montessori elementary teachers are not specialists, teaching only a single subject. Instead, they are broad generalists, dealing with most subject areas in an integrated manner. "The teacher is an enlightened generalist who can pull all the threads together and help the child see how all the pieces come together in their life and the world," (Thompson, 2004).

Planes of Development

One of the central components of Montessori's theory was, "that human development does not occur in steady, linear ascent but in a series of formative planes" (Lillard, 1996). These stages are broken down as follows into what Montessori calls *planes of development* or *planes of education*. (Montessori, 2004).

- | | |
|--------------------|------------------|
| 1. Early Childhood | Birth to 6 years |
| 2. Childhood | 6 to 12 years |
| 3. Adolescence | 12 to 18 years |
| 4. Young Adulthood | 18 to 24 years |

This study focuses on the elementary years or Montessori's second plane of development. In this stage of development, Montessori believed children have a limitless intellectual curiosity directed unconsciously at their own mental formation. Montessori called this level the "Intellectual Period" (Chattin-McNichols, 1998, p. 97).

Personalized Approach

Montessori elementary education is a personalized approach. Having the children stay with the same teacher in multi-age classrooms for 3 or more years encourages remarkable continuity in learning experiences. In the Montessori setting, children work with peers and in self-defined tasks with many opportunities for cooperative learning. They work with age mates as well as children of other ages in a manner that most Montessorians call *personalized* as opposed to individualized. (Charlap, 1999; Coe, personal communication, 2007; Dorer, 2006a).

Montessori Materials

The Montessori elementary program utilizes a very large, extensive set of manipulative materials. These are used rather than textbooks or worksheets to demonstrate most learning concepts. These materials, constructed of wood, metal, or

fiberboard, are often referred to as *concrete materials*. This term is meant to suggest that they are manipulative materials, not that they are made of concrete.

The materials are to be kept in careful order and always cleaned and polished to attract the children. “All the apparatus must be meticulously in order, beautiful and shiny, in perfect condition. Nothing must be missing, so that to the child it always seems new, complete and ready for use.” (Montessori, n.d.).

The materials make possible the personalized educational approach because they are “the means to personal formation for each child” (Lillard, 1996, p. 57). Each child’s learning takes form through his or her repeated interaction with these special materials (Lillard, 1996; Montessori, 1912). Montessorians have described the concept of abstraction as “a creative process undertaken by the child to construct her own knowledge” (Chattin-McNichols, 1998, p. 97), which is similar to the underlying notions of Holistic education (Miller, 1993; Miller, 1996).

The Montessori materials are also frequently self-correcting, which can offer students the opportunity for low stress discovery, without a requirement for external correction.

By assisting children in solving problems and evaluating their own successes, Montessori’s didactic apparatus provides a unique form of scaffolding and, especially in the mathematics and language materials for early elementary children, is designed to help children construct a higher level of abstraction while building on present understanding and skills. (Loeffler, 1992, p. 109)

There are Montessori materials for every subject area in the classroom, including language arts, mathematics, social studies, science, and music (Lillard, 1996). While some of the Montessori materials may resemble manipulative material used in

conventional classroom situations, their unique design and holistic elements are particular to the Montessori setting.

Thematic Approach and Great Lessons

In the elementary level of Montessori, a thematic approach is offered. There are five main themes, each introduced through a great lesson (Dorer & Bauerlein, 2002; Lillard, 1996; Montessori, M. M., 1957; Seldin & Epstein, 2003). These five themes are: the development of the universe and the Earth, life and biology, humanity and human evolution, language arts, and mathematics.

The great lessons, in introducing each theme, offer a significant unifying element in the elementary Montessori environment (Lillard, 1996). Montessori believed that the intellectual growth of children in the second plane made it “necessary to make use of the psychological state which permits the view of things in their entirety and to let them note that everything in the universe is interrelated” (Lillard, 1996, p. 59). The great lessons consist of five impressionistic dramatic stories, which provide a structural framework for all other lessons. The great lessons present the following stories (Dorer & Bauerlein, 2002; Lillard, 1996; Seldin & Epstein, 2003):

1. The creation of the universe. This is a story that takes children back more than 10 billion years and comes up through the creation and early development of the planet Earth. This story is accompanied with certain impressionistic experiments and charts.

2. The coming of life to Earth. This story offers the beginning of life, the first living beings, and evolution up to humanity. This lesson is accompanied by an illustrated timeline of life.
3. The coming of humanity to Earth. This story, also accompanied by a timeline, focuses upon human evolution and development. It brings the development of humans up to the first civilizations. It also focuses on the development of certain essential needs of humans.
4. The story of language. This is a beginning of what Lillard calls the “tools of human communication, that is, language and mathematics” (Lillard, 1996, p. 58). This particular lesson is broken into an overview of the first speech, first writing and the development of the alphabet.
5. The story of mathematics. This final great lesson concludes the tools of human communication. It focuses on the history of the numeral system.

All of these great lessons are told, not read, in a dramatic, even exaggerated manner. As noted above, some of the lessons utilize experiments and other visual aids, however the emphasis is on the telling of the story in a way that strikes the children’s imagination. For example, the first Great Lesson, called *The Creation of the Universe* or *The Story of the Universe* begins with the teacher telling a story to the children,

Look all around you. Aren’t we lucky to have all of the plants and animals? We also have buildings, streets, our own homes, and our families.

Once there was a time, long, long ago when there were no buildings at all. Can you imagine this time? It was long ago, even before your mother was born, before your grandmother was born. Before that time, there was a time when there were no people, no people at all. Even before that time,

there were no animals, no plants. In fact, there was a time when there was no Earth at all.

In the beginning, it was very, very cold. Colder than the coldest cold that you have ever known. It was also was dark. Darker than any night could ever be. It may have seemed that there was nothing there at all in this very dark, very cold space that was everywhere. Nevertheless, eventually there was something (Dorer & Bauerlein, 2002).

The story continues with the formation of the chemical elements, the stars, planets, the planet Earth and its cooling. This involves volcanoes, mountain formation, and the development of the atmosphere and hydrosphere. The story ends with the Earth being proclaimed ready for life (Dorer & Bauerlein, 2002; Duffy & Duffy, 2002).

The great lessons are integrative by nature. They are presented in a story telling format, involve language, grammar, science, mathematics, and history. The great lessons then lead into specific work for the children. “The cross-curricular nature of the Montessori curriculum puts knowledge into meaningful contexts for the students. After listening to one of the captivating Great Lessons, the students are shown how to use the materials that correspond with the concepts being emphasized” (Jones, 2006, p. 5).

The interrelatedness of the universe is a key message of these stories. Rather than isolated bits of knowledge, children use the universe as context for their learning, which sparks their imagination and leads them to ask questions and seek answers. This is believed to establish a foundation for a lifelong love of learning (Lillard, 1996).

These lessons or stories are offered regularly to the children on an annual basis. “Each year the children hear these stories with a new level of understanding” (Temple, 1988, p. 21).

Holism

The Montessori elementary curriculum is holistic in nature. Jan Smuts initially introduced the word *holism* in his 1926 book, *Holism and Evolution*. Smuts defined holism as “The tendency in nature to form wholes that are greater than the sum of the parts through creative evolution” (TheFreeDictionary, 2007). Millennia earlier, Aristotle had summarized what would become the central idea of holism in the *Metaphysics*: “The whole is more than the sum of its parts.”

The word *holism* derives from *hólos*, a Greek word meaning whole, all, or entire (Ayto, 1993). It is the idea that all the properties of a system cannot be determined or explained by the sum of its component parts alone. Therefore, the system can best be understood as an entirety.

Holism suggests starting with the biggest possible picture or approach initially, then later narrowing the focus (Miller, 1993; Miller, 1996). The opposite of this concept is called atomism. This entails the building up of big ideas from constituent parts.

Holism as an idea or philosophical concept is diametrically opposed to atomism. Where the atomist believes that any whole can be broken down or analyzed into its separate parts and the relationships between them, the holist maintains that the whole is primary and often greater than the sum of its parts (Schombert, 2004).

In the Montessori elementary method, most or all topics are approached first from the biggest picture possible. The idea is to always give the whole before the parts.

Montessori also believed that once achieving self-direction, children work best when provided uninterrupted 3-hour work periods (Lillard, 1996). During this time, children pursue activities of their choosing from any of the academic areas such as language, math, geography, science, history, and social studies. In fact, so much integration exists

across the disciplines that children often engage in multiple academic disciplines simultaneously and unconsciously.

Special Curriculum

Montessori elementary schools do share a unique and special curriculum plan, although it is important to remember that this may not be documented in writing. Six subjects form the core of the Montessori curriculum at the elementary level. These are: arithmetic, biology, geography, geometry, history, and language arts. Most schools also offer visual arts, music, and physical education (Dorer, n.d; Jennings, 2006; Yen, 1999). These subject areas are all accompanied with specialized materials, which are used in the presentation of lessons. For each subject area, there are specific lessons, many of them accompanied with stories, many of which are traditional Montessori stories.

Cosmic Education

Cosmic education, defined earlier, is often considered the heart of the Montessori elementary approach. Camillo Grazzini (2001, p. 81), director of the International Center for Montessori Studies, wrote, “The cosmic sense pervades all of Montessori’s work, both her thinking and her educational approach for all of the different planes and stages of development of the human being.” This sense of the cosmic core of Montessori education is especially strong in the elementary level.

Montessori first introduced the theory of cosmic education in a 1935 lecture (Havis, 2005; Montessori, 1948). Later, Mr. Montessori repeatedly offered cosmic education as the core of the elementary approach (Montessori, 1957; Montessori, 1973;

Montessori, 1976; Two notable events, 1956). When speaking of cosmic education, Mr. Montessori emphasized the unity of all subjects and their interconnections.

This emphasis on connections was what Mary Hayes, a Montessori trainer, called a “multifaceted approach” (Hayes, 2005, p. 2). Hayes emphasized the materials and lessons in the Montessori classroom that assist in leading to cosmic education. These include several charts, impressionistic materials, time lines, experiments, and the great lessons, which Hayes calls cosmic fables or tales (Hayes, 2005).

Cosmic education is now seen as the central organizing idea of Montessori elementary education. (Gupta, 1991; Kahn, 1979). Although subjects are offered, the subjects chosen are connected through the great lessons. They offer a thematic base for cosmic education. (Dorer, 2005a; Dorer, 2005b; Dorer & Bauerlein, 2002; Temple, 1988).

Special Teacher Training

Montessori elementary teachers must receive a specialized education for their position. This is very different from the education of conventional teachers. The training focuses on preparing the classroom environment, Montessori theory, Montessori classroom management, and the lessons with accompanying materials. A major part of all Montessori training is practice with the materials to develop particular skill in their demonstration and use (I. Bornhorst, personal communication, 2007).

The teacher's role in a Montessori classroom is different from that in a conventional school. Montessori children at all levels learn through their interaction with the environment, of which the teacher is only one part. Peers, materials, the outdoors, and

going out are also critical elements of the educational experience (Lillard, 1996). The arrangement of a Montessori elementary classroom illustrates the reduced emphasis of the teacher as the focal point. There is no teacher's desk at the head of the classroom; in fact, there is usually no teacher's desk at all. The teacher may often be found on the floor giving a lesson to a small group of students or reviewing their work. Even the word *teacher* is avoided in some Montessori schools in favor of the term *guide* to emphasize the child's role in his own learning (Chattin-McNichols, 1998, p. 56-58). Teacher training in Montessori prepares teachers for these unique duties.

Summary

Montessori's ideas were pioneering, sweeping, even revolutionary. In many places, they may now be seen as components of accepted educational principles (Shute, 2002). However, when Montessori began her work with children, these ideas were so new at the time and challenging that Dewey and Dewey devoted almost 20 pages of *Schools of Tomorrow* (1915) to the Montessori approach.

Montessori died in 1952. During the 1950's and the early 1960's there was very little published of a Montessori nature in the United States. It was in 1960 that Nancy McCormick Rambusch founded the American Montessori Society, reigniting Montessori in the United States, (American Montessori Society, n.d.a.). It is with this founding that modern Montessori in the United States began.

General Curriculum Material

This section of the literature review focuses upon basic curricular directions that are related to the Montessori Method and Montessori approaches. In this group, the Dalton plan and holistic curricula have been placed.

Probably the earliest book that presents a curriculum related to Montessori was *Education on the Dalton Plan*, (Parkhurst, 1922). Helen Parkhurst was originally a student of Montessori who later proposed a structured system of education based on extending Montessori's early childhood approach to elementary age students and adolescents. Her approach was seminal although it does not resemble elementary Montessori programs today.

Although Parkhurst does not specifically support a written curriculum, it seems evident from her writings that she presumes the existence of such documentation. The Dalton plan is aimed at upper elementary children and younger adolescents. It makes extensive use of written contracts for the completion of work. Although freedom is present in the Dalton plan, students have clear expectations; “We place the work squarely before him, indicating the standard which is to be attained.” (Parkhurst, 1922, p. 22). This indicated the presence of a standard, and probably a curriculum.

In 1985, P. Benedict Carolus re-examined the Dalton plan in *The Constructive Triangle* (Carolus, 1985). Carolus experimented with a modern implementation of the Dalton plan in a Montessori school. He refers to the contracts as being a way to remind one of the curriculum and serve as a check off. Carolus refers to the contracts as connecting with the written curriculum, which he asserts that most schools possess.

(Carolus, 1985, p. 8). In any case, the Dalton plan did not catch on after Carolus' article and is not widespread.

The closest approach to Montessori today may be Holistic Education. Miller's book, *The Holistic Curriculum* (1996) is very helpful in understanding the elements of holistic education that parallel Montessori. Miller favors a developmental curriculum that unfolds as the children grow, thus he offers no planned and written approach.

Other holistic writers such as Clark (1997) and Mayes (2004) support the basics of the holistic approach. Like Montessori education, holistic teaching starts with big ideas, integrates subjects, and defers attention to detail. It also seems not to have a clear written curriculum.

English (2000) writes directly about the need for a structured written curriculum. His writing is powerful and supportive of written curricular documentation. This is somewhat supported by other sources such as Betts (1997) and Wilson (2005). Some school districts, like the Jerome School District # 261 (2003) also advocate a written curriculum. This research has not revealed research studies specifically on this topic.

The Montessori Curriculum

The Early Years

As referenced earlier in the paper, the first writings specifically on the Montessori curriculum at the elementary level were done by Alexander Graham Bell (Bell, 1915; Bell, 1916). Bell's work is exclusively in the area of science. His goal was to, "develop experiments calculated to arouse the generalization spontaneously in the mind of a child." (Bell, 1915, p. 58). Some of these experiments seem interestingly quaint by today's

standards, such as his idea of putting a mouse in a bowl of mercury to see how it might react (Bell, 1915, p. 58). As to goals, Bell identifies the object of leading children to develop their own reasoning faculties, “We want him to find things out by himself, by the exercise of his own mental powers.” (Bell, 1915, p. 69).

Bell's later work (Bell, 1916) continues the same theme of science. However, he adds two new elements. The first is his notion of the *age of collections* (Bell, 1916, p. 2). This means that children in the elementary years, Bell believes, incline naturally toward collecting things, and going in the pursuit of additional objects to add to a collection. This Bell asserts, is “the beginning of science which consists of organized knowledge” (Bell, 1916, p. 2). He believes that children should then be encouraged to arrange and re-arrange the collections according to their own classification schemes. From this, Bell believed that the children would learn the essential skills of scientific classification.

Bell's second new element is the aspect of social development. He argues that the child in the age of collections has a natural desire to share the collections, to “exhibit his collections to others” (Bell, 1916, p. 3). In this exhibition, the child is seen as beginning social development through science. This section of Bell's work ends with the statement:

The point that I have in mind is that as a child's education advances, he should become more and more a social being - that is, instead of individuals acting singly and alone, quite independently of others, the children should work more and more in groups, and work together for the attainment of a common end. (Bell, 1916, p. 4)

This is a very important statement, for Montessori's writings on younger children until this time had suggested that children should work separately, independently. In moving the focus to the elementary child, Bell is the first Montessorian to suggest group work.

Bell neither uses the specific word *curriculum* in his writing, nor does he offer a sequence or ordered plan in the experiments and science that he offers. Still, there are important beginnings of the elementary approach.

In 1919, an interesting piece appeared in the Times Educational Supplement, without credit to an author (A correspondent, 1919). A correspondent met with Dr. Montessori where she was working in Barcelona, Spain. Montessori was working extensively with children up to 10 years of age at that time. The correspondent stated that the children were “working in grammar, arithmetic, geometrical identities and fractions” (A correspondent, 1919, p. 208). Montessori was also tackling some other subjects that she had not earlier addressed such as geography, history, and science. Here then is a beginning look at what later became the six major subjects of the Montessori elementary school. Included were arithmetic with fractions, science, which in later years focused on biology, geography, geometry, and language with a grammar spotlight.

There is no mention made of a planned or written curriculum in terms of sequence or age. It seems all very experimental.

In 1925, Montessori published the article on *Analysis* already mentioned above (Montessori, 1925). This article emphasized detailed studies and used music as an example. One interest in the article is the great importance that Montessori places in reducing each discipline into its component parts.

Montessori does bring up two foundations, which are to have been addressed in the Casa dei Bambini or preschool. The first of these is sensorial order. In the Casa, it is presumed that the children have had a background in working with their senses through the sensorial materials (Montessori, 1925, p. 96). This foundation, Montessori maintains,

is necessary in order to be prepared to build up an analytical study with the elementary children.

A second foundation from the Casa has to do with motor activity. Montessori draws particular attention to the exercise known as *walking the line*. It is this activity and others of a motor nature that prepare the children's movement to be able to work analytically.

In these comments, Montessori suggests the great importance that she places upon the Casa level. In terms of curriculum sequence, it is clear that Montessori believes that these experiences must have been offered to the children at an early and appropriate age.

Summary of the early years

During the teen years and the 1920's, Montessori and her followers were in a developmental phase. The elementary program was just being thought through, essentially as an extension of the Casa. Separate materials were developed for the elementary age child, but distinct approaches had not yet arisen.

The 1930s

After this, Montessori seems to have published very little or nothing regarding elementary children for almost 20 years. However, she did develop the beginnings of *cosmic education*, which is the core of Montessori's elementary approach. Montessori wrote that, "The plan of cosmic education as a foundation stone of the Advanced Method was first explained in England in 1935" (Montessori, 1948, p. 10). Seconding this chronology, Lee Havis wrote, "In 1935, Dr. Montessori found 'cosmic education' as an

ideal support for normal development in children over the age of about six” (Havis, 2005, ¶ 1). Even with this 1935 beginning, Montessori did not write or publish about cosmic education until later.

In 1939, Montessori offered a lecture in London, which focused on the elementary child (Montessori, 1975). In this lecture, reprinted in 1975, Montessori emphasized the moral aspect of human development during the period of the second plane. Montessori identifies the first element of moral development as justice, in particular *distributive justice*. By distributive justice, she means the idea of children that; “all things should be alike for everyone” (Montessori, 1975, p. 4). The fundamental problem that Montessori identifies with this construct of justice is that it is concerned with external things. “Justice through external things and justice which arises from the soul of man are two different things” (Montessori, 1975, p. 5).

Montessori (1975) goes on to discuss the importance of the elementary school helping to instill a sense of this inner justice. The difficulty she identifies is that the idea of justice is usually connected to externals rather than being seen as related to inner feelings.

The second point that Montessori (1975) brings up is the extraordinary intellectual development in the elementary child. This, Montessori asserts, is due to the child’s passage from a material to an abstract stage.

Montessori (1975) is suggesting that this growing abstraction makes it possible for second plane children to deeply appreciate the plight of those less fortunate that they are, and may lead to help for people who are suffering. In this way, she believes the moral dimension of justice is united with the intellectual growth of elementary children.

In terms of the development of Montessori curriculum, this aspect is tremendously important. It suggests a precursor to the later idea of *service learning*. In 1979, Sigmon defined service learning as an experiential education approach that is based on "reciprocal learning" (Sigmon, 1979). He further suggested that because learning flows from service activities, both those who provide service and those who receive it learn from the experience. Montessori's conception of bringing into unity the intellectual aspect with the aspect of justice seems to meet these criteria.

Summary of the 1930's.

During the 1930's, Montessori continued her work with the preschool child, but introduced certain important notions for the elementary level. The first of these was cosmic education. First introduced in 1935, this concept later became a central organizing principal for the elementary level. Later Montessori addressed the moral development of elementary age children, introducing her idea of inner justice. She also introduced ideas for elementary children that sound very like service learning. The decade ended with Montessori's trip to India and the outbreak of WWII.

The 1940s

From late 1939-1946, the period in which Montessori was interned in India, she was increasingly focused on the elementary child. It was during this time that the center of Montessori's elementary program, cosmic education, was developed (Kahn, 1979). One major outcome of this work was the 1948 publication of Montessori's first book since 1916, focused on children aged 6-12. Titled *From Childhood to Adolescence*

(Montessori, 1973), this work examines Montessori's later thinking regarding elementary schools.

Unlike her earlier works, this volume does not specifically refer to materials. It does emphasize the importance of what Montessori called *going out*. This referred to a broad menu of specialized field trips for elementary school children. Preparation, hiking, and even the feet are discussed. Montessori (1973) also addressed chemistry and in particular detail, water. She did not, in this work, focus on cosmic education as such; although she did take a more holistic approach to the elementary years than had been taken in earlier writing.

While in India, Montessori had many students who transcribed her entire lectures. After having been edited, these became her remaining books. Of particular interest to us is *To Educate the Human Potential* (Montessori, 1948). This book was originally a series of lectures, like some others of Montessori's late books. *To Educate the Human Potential* was first published in India and not generally available in the west until 1952. In this small book she set forth the basics of what has become known as *cosmic education*, which is an educational means of introducing to children what Montessori calls the *cosmic plan* (Montessori, 1948, p. 1, p. 5). Cosmic education is now seen as the central organizing idea of Montessori elementary education. (Gupta, 1991; Kahn, 1979).

In *To Educate the Human Potential*, Montessori discusses at length the topic of imagination, recalling her nearly 100-page chapter on the same subject in her 1916 work *The Advanced Montessori Method*, Volume 1 (Montessori, 1965). In *To Educate the Human Potential*, Montessori addresses the importance of imagination to all of humanity as well as to the child, making the case that all of human progress is due to imagination.

She also argues that the correct time for stories and other imagination development activities is during the elementary school years.

Much of the book is then taken up with Montessori telling a great set of stories. These include the beginning of the universe, the creation of the Earth, prehistoric humans, early civilization, and many important human advances. These story elements have later become incorporated in what elementary Montessorians call the *Great Lessons* (Duffy & Duffy, 2002).

The importance of this book to the development of Montessori's elementary program cannot be over estimated. (Dorer & Bauerlein, 2002; Dorer, 2005a). Because it offers an example of telling stories, great lessons, the cosmic plan, and imagination, *To Educate the Human Potential* serves as the philosophical and theoretical basis of the entire elementary program.

At about this time, in 1947 and 1948, Beni Charan Mahendra published a three part series on teaching biology in the elementary class. This series is detailed with specific lessons and represents an entire biological curriculum for elementary school. While not attempting to offer an entire Montessori agenda for all science areas, it did offer a beginning comprehensive program in biology (Mahendra, 1947a; Mahendra, 1947b; Mahendra, 1948).

This three-part series is particularly interesting to contrast with the early science work first written by Bell some 32 years earlier (Bell, 1915, 1916). In contrast to Bell's work, Mahendra focuses particularly on biology, an emphasis that remains to this day in Montessori curricula. Mahendra also has the work graded in terms of difficulty, although

he cautions that this sequence need not be followed and that teachers may take things out of their order and arrange them as they wish.

With respect then, to a planned written curriculum, this syllabus is a mixed bag. It does offer a program of biological studies, with each sub-section organized sequentially. However, Mahendra leaves it up to the teacher to plan what lessons are to be offered to what ages or to what children. Therefore, there is no planned scope, overall sequence, or age and grade level plan.

Summary of the 1940's

Throughout much of the 1940's, Montessori was interned in India, where she increasingly focused on the elementary child. Her approach to the 6-12 year old came broader and more holistic, shown in *From Childhood to Adolescence*. In 1948, Montessori's lectures were edited and became the book, *To Educate the Human Potential*. This book developed the concept of cosmic education as a central organizing idea in elementary education. This book also introduced a series of stories that later became the Great Lessons.

Mahendra (1947a, 1947b, 1948) published a beginning series on elementary curriculum in biology. This gave a 3-year overview of the subject.

The 1950s

After Montessori passed away in 1952, there was a temporary hiatus in the publishing of articles and books relating to Montessori elementary school.

Organizationally, Montessori's son, Mario M. Montessori, became the primary spokesperson for Montessori education. In text, he is referred to as Mr. Montessori.

The next Montessori reference to the elementary or junior curriculum appeared in 1956. A short unsigned article (*History for Juniors*, 1956) appeared in the *Bulletin/Quarterly Bulletin* of the Association Montessori Internationale. The article was an account of an address by Francesca Claremont, which was given in London. Claremont, a British Montessori training director, showed a variety of time lines used for the study of history in elementary classes. "These time lines were made of strips of paper. The colour of the strip varying with a change of epoch or dynasty, and enabled children quickly to get the chronological context of any event" (*History for juniors*, 1956, n.p.).

The significance of this reference is that time lines are indeed central today in the Montessori study of history, and this is the first reference to their use in the elementary program. The Montessori elementary level was then called junior Montessori or junior school. The article credits time lines with aiding in arousing interest in history as well as assisting in the development of the time sense. Claremont stated that, "Development of the time sense is essential, without it, junior children will have Henry VIII walking around Hampton Court arm-in-arm with a dinosaur" (*History for juniors*, 1956).

In that same year, Mr. Montessori spoke in London. The title of his address was *Montessori in the Junior School* (*Two notable events*, 1956). Two elements are important in this speech. He spoke first of the changed psychology of the elementary age child. The Montessori approach to the junior child, he said, to continue to, "assist and develop his natural urges to become a member of his community" (*Two notable events*, 1956). In doing this, attention must be paid to the urge to work in groups rather than singly or in an

isolated way. If this is not done and students are kept apart as in ordinary schools, Mr. Montessori warned that the result could be deviations, which could even result in criminal gangs.

A second point made by Mr. Montessori is that the child will incarnate all branches of knowledge by relating them to each other. This is a part of Montessori's cosmic education. With this essential connection and adaptation to the world, children accept even things that many may think to be unpleasant. Mr. Montessori stated, "Take the vulture, instead of saying 'How horrible,' the child says, 'How wonderful it is, because it does all the dirty work for us.'" (Two notable events, 1956, p.1).

This attitude exemplifies what Montessori calls the *cosmic task* (Dorer & Bauerlein, 2002; Dorer, 2005a; Dorer, 2005b). This is the idea that every being or organism has some kind of essential cosmic assignment or duty to perform. This task or tasks may be performed solely to support the being in question, but benefits others in some way. Mr. Montessori's illustration of the vulture (Two notable events, 1956.) is a perfect example of the cosmic task. As such, it shows the importance of cosmic education in the Montessori program.

The next year, Mr. Montessori wrote an article summarizing the program in junior schools at that time (Montessori, 1957). The focus of the article was the Montessori elementary school in Bergamo, Italy. Mr. Montessori describes the program in glowing terms, but does not refer to a plan of curriculum. Subjects are considered, such as language, mathematics (arithmetic), geometry, geography, history, and biology. These represent the six major subjects that still form the core of the elementary program.

Attention is paid to how a lesson should be presented. “When a teacher decided to give a lesson, she arranged to do so in a solemn fashion and invites all the children of the school who want to do so - or who have special interest in the subject - to take part in it” (Montessori, 1957, p. 28). Three points seem to stand out in this quotation and surrounding material.

The statement seems to suggest that a teacher simply decides to offer a lesson at some point. In fact, one would presume that the giving of lessons is a planned event with carefully set out materials and necessary equipment.

A second point made in the article is that lessons are open to anyone in the school who shows interest or wants to participate. In Montessori schools today, this is called the *open lesson policy*. However, Mr. Montessori (1957) does not offer suggestions as to how the curriculum is offered so that all students receive necessary lessons, including those students who may be uninterested or do not particularly wish to take part.

The third point is the solemnity of which Mr. Montessori (1957) speaks. This is no longer usually considered an element in the giving of lessons in Montessori elementary programs. Instead, elements involving striking the imagination and story telling are very common.

In this article, the point is again made that the school attempts to correlate all subjects. The point is to offer as complete a vision as possible. This cannot be done, Mr. Montessori (1957) points out, if the subjects are taught separately. Again, this unification of subject matter is a key element of Montessori’s cosmic education.

Summary of the 1950's

The 1950's were not a busy time for elementary Montessori. There were still no programs in the United States. After Montessori passed away in 1952, Mario Montessori became the primary Montessori spokesperson. Mr. Montessori (Two notable events, 1956) wrote that the approach for the elementary age child is as a member of his community, working and studying in groups. He pointed out that all branches of knowledge relate to each other and are part of cosmic education.

Six major subjects formed the core of the elementary curriculum: arithmetic, biology, geography, geometry, history, and language. Lessons are to be carefully planned, open to everyone, make use of story telling, and strike the imagination of the child (Montessori, 1957).

Claremont, (History for Juniors, 1956) demonstrated a variety of time lines to be used in the teaching of history for elementary classes. She credited the time lines with arousing interest in history as well as assisting in the development of the sense of time.

The 1960s

Montessori elementary education was spreading during the 1960s. Evidence of this is an article from India discussing the implementation of an elementary program that country, where it is called *primary*. A. W. Khandekar (1963) discusses an emerging program in India in which very few of the Montessori materials were available. He suggests making careful adaptations with locally available materials. The important point is to get materials into the hands of the children, even if they are not the standard materials.

Khandekar also addresses the issue of national or governmental testing. He is very critical of the testing system suggesting that its use be abolished in Montessori schools. If that cannot be done, then he offers another suggestion, “Where examinations cannot be abolished, they should be conducted with such a spirit on the part of the adults that the children should not fear them and they should in no way be the cause of losing self confidence” (Khandekar, 1963, p. 26).

The notion of Montessori programming at the elementary level seems to have been new in the United States at that time as well. This is indicated by a lecture given by Lena Wickramaratne, a prominent Montessori teacher educator, to the American Montessori Society at its 1963 national seminar. (Wickramaratne, 1964). The lecture is a general introduction to the lower elementary level or age 6-9 of the Montessori elementary program. In her presentation, Wickramaratne particularly paid attention to two points.

The first point was the cultural aspect of the elementary syllabus. “The six-to-nine period is one in which a wide-ranging cultural growth can take place, provided vivid interest is aroused.” (Wickramaratne, 1964, p. 1). In Montessori work, the cultural aspects are considered to be history, geography, arts, and components of practical life and science. Placing the emphasis here must be considered in the light of the post Sputnik times in which the lecture was presented. Most curricula were emphasizing mathematics and science, so this would have been a powerful way to identify the Montessori program as an educational alternative.

A second point made by Wickramaratne (1964), is the importance of cosmic education. This, she says, includes the way in which children organize the knowledge that

they acquire, by seeing it as a part of a whole. In that way, they come to understand both the whole and the component parts.

By this time, in the mid-1960s, the notion of what may constitute the fundamental elements of Montessori elementary education seem to have been established. Six subject areas were central. As we have seen, these were arithmetic, biology, geography, geometry, history, and language arts. They were to be presented in a holistic manner in which the elements are united together in a system called cosmic education. All parts are presented using concrete materials and stories. This basic statement describes what it seems that most people meant and still mean by the term, *Montessori curriculum* (I. J. Bornhorst, personal communication, 2007; C. Fernando personal communication, 1997).

Indeed there are curriculum elements there, such as subject matter and lessons. However, in this picture of curriculum that emerged from 1915 through 1964, there does not seem to be mention of scope and sequence, grade level objectives, regular lesson planning, putting the plan in writing or other parts of what make up a complete curriculum.

Summary of the 1960's.

Of note in the 1960's is the spread of elementary Montessori to India and the United States. Wickramaratne (1964) suggested that Montessori elementary programs address the wide-ranging cultural growth that can take place in the child. This was at a time when most conventional curriculums were emphasizing mathematics and science.

Six basic subject areas seem to have been well established as the fundamental elements of the elementary program: arithmetic, biology, geography, geometry, history,

and language. These subjects are to be presented using concrete materials and stories in a holistic manner united by cosmic education.

The 1970s

In the 1970s, the interest shown by Montessori writings increased. In June 1970, the American Montessori Society first released a statement on curriculum (Mallick, 1970). Aimed at a curriculum for teacher education programs, rather than schools for children, it still was an attempt to define a Montessori curriculum.

Beginning with philosophical statements, the paper emphasized that the “Montessori approach is an open-ended approach that encourages experimentation and innovation” (Mallick, 1970, p. 17). Much of the philosophy in the first section emphasized diversity and the ability of various practitioners to interpret Montessori practice to fit their needs or personal understandings. Still, when defining the content of teacher education courses for prospective Montessori teachers, the report was very specific. For example, 11 pages are devoted to a detailed outline of just one course component, Montessori philosophy, and educational theory (Mallick, 1970). The document continues with a very prescriptive curriculum.

The important thing about this document is not that it is directed at teacher education, but that the Montessorians who contributed saw a need for a clearly defined, written curriculum. In later articles, very few similar curricula can be found directed at schools and children.

Among the next of the articles to appear in the 1970's was an article by Mr. Montessori (1973). In this article, Mr. Montessori again asserts the importance of cosmic

education as the center of a Montessori education approach for elementary school. One reason why this is so important, he says, is due to the age of the elementary child and their psychological make-up. The younger child in the first plane asks “How?” The elementary or second plane child asks “Why?” Mr. Montessori suggests that cosmic education offers answers to these sorts of questions.

Only four works that specifically attempt to outline a detailed Montessori curriculum have been found. The earliest of these was released in 1976 although it had been produced earlier. The 1973-1974 Montessori teacher education students at the International Center for Advanced Montessori Studies in Bergamo, Italy, created a detailed curriculum guide (Bergamo class of 1973-74, 1976). This 26-page guide is divided into the traditional six Montessori elementary subject areas. Within each subject area, it offers a detailed outline of the lessons for that subject area. These are categorized by title only. In many cases, the relevant Montessori materials are also listed, but not in every case. There is a clear presumption that the reader is familiar with the Montessori approach and materials.

This guide, however, lacks age or grade levels suggested for the various exercises. Also absent are most other elements of a planned curriculum, such as outcomes or a philosophical orientation.

Still, this guide represents the first attempt to offer an organized curriculum plan for the elementary Montessori program as distinct from the traditional album. It is significant in that it offers a sequence and a scope in an organized way.

In 1976, David Kahn, executive director of the North American Montessori Teachers Association, wrote the earliest of several articles on Montessori elementary

programs. In this article, Kahn (1976) addressed and elaborated upon several key issues that we have seen were first addressed by earlier writers.

First, Kahn (1976) spoke to curriculum development. Kahn warns against adding materials, which are not essential. “Our curriculum is a sophisticated integration of knowledge which is undermined when glutted with random material” (Kahn, 1976, p. 1). This warning is part of a section, which urges coordination and evaluation of material research. This advice does not make clear the connection between the materials being developed and the curriculum.

Kahn (1976) next spoke of classroom management. He called for Montessori teacher education programs to devote more attention to classroom management. “In the case of the inadequately managed Montessori classroom, children are allowed to drift according to their impulse, without specific requirements” (Kahn, 1976, p. 2). This suggests the great importance of having specific requirements.

However, Kahn (1976) does not elaborate on what specific requirements there should be. Nor is the article clear on exactly what is meant by the term, *classroom management*. It is clear from the content that Kahn means more than managing behavior, but seems to be including some curricular management as well.

Kahn’s (1976) final section discusses the importance of integrated learning. This is related to cosmic education as has been discussed before. Significantly, Kahn argues that this is a hallmark of Montessori education, what he calls an *identity expression*. Similar to branding, Kahn suggests that this is what makes the Montessori educational approach unique.

In guaranteeing that this program will maintain its special nature, Kahn recommends that special attention be given to the adult in the classroom. “Teacher training should discourage departmentalizing through team teaching, producing the specialist who teaches only one or two subjects. What then happens to the spirit of integrated learning in the hands of the narrow specialty teacher?” (Kahn, 1976, p. 4).

Ruth Obolensky (1976), a Montessorian from Houston, Texas, took a different position. Obolensky suggested that the curriculum for the early elementary should consist of four general areas instead of the traditional six areas. Reflecting the curriculum of the Casa, she suggested that these areas be Practical Life, Sensorial, Language, and Mathematics. However, within the sensorial area, Obolensky includes science and geography. She does not offer a rationale for this organization of curriculum.

In contrast to Kahn (1976), Obolensky also suggests that there be specialist teachers in the elementary class. She recommends that five specialists should be used, as follows.

Five adults would be assigned to the following classroom areas:

1. Art and drama
2. Music and movement
3. Language skills and math
4. Geography and science, which would include animal care, woodwork, gardening and water activities
5. Spanish or other foreign language, combined with cooking and sewing or other craft.
(Creative writing, vocabulary enrichment, verbal expression, listening in communication are included in every area). (Obolensky, 1976, p.16-17)

While Obolensky’s ideas are interesting, they do not fall within the general mainstream of Montessori elementary curriculum writers. There is no evidence that these ideas were carried forward in other later Montessori curriculum writings.

In 1978, the Montessori teacher education students from 1976-77 at the International Center for Advanced Montessori Studies in Bergamo, Italy took the curriculum plans that had been examined earlier by 1973-74 class (Bergamo class of 1973-74, 1976) and produced six large flowcharts, one devoted to each of the traditional six subjects. (Bergamo class of 1976-77, 1978).

These detailed flowcharts contain the same lessons as the earlier work, but have added suggested age levels for all lessons. It still lacks some specificity of materials and lacks outcomes, but comes very close to a well-organized sequence. There are, however, elements missing in some of the advanced levels, particularly in language arts.

Because of the organization of the flowcharts, they essentially demonstrate a scope and sequence for Montessori elementary. This set of flowcharts represents the second of the four works previously referred to, which specifically attempt to outline a detailed Montessori curriculum.

Summary of the 1970's

The 1970's saw an emergence of writing about Montessori elementary curriculum. The American Montessori Society, Mr. Montessori, the Bergamo students Kahn, and Obolensky all contributed during this decade.

AMS released a report on Montessori curriculum directed at teacher education programs (Mallick, 1970). This prescriptive curriculum initiated the decade's focus.

Mr. Montessori (1973) reasserted the need to place cosmic education at the center of the elementary program. This, he maintained was due to the developmental needs of the child at that age.

The students from the International training center in Bergamo, Italy produced two curriculum guides (Bergamo class of 1973-74, 1976; Bergamo class of 1976-77, 1978), one of which was a flowchart series. These were two of the four most complete guides to this day. These guides listed lessons in the six subject areas. It is interesting that these first guides were produced by students, not by researchers, curriculum specialists, or Montessori trainers.

Kahn (1976) elaborated on several issues related to curriculum, including a warning against adding extra materials. Kahn also wrote about classroom management, including specific requirements for learning. Echoing Mr. Montessori, Kahn also discussed the importance of cosmic education, including teachers as generalists rather than specialists.

Obolensky (1976) differed from Kahn, calling for five specialist teachers in the elementary. She also differed from most Montessori writers in indicating only four central subjects in the elementary level.

The 1980s

In 1980, Kahn discussed the upper elementary or age 9-12 Montessori class. (Kahn, 1980). In this article, Kahn does not explicitly issue a call for a written Montessori curriculum. It appears, however, that the call is implicit within two statements that he makes. The first of these statements describes the child beginning the upper elementary or 9-12 year old class; the fourth grader or in Montessori terms, the *fourth year child*. Kahn argues that the time for basic skill competencies is over. He writes:

The fourth year child should be well-polished in his math operations, fully versed in his reading and writing, possessing a clear view of the natural

sciences, prepared to delve into aspects of human culture – the rise of prehistoric man, the ascendancy of civilization, the making of America. He should be eager to research from any book – many books. Work should seldom be a bore because the skill drill is over – and the expansion of concepts prevails (Kahn, 1980, p. 6).

The essence of this statement is that there must have been certain preparation that has happened in the earlier level, the lower elementary. At the least, one can draw the conclusion that there must have been a mathematics program with an emphasis on basic operations. Additionally the lower elementary class must have offered a thorough language arts program, including reading. A third component must be science, enough at least to provide a “clear view” (Kahn, 1980, p. 6). A fourth component would be cultural, history and geography; to prepare the fourth year child for studying what Kahn called “aspects of human culture” (Kahn, 1980, p. 6). Finally, basic preliminary or prerequisite skills for research must have been offered if the fourth year child is to be “eager to research from any book” (Kahn, 1980, p. 6).

These five elements lay out the beginnings of an age or grade level expectation. That is the idea that certain concepts, skills or subjects must be offered at specific times to prepare for future curriculum.

While this first statement concerned what could be called prerequisites for the fourth year child, Kahn’s second statement deals with the content of the upper level class. In language, mathematics, and the arts, he lists key lessons and sequential experiences that lead to achievement. This, he says, is empowered by a “self-propelled interest” (Kahn, 1980, p. 10). When speaking of how this interest drives learning, Kahn writes:

The self-propelled interest is cultivated by planned curriculum system of classification and inter-connection where history, biology and geography combine into a perspective which requires no cramming, no rote repetition but rather a building of a greater picture (Kahn, 1980, p. 10).

Again, the idea that stands out is the notion of the “planned curriculum system” (Kahn, 1980, p. 10). It is precisely this planned system that suggests a written and developed Montessori curriculum.

In 1983, a follow up article on the upper level was authored by Larry and Pat Schaefer, directors of a south Minneapolis, MN private Montessori school (Schaefer & Schaefer, 1983). Although they spoke of curriculum, Schaefer and Schaefer were not clear on exactly what constituted curriculum management in their school.

They were specific on certain issues. For example, they make clear the idea that there must be a thorough preparation in the earlier lower elementary level. “Poorly prepared students are impossible to handle at this level” (Schaefer & Schaefer, 1983, p. 24). This statement suggests that a complete curriculum must have been offered as a prerequisite to success in the upper elementary.

Regarding specific preparation, they write, “Reading well is essential. Because 9-12 year olds must write and copy large amounts of materials, a hand limited by printing is a nightmare. Cursive writing frees their hand and mind” (Schaefer & Schaefer, 1983, p. 24). From this it is evident that certain elements are clearly expected as outcomes of the lower elementary experience. Although Schaefer & Schaefer only mention reading and cursive writing, this suggests that each curriculum area may have similar prerequisites.

Later in the article, Schaefer & Schaefer discuss the content of the upper elementary Montessori class. “If left to an open ended, spontaneous experience, this level can be chaotic and lop-sided for both the adult and the child” (Schaefer & Schaefer, 1983, p. 25). Again, this statement suggests that a planned, organized curriculum is necessary.

The development of an overall scope and sequence document for Montessori was undertaken by Tim Seldin (1983), then headmaster of Barrie School in Silver Spring, MD. This document is the third of the four documents that have been found that specifically attempt to outline a complete Montessori curriculum.

Seldin examined the entire scope of Montessori curriculum from age 3 through age 12 or sixth grade. Focusing on what he called the integrated thematic approach, Seldin maintained that all areas of the Montessori curriculum are connected through related approaches as well as over the entire time span of the Montessori approach. Seldin wrote, “Our curriculum is organized as a series of integrated studies that increase in complexity in each successive year” (Seldin, 1983, p. 1).

Even with the integration focus, the scope and sequence document is divided into eight major areas. These are reading and language arts, mathematics, geometry, geography, history and the needs all people share, science, practical life skills, and sensory training. In introducing these areas, Seldin wrote, “Since our students progress at their own pace, the curriculum is not broken out by grade levels” (Seldin, 1983, p. 2).

What follows is a six and a half page scope document, briefly covering the range of instructional activities in the eight areas over the nine-year period from age 3-12.

Within each area, the activities are sequential.

This document does not usually refer to the specific Montessori materials used to further each activity. For example one activity reads. “The theorem of Pythagoras” (Seldin, 1983, p. 4), but does not give any Montessori materials that might be used for instruction in this area. However, another activity states, “Development of the four basic mathematical operations: addition, subtraction, division, and multiplication through work

with the Golden Bead Material.” (Seldin, 1983, p. 3). In this activity, the Montessori *golden bead material* is referenced.

Seldin’s document demonstrates strength in giving an overview of scope. Further development will require a more complete curriculum with age or grade level expectations, materials, and greater detail.

In many public Montessori schools, the curriculum must take into account the official curriculum from the school district, county, or state. Mary O’Dwyer (1985), a Montessori coordinator in the Cincinnati Public Schools addressed this issue. O’Dwyer emphasized that the public schools within the Cincinnati Public schools were required to follow the district curriculum, which was called at that time, “Graded courses of Study” (O’Dwyer, 1985, p. 14). In order to follow this curriculum, while retaining the Montessori nature of the school, O’Dwyer reported that the Cincinnati Montessori elementary teachers began a project of matching each objective of the Graded courses of Study to the Montessori activities used to meet that objective.

This was an early effort to align the base curriculum of the school district with the Montessori curriculum and materials. In the case of O’Dwyer’s work, the Graded courses of Study objectives are stated in educational terms relating to the achievement of each individual student. For example, objective 3 under whole numbers for grade 1 reads, “Count objects through 100” (O’Dwyer, 1985, p. 14).

Matching that objective, O’Dwyer lists what she calls *Montessori activities*. For the example objective, these are, “Ten boards, 100 board, golden beads, bead bars, 100 chain, square chains” (O’Dwyer, 1985, p. 14). Each of these listed activities is, in fact, a piece of Montessori material. Thus, the work done by O’Dwyer represents a matching of

curriculum objectives with concrete Montessori materials. This is a significant work in that it represents a way of developing a comprehensive Montessori curriculum by beginning with the district-mandated outcomes.

David Kahn returned to the subject of curriculum planning as a part of his article, *The elementary curriculum dialectic: Essentialist vs. structuralist*. (Kahn, 1988). Kahn defined two approaches to Montessori elementary education, which he called essentialist and structuralist. Very briefly, Kahn defines the essentialist. “Montessori essentialism implies that the child has an inner self which responds to the intrinsic meaning of a subject, providing that the subject contains the essential” (Kahn, 1988, p. 36).

Essentialists, Kahn argues, do not accept whole school curriculum measures since all studies should rise from the interest of the child. To the Montessori essentialist, the student has the responsibility for the curriculum, as well as keeping personal records of progress.

Kahn states the Montessori essentialist position on curriculum clearly:

The essentialists reject school wide development of curriculum in that it fails to represent the natural interest that arises from the teacher’s presentation and the child’s natural reaction. Curriculum, in terms of representing anything other than this native reaction of child, teacher, and the lesson, is an alien concept. It is the child who must know where his work leads, not necessarily the school or the teacher. (Kahn, 1988, p. 37)

The structuralist point of view, according to Kahn, is very different. Kahn defines the structuralist approach briefly, “The structuralist point of view is not the opposite, or exclusive of the essentialist, but it is different. Structure is the focus. Structure is the basis for remembering. Structure provides the ability for making correlations and discoveries.” (Kahn, 1988, p. 38).

Kahn also states the Montessori structuralist position on curriculum clearly: “The structuralists believe in school wide coordination of curriculum, because in principle, the curriculum plays a supportive role to the child’s interest which is spurred on by increasing complexity” (Kahn, 1988, p. 39).

Kahn later contrasts the positions of the essentialists and structuralists with respect to curriculum. He states the essentialist position as, “ School wide discussion [of curriculum] can lead to much preconceived direction detracting from the child’s spontaneous responses” (Kahn, 1988, p. 40). The structuralist believes that, “School wide coordination of curriculum will strengthen the planned discovery and developed thinking skills that come with complex learning” (Kahn, 1988, p. 40).

As Kahn later suggests, Montessorians do not tend to fall entirely within either philosophical camp. Furthermore, some subjects lend themselves more to one approach than another does. Still, the classification system of essentialist and structuralist is helpful in understanding the Montessori approach to curriculum and the resistance that some Montessori teachers and administrators may have toward a written curriculum document.

Ginger McKenzie, then director of a Montessori teacher education center in Texas, addressed the use of Bloom’s taxonomy in the Montessori elementary class (McKenzie, 1989a; McKenzie, 1989b). *Bloom’s taxonomy* or the taxonomy of educational objectives was developed by Benjamin Bloom (Bloom, 1956). The taxonomy consists of six sequential levels of thinking. It is a widely used tool for addressing the level of thinking in which students engage.

McKenzie studied thinking within the Montessori elementary setting. She suggested establishing small individual assignments on a series of cards for the use of the

Montessori students in the elementary class. The cards, which McKenzie called “project cards” (McKenzie, 1989a), were to be arranged according to the various levels of Bloom’s taxonomy.

As examples, McKenzie offered sample project cards in what she called country study, volcano study, landforms study (McKenzie, 1989a), and the Permian period (McKenzie, 1989b). McKenzie reported that cards like these were available for purchase in the areas of landforms, time line of life, geography (two sets), and volcanoes. (McKenzie, 1989a, McKenzie, 1989b), These cards, taken together and added to others of the same sort in other subjects certainly constitute an element of a curriculum. This plan represents an effort to organize the elements of the Montessori curriculum. It does not, however seem to contain all elements of a fully developed curriculum, such as age levels, Montessori materials, and scope.

McKenzie’s plan does include an evaluation component. She calls for an “Evaluation Sheet” for each project undertaken (McKenzie, 1989a; McKenzie, 1989b). The evaluation sheet is a self-evaluation instrument and is to be filled out by the child in response to a set of questions.

Summary of the 1980's

During the 1990's, Montessori elementary curriculum continued to be discussed. Among the ideas that surfaced were requirements for the upper elementary level of Montessori, a Montessori scope and sequence, alignment of Montessori with public school curriculums, the introduction of structuralism and essentialism in Montessori and aligning Montessori with Bloom's taxonomy.

Kahn (1980) discussed the preparation that must occur in the lower elementary to ready students for upper elementary. This began discussion of grade level requirements and student preparation for a more complex curriculum. Schaefer and Schaefer (1983) followed this up with a their emphasis on what must be offered in the lower elementary to lead to success in the upper elementary. They mentioned specifically reading proficiency and cursive writing as essential curricular elements.

Seldin (1983) examined the entire scope of Montessori curriculum from age 3 up to age 12, with an integrative focus. The scope and sequence document was divided into eight major areas. Still needed are specific age and grade level expectations for this scope.

Public school programs need to take into account the official school district curriculum. O'Dwyer (1985) matched Cincinnati school district objectives with Montessori curriculum and materials. This represented one of the earliest efforts to align the two.

Kahn (1988) developed a classification system of Montessori teachers based on the two poles of structuralism and essentialism. This scheme can assist in understanding

the Montessori approach to curriculum and resistance of some Montessori practitioners and administrators to a written curriculum document.

McKenzie (1989a, 1989b) studied thinking within the Montessori elementary setting. She created project cards in some subject areas, arranged around Bloom's taxonomy and levels of thinking. This was absent certain elements of curriculum, such as scope, age levels, and Montessori materials.

The 1990s

Rajendra Gupta provided a lengthy review of the elementary level, in which he addressed the needs and tendencies of the elementary age child, Montessori principles and strategies in elementary education, the preparation of the environment, and running the class (Gupta, 1991). Gupta does not specifically refer to curriculum management or curriculum documents in this article, but he does approach it in another way.

Gupta suggests that work contracts be developed with the children, from a set of lessons and activities developed by the adult. These provide an organized system. Gupta wrote, "It is extremely important to have a system to present new concepts to children in an organized way" (Gupta, 1991, p. 118).

From the lists of work choices reflected in the work contract, the children are given a limited number of activities to choose from every day. They may choose one or more of these activities, preserving the Montessori principle of choice.

Gupta presents a sample list of activities. He writes, "These sample lists are meant for seven year old children" (Gupta, 1991, p. 121). The fact that the list is age based suggests that Gupta at least has an idea of an age-based curriculum in his mind. This

would meet with Gupta's suggestion that children must choose activities not just from total free choice or even from their curiosity. If children may choose whatever they like, Gupta maintains that they will choose things that they already know rather than new work. (Gupta, 1991, p. 118).

Gupta also maintains that a choice made out of curiosity is not a real choice. To be a real choice, it must stand upon an intellectual basis. "True choice is something that comes from within and is based on knowledge" (Gupta, 1991, p. 107). This means that the choices must come from work or lessons that have been presented to the child.

Gupta's (1991) plan does suggest a curriculum. It is a curriculum maintained by the adult and somewhat modified by the children. There is, however, no school wide component to this plan. It also does not make clear an overall scope or sequence.

An unattributed small piece in the *Public School Montessorian* (New and notable, 1994) discusses work done by Evelyn Kalpin and associates at the Princeton (NJ) Montessori school. It reported that they had developed a computerized set of individualized, sequential tracked Montessori activities. It is not clear from the report whether there was more to this system than simply activities, such as a scope and sequence.

This system was discussed by Nancy Rambusch (1994), founder of the American Montessori Society. Rambusch comments, "Montessori elementary teachers, as all others, are expected to provide experiences reflective of the culture's curricular expectations for the particular age children comprising their classes" (Rambusch, 1994, p. 16). This suggests the need for an established curriculum, meeting those curriculum expectations. Rambusch references the system that the Princeton teachers implemented

as, “A sequential path through any curricular area, in which each step is numbered and corresponds to a set of materials preassembled by the teacher, also numbered and directly accessible to the children” (Rambusch, 1994, p.18).

The computer based system, originally developed by Kalpin, is no longer in use at Princeton Montessori School due to difficulties in implementation. According to the head of Princeton Montessori School, “We stopped using/printing any of this resource as it seemed to always have some difficulties with design and presentation from teacher to teacher” (Marsha Stencil, personal communication, November 3, 2006).

Catherine Calder, a Montessori school head in Michigan, authored a 9-year curriculum overview in the areas of history and geography (Calder, 1994). She suggests that history be viewed as the centerpiece of the Montessori elementary curriculum. Literature, geography, and reading are to be connected to this center. Calder provides a brief overview of the scope of each grade or elementary year.

As an example, for the first year (first grade) she writes, “History during the first year in the elementary is the study of the passage of time. Children’s literature is rich with stories about the seasons. Geography can be studied as we look at the seasonal changes on the continents” (Calder, 1994, p. 3).

As a curriculum, this work by Calder offers an organized start. It gives an annual overview in the areas of social studies and literature. It does not contain a scope in the other curriculum areas.

In 1979 and 1980, Tim Seldin assembled a comprehensive look at the scope and sequence of Montessori, not published until 1994. The book, *Montessori Curriculum Scope and Sequence* (Seldin, 1994), is a tabular overview of the entire Montessori

program. It is the fourth of the four works that specifically attempt to outline a detailed Montessori curriculum for the elementary school.

In introducing the work, Seldin wrote,

Often all we work with is a list of Montessori materials and lessons, without defining the normal outcomes, set forth in terms of specific skills and knowledge, that we eventually hope to see develop within our children. One reason why many schools don't work with a clearly defined curriculum is that our teachers may come from many different perspectives due to training and experience. Another is that developing a proper curriculum guide is an enormous piece of work. (Seldin, 1994, p.1)

This work consists almost entirely of tables, listing lessons and Montessori materials referenced to ages. It does include all six curriculum areas, but expands from them into other related areas as well.

At the time of its release, the guide aimed to meet national standards and curricular trends in the United States. One goal, according to Seldin was to ensure that no expected basic skills or knowledge were unintentionally overlooked by Montessorians.

Each page of the guide lists lessons and age levels but without substantial supporting information. Still, this is the most complete attempt to quantify the Montessori curriculum.

Structuralism in Montessori was first defined by Kahn (1988). Following in this line with a structuralist point of view, Evelyn Kalpin (1995) looked at the need for a clearly defined curriculum.

Kalpin clearly recommends that there be a defined curriculum in elementary Montessori schools rather than an alternative Montessori practice of *following the child*. Following the child is often thought to mean that the teacher follows the interests and

preferences of each child, which lets the child essentially set the curriculum and plan of study.

Kalpin argues that the adults should follow the child in the sense of understanding them, knowing their stage of development and how to fulfill the needs of young people moving into the future. She maintains that this does not and should not mean following the interests of the children only, offering them a free choice of activities. Kalpin wrote:

Free choice of activity is not the central issue here. Free choice will not necessarily serve the purposes of an information-seeker building abstract concepts, although it could in some cases. Free choice of activity in the elementary stage of development has the potential to be self-serving, self-gratifying or self-indulgent, as opposed to concept building or socially integrating. (Kalpin, 1995, p. 1)

Kalpin contends that the problem underlying the free choice notion in the elementary is an outgrowth of the early childhood Montessori program. She agrees that in that first plane of development free choice may be an appropriate component of the Montessori approach. In the elementary level, however the mind of the elementary child is different. Kalpin (1995) suggests that the differences lie in the areas of self-awareness, social development, rationality, information gathering, and abstraction. With this basis, these children, says Kalpin, need adult teacher direction.

Kalpin argues that children in the elementary years who are not able to make positive choices to be information-gatherers, and concept-builders need the curricular direction and support of a teacher. “ If we ask ourselves, ‘Why is this happening?’ the answer is simple: because we allow it” (Kalpin, 1995, p. 1).

Kalpin does not offer a model curriculum, scope, or sequence. Her article is simply an argument that a structured curriculum approach is required to meet the needs of elementary children.

In 1996, John Chattin-McNichols, a Montessori teacher educator from Seattle, discussed the curriculum for the upper elementary level in Montessori (It's elementary, 1996). Speaking of the upper elementary instructor, Chattin-McNichols stated, "The teacher is often looked on as an expert, but is at something of a loss concerning the curriculum" (It's elementary, 1996, p. 18). Chattin-McNichols also pointed out that the curriculum in the upper elementary level is less developed than that in the lower elementary level of Montessori. Chattin-McNichols asserted that it is an expectation that upper elementary Montessori teachers cover the mandated curriculum that is required by their state, as well as any Montessori components that may be unique to their school.

The cultural curriculum is often defined in Montessori as including the arts, history, and geography. Duffy and Duffy (1997) included these as well as literature, biology and science. As Calder had done earlier (Calder, 1994), they then constructed a curriculum based upon the cultural subjects. Unlike Calder, their sample curriculum was set for a single sample year. It does have monthly themes and activities throughout the school year. Also, in contrast to Calder (1994), Duffy and Duffy do not refer to grade or age level lessons or expectations.

The curriculum plan put forward by Duffy and Duffy (1997) is in a chart format, with a column for each subject area, and rows for the months. One column is devoted to Projects, assignments, and field trips. As a chart, this curriculum plan is most useful in

seeing how a yearly plan could be organized. It is unfortunate that arithmetic, geometry and grammar are not included in this plan.

“What good is it for teachers to know how to teach, if they don’t know what to teach?” (Morrison, 1999). This question lies near the beginning of a piece by George Morrison in the *Public School Montessorian*. Most of Morrison’s article focuses on standards and the standards movement. He also addresses the need for planned curriculum within Montessori schools.

Morrison addresses some of the concerns expressed by Montessori teachers about a planned curriculum. He acknowledges that some teachers may state that they do not teach curriculum or standards, but instead teach children. Morrison argues that that statement is only partly true. “It is true that making children the center of the educational process is the heart of developmentally appropriate practice. But developmentally appropriate practice merely helps guide how teachers teach. It says very little about what to teach” (Morrison, 1999, p. 8).

Morrison’s position is that the curriculum is frequently the missing ingredient in school practice. Morrison calls for a “planned curriculum” (Morrison, 1999, p. 8), arguing that schools without such a plan can lead to low achievement and lost potential. Further, Morrison makes the case that parents must be informed about what children are expected to learn. Clearly written standards and written curriculum can offer this information to parents.

Summary of the 1990's

The 1990's were a decade with a large focus on elementary curriculum. Gupta, Kalpin, Rambusch, Calder, Seldin, and Morrison all discussed more organized and planned curriculum management.

Gupta (1991) suggested that elementary children be provided with a set of organized lessons and activities developed by adults. He wrote against total free choice based on curiosity, but suggested an age-based curriculum as a guide for the child's work. A school wide curriculum was not part of his work.

Kalpin (New and notable, 1994) developed a set of computerized, individualized, sequentially tracked Montessori activities. Rambusch (1994) responded to this, emphasizing that elementary teachers must provide experiences that reflect the expectations of the American culture.

Calder (1994) authored a 9-year curriculum overview of the cultural subjects, using history as the centerpiece of the elementary level. She provided a brief overview of the scope for each elementary year.

Seldin (1994) produced a detailed Montessori curriculum for age 3 through 12. He produced tables listing lessons and Montessori materials referenced to ages. This is the most complete attempt to quantify a Montessori curriculum.

Kalpin (1995) contributed a second article, in which she recommended a definite organized curriculum for elementary Montessori schools. Because of their intellectual and social characteristics, Kalpin asserted that elementary children need adult teacher direction in lessons and a structured curriculum.

Morrison's (1999) position was that developmentally appropriate practice describes how to teach, but not what to teach. He calls for standards and a planned curriculum, or children will experience lost potential and low achievement. He also argued that a defined curriculum leads to greater accountability to parents.

The 2000's

The American Montessori Society (AMS) in cooperation with several other Montessori organizations, released a position paper called *Essential Elements of Successful Montessori Schools in the Public Sector* (American Montessori Society, n.d.c.). This paper (Appendix C) offers five points under its section on Curriculum/Environment. These points are as follows:

1. Offer a full complement of Montessori materials purchased from Montessori dealers.
2. Develop a classroom design that is compatible with Montessori "prepared environment" principles.
3. Create uninterrupted daily work periods of 90 minutes to 3-hours, considering the 3-hour work cycle as ideal.
4. Integrate specialty programs (music, art, physical education, etc.) around the uninterrupted work periods.
5. Apply the appropriate multi-age groupings: 3-6, 6-9, 9-12, 12-15, necessary for the diversity, flexibility, and reduced competition integral to Montessori. (American Montessori Society, n.d.c, p. 2).

In this list of curriculum and environment points, only one point (number 4), deals with a specific curriculum issue, specialty programs. The others address materials, classroom design, scheduling, and multi-age grouping. The various Montessori groups did not take up issues of written or overt curriculum, age or grade requirements, or minimum standards.

In his lengthy article, *Joyful Scholars: Montessori for the elementary years*, Tim Seldin (2001) touches briefly on issues of curriculum planning and requirements. Seldin relates that Montessori teachers come to class with exciting and captivating lessons prepared. These lessons may have taken extensive preparation and could possibly even include live specimens. “A Montessori teacher will invite her students to a lesson, consciously try to attract and then capture their interest, knowing that when she tries to ‘sell’ something, sometimes she will ‘fail to make the sale’” (Seldin, 2001, p. 10).

Seldin goes on to describe a situation in which a Montessori elementary teacher brings a live specimen to class and announces to the entire class that up to eight students may attend the lesson. “She invites her students to come over for a lesson voluntarily, knowing that there will be days when no child will come” (Seldin, 2001, p. 10).

Seldin does not comment on how the children not included among the eight selected would receive the needed instruction. Neither is there discussion of what the teacher’s reactions and strategies may be in delivering the needed lessons when no child attends a lesson.

Seldin does go on to argue that children in a “well run elementary class” (Seldin, 2001, p. 11) may not simply do whatever it is that they want to do. There is in this article no suggestion of a need for what Morrison called a “planned curriculum (1999, p. 8).

Alan Gartner, Dorothy Kerzner Lipsky, and Kathryn Rindskopf Dohrmann studied the public Montessori program in Milwaukee, WI established as public magnet schools in the mid-seventies (Gartner, Lipsky, & Dohrmann, 2003). The study compares the academic outcomes of two groups of students who graduated from the high schools of the Milwaukee Public Schools (MPS) during the years 1997-2001. The first group

includes 201 students who had gone from age four through the fifth grade in Montessori programs at MacDowell or Greenfield school. The second group of students was a matched sample of graduates from the same high schools who did not attend Montessori schools.

The two Montessori schools had their admission based upon a lottery system. However, at the time of the research, the records of those who had not been selected were not available. As a result, a comparison group was established. To allow for statistical control of factors that might influence the outcomes, Montessori students and comparison group students were matched by gender, race/ethnicity, and socio-economic status.

The research focused on data available from the MPS archives. The findings were based on scores from standardized tests, as well as on overall and subject-specific high school grade point averages (Gartner, Lipsky, & Dohrmann, 2003).

The results showed that students who had participated in the Montessori program significantly outperformed the comparison group on mathematics and science scores. Montessori and peer control students were not significantly different on English and social studies scores, or on their grade point average.

It is important that these results are from the student's high school years, long after they had left Montessori (Gartner, Lipsky, & Dohrmann, 2003). This suggests a possible long-term positive impact of Montessori. The authors summarized the results, "In essence, attending a Montessori program from the approximate ages of three to eleven predicts significantly higher mathematics and science standardized test scores in high school." (Gartner, Lipsky, & Dohrmann, 2003, p. 4).

Michael Rosanova (2003) summarized the Montessori elementary approach as well as some curricular elements. Rosanova compared Montessori curriculum and approach with the approach in conventional American schools, which he characterizes as “mistaken practices” (Rosanova, 2003, p. 8).

In a traditional or neotraditional classroom, the Three R's are the focus. The teacher stands before the group, disburses information, and then leads a few group drills. One size fits all. Children who don't catch on are relegated to lower "ability groupings," and the same mistaken teaching practices are repeated. (Rosanova, 2003, p. 8)

Rosanova also lists Montessori materials and other supplementary materials that would be in an elementary classroom. He suggests that every Montessori elementary child has “ a form to help him track his daily progress as he fulfills his work contract, covering subject by subject step by step according to the individualized path that he and his teacher have agreed to.” (Rosanova, 2003, p. 8).

The existence of the work contract goes back to Parkhurst (1922) and later to Gupta (1991). Parkhurst used them in her Dalton Plan, an early modification of the Montessori approach. Gupta suggested that work contracts be developed with the children, from a set of lessons and activities developed by the adult. He argued that the contracts provide an organized system for management.

Margaret Loeffler (2004) addressed the curriculum in terms of the child's society and culture. She identifies four central characteristics of the child implicit to the Montessori approach that she maintains should inform the curriculum. These characteristics are, “the ability to concentrate, an interest and pleasure in meaningful work, self-discipline, and sociability (the desire to be a contributing member of a community)” (Loeffler, 2004, p. 26).

Although children are in Montessori elementary programs in many different cultures around the world, the focus of a literacy based, sophisticated culture means that children must focus upon certain skills. Loeffler argues that the curriculum must then be organized to meet the requirements of the locale in which the school is located. “For instance, the elementary math curriculum should be designed to achieve the required goals of the school district (even those not embodied in the traditional Montessori materials) while at the same time encouraging and monitoring the continuing development of the four characteristics” (Loeffler, 2004, p. 27).

This suggestion supports the notion first advanced by O’Dwyer (1985). In O’Dwyer’s work, the Montessori program and curriculum was correlated with the Cincinnati public schools curriculum plan. Loeffler generalizes that this correlative approach is vital for Montessori children to acquire culturally essential competencies.

Loeffler pictures the curriculum as having two important components. One is the content thread and the other is an emotional and social development strand. “These two threads must be carefully intertwined at each age level for optimal growth to take place” (Loeffler, 2004, p. 27). According to Loeffler, Montessori elementary schools are under constant pressure from school districts, parents, and by teachers, themselves, toward a major focus on academic achievement. She argues that Montessori goals can only be achieved if this emphasis is resisted in favor of a balance between the two threads.

Loeffler suggests that blending or integrating activities can achieve this balance. Without overlooking any elements of the curriculum, mingling artistic elements with reading or math would contribute to a curricular balance. Loeffler does not indicate how this curriculum is to be documented or written.

Carolyn Daoust (2004) was interested in the authenticity or modified nature of Montessori practice. As has been noted, Montessori education is in the public domain and is not subject to a central controlling body. The variety of Montessori interpretations in the United States is very broad (Daoust, 2004).

Daoust interviewed 66 early childhood Montessori teachers concerning five specific areas of Montessori practice: supplementing or replacing traditional materials, opportunities for children's choice, providing long, uninterrupted work periods, implementing mixed-age grouping spanning 3 years, and presenting materials to children individually rather than collectively. The analysis of Daoust's (2004) results demonstrated a very considerable variation in the implementation of the Montessori approach.

It is interesting to note that three of these five areas are listed in the *Essential elements of successful Montessori schools in the public sector* (American Montessori Society, n.d.c). These three are: supplementing or replacing traditional materials, providing long, uninterrupted work periods, and implementing mixed-age grouping spanning 3 years. It is significant, regarding Daoust's point of presenting materials to children individually rather than collectively, that this point does not apply to the elementary level, in which group presentations are expected.

Daoust (2004) identified four subgroups among the teachers participating in this research. The first group, consisting of 12 teachers was labeled as *traditional*. This group offered longer work periods, and implemented 3-year age grouping group. (Teaching, 2005). These teachers were offering a more authentic form of Montessori practice.

The second group consisted of 24 teachers who closely followed an authentic form, but not to the same extent as the traditional group. They offered a shorter work period and supplemented the Montessori materials in their classroom (Teaching, 2005). These teachers, Daoust (2004) labeled as *contemporary*.

The third group of 27 teachers, Daoust (2004) called *blended*. This group tended to combine elements of Montessori education and conventional practices. These educators offered shorter work periods, mostly whole group instruction and allowed children to work with materials that had not yet been presented.

The final cluster, consisting of only three teachers, offered a range of materials including limited Montessori materials and other materials, offered varied presentation strategies and shorter work periods. This group, Daoust identifies as *explorative* (Daoust, 2004).

Although the study was aimed at the early childhood level of Montessori, Daoust's conclusions can be applied to the elementary level as well. Daoust emphasized the importance of defining Montessori expectations and understanding teacher practices:

Diversity of approaches becomes a problem when parents enroll their children in a program expecting one thing and then find another. It is also a problem when teachers believe that they are implementing authentic Montessori practices when they are not. (Teaching 2005)

Angela Murray (2005) studied the challenges being faced by public Montessori schools. Murray utilized an online survey aimed at principals, directors, curriculum coordinators, and other Montessori public school leaders, receiving 85 responses.

The first challenge reported to Murray is school budget cuts. "Budget cuts received almost twice as many ratings of 'major concern' compared to federal or state

requirements, the next most problematic areas” (Murray, 2005, p. 53). Although this affects Montessori schools, the cuts affect all schools within given districts.

A second important challenge discussed by Murray is the difficulty of meeting the requirements of the federal No Child Left Behind (NCLB) act (U.S. Department of Education, n.d.a; U.S. Department of Education, n.d.b). This act has led to public Montessori schools being required to administer standardized tests to their pupils. Montessori schools have not traditionally emphasized testing. However, the study finds that many schools have participated in standardized testing programs for many years. It also found that support for mandated testing does not differ between those respondents with and those without Montessori credentials, although 32% of the respondents replied that NCLB testing requirements pose a challenge for their school. (Murray, 2005).

There were no specific question areas regarding the Montessori curriculum in the survey. However, this does raise questions as to how much the traditional six subject Montessori curriculum may be affected by the NCLB and testing.

Murray concludes that Montessori public schools are coping well with the new challenges. She writes:

The study finds that Montessori continues to be a popular option in public schools across the U.S. even though they struggle with budget cuts, stricter state and federal requirements, and teacher shortages. Public Montessori elementary schools strive to maintain a unique educational environment through certified teachers, ongoing professional support, and well-equipped classrooms. (Murray, 2005, p. 53)

The *Montessori Moments* research project (Ely & Matias, 2006) was a qualitative examination of Montessori practitioners’ classroom experience. The research was based on asking Montessori teachers to write vignettes about what Ely & Matias (2006) called “Montessori Moments.” The teachers were to focus on moments that helped them clarify

some crucial issues about Montessori philosophy as exemplified in classroom and school life.

The research was based on 165 vignettes submitted by people in 23 states, Puerto Rico, Canada, British Virgin Islands, and Grand Cayman Islands. The greatest number, 71%, came from teachers (Ely & Matias, 2006). There were additional responses from assistant teachers, directors, parents, student teachers, and others.

The researchers analyzed the vignettes that they received and categorized them into the 14 following major category frames:

1. Children as Moral Beings
2. Confident, Competent Learners
3. Independent/Interdependent Learners
4. Comfortable with External Authority
5. Citizens of the World
6. Stewards of the Planet
7. Socially Responsible Learners
8. Free within Limits
9. Spiritually Aware Children
10. Autonomous Learners
11. Intrinsically Motivated Learners
12. Academically Prepared Students
13. Metacognition
14. Critical Montessori Incidents. (Ely & Matias, 2006)

Based on their classification system, the researchers ranked all 14 categories. The four top ranked categories in terms of responses were as follows (in rank order):

1. Confident, Competent Learners
2. Independent/Interdependent Learners
3. Comfortable with External Authority
4. Intrinsically Motivated Learners. (Ely & Matias, 2006)

These four elements suggest a support of basic elements of fundamental Montessori theory. Ely & Matias commented, “If our classification system was sound,

then the weights of the top four ranked categories are indeed a strong—even dramatic—support for some of Maria Montessori’s major dictums” (Ely & Matias, 2006, p. 3).

Ely & Matias also analyzed the documented roles and interactions of the teachers in the vignettes. Throughout the process of analysis there was 95% inter-rater agreement.

Four major teacher roles emerged from the data. In rank order, there were:

1. Teacher as observer.
2. Teacher learns a lesson from child (children). Direct example.
3. Teacher respectful of child’s (children’s) learning style and needs.
4. Teacher follows child’s (children’s) needs. (Ely & Matias, 2006)

Ely and Matias summarize their report by suggesting that these data suggest that Montessori teachers are also acting in line with Montessori theory and philosophy. They emphasize that the moments that stood out for participants strongly supported Montessori ideas.

This research did not specifically address Montessori curriculum. However, in one sense, it may. Wiles & Bondi, (2002, p. 31) define curriculum as follows, “We see the curriculum as a desired goal or set of values that can be activated through a development process culminating in experiences for children.” With this definition, the activities of the students and particularly the teachers can be seen as part of the process involving experiences for children, making it curricular.

April Jones (2006) of William and Mary University focused on reviewing Montessori research conducted between 2000 and 2005. Jones determined that Montessori research during that period fell into six strands. These were:

1. The history of the Montessori method,
2. The role of teacher beliefs in the implementation of the method,
3. Effects of the method on at-risk students,
4. Effects of method on exceptional learners including learning disabled, developmentally delayed, and gifted/talented,

5. Traditional schooling versus Montessori in student achievement and social development, and
6. Pedagogy of Montessori. (Jones, 2006, p. 8)

Only one of these strands contained research that directly addressed Montessori curriculum. That was strand two, the role of teacher beliefs in the implementation of the method. In this strand, Jones referenced Daoust (2004) who had studied varieties of teacher implementation of the Montessori approach.

It is interesting that curriculum research is not among the six strands identified by Jones. This may indicate that Montessori curriculum; curriculum management and implementation and curriculum assessment and auditing are under researched in the Montessori context.

Angeline Lillard and Nicole Else-Quest (2006) studied the social and academic impact of Montessori education at a public Montessori school in Milwaukee, Wisconsin. The study focused on the end of the two most widely implemented levels of Montessori education: early childhood (3- to 6-year-olds) and elementary (6- to 12-year-olds).

The study protocol used two groups of children, the Montessori group and the non-Montessori or control group. Both the Montessori group and the control group had entered the Montessori school lottery; those who had been accepted were assigned to the Montessori group, and those who had not been accepted were delegated to the control (other education systems) group. This strategy addressed the concern that parents who seek to enroll their child in a Montessori school are different from parents who do not. Because the school district's lottery was random, the Montessori and control groups were expected to contain similar children.

The researchers studied 59 Montessori students and 53 control students. The Kindergarten group included 30 Montessori children and 25 control children. The group of 12-year-olds group contained 29 Montessori children and 28 control group children. Children at the Montessori school were drawn from ten various classrooms. The control children were enrolled at non-Montessori public inner city schools and suburban public, private, or charter schools. (Lillard & Else-Quest, 2006).

The researchers used cognitive-academic and social-behavioral skill tests that were selected for importance in life. They avoided tests that might examine specific expected effects of Montessori education. (Lillard & Else-Quest, 2006). The results revealed significant advantages for the Montessori group over the control group for both age groups.

On several dimensions, the Montessori children at the public inner city Montessori school had superior outcomes relative to a sample of Montessori applicants who, because of a random lottery, attended other schools. (Lillard & Else-Quest, 2006).

By the end of kindergarten, the Montessori children performed better on standardized tests of reading and math, engaged in more positive interaction on the playground, and showed more advanced social cognition and executive control. They also showed more concern for fairness and justice. At the end of elementary school, Montessori children wrote more creative essays with more complex sentence structures, selected more positive responses to social dilemmas, and reported feeling more of a sense of community at their school. (Lillard & Else-Quest, 2006, p. 1894).

Fariss Samari (2006) interviewed Lillard on the results of her research. Lillard states that all of the Montessori children responded to social situations in a positive way. In general, on several measures, they were more positive than the control group with respect to their school and community. They also were more likely to indicate that they

would respond to social problems in a positive rather than a retaliatory way (Samari, 2006).

The academic results were also discussed in the interview. Samari quotes Lillard as saying, “What's striking about the findings...is that the 5-year-old Montessori students did better academically - and the 12-year-old Montessori children did as well - as the other students, even though Montessori students don't take tests regularly” (Samari, 2006).

This study demonstrates the importance of a Montessori program in the public schools. The study was unique in that it looked at both Kindergartners and 12 year olds, in an inner city setting. Commenting on this study with respect to the Kindergartners, Jacqueline Cossentino wrote, “Drawing from a population of inner-city public Montessori school students, the study shows that 5-year-olds in the group outperformed their non-Montessori counterparts in nearly every measure.” (Cossentino, 2007, p. 31). Focusing on the 12 year olds, Cossentino observed, “Findings for 12-year-olds, while not as dramatic, also suggest reliable success rates for Montessori students” (Cossentino, 2007, p. 31).

Cossentino's remarks, appearing in Education Week (Cossentino, 2007), contained supporting information about the Lillard & Else-Quest study as well as general information about Montessori education. Cossentino suggests that the study may offer directions for future school reform. “Seeking to crack the code of ambitious school reform, many researchers have turned their attention to two key variables: capacity and coherence. The new Montessori study offers important insight into both these phenomena, suggesting powerful lessons for reformers” (Cossentino, 2007, p. 32).

Jay Mathews, (2007) in the Washington Post, acknowledged the centenary celebration of Montessori education. Mathews considers Montessori and John Dewey to be, “perhaps the most progressive thinkers in the modern history of education” (Mathews, 2007, p. B2). Mathews references AMS president Michael Dorer as urging the creation of more public Montessori schools. Dorer indicated that that would alter the perception of Montessori as aimed at an upper income demographic, instead opening it to minorities and persons in poverty (Mathews, 2007).

Mathews does offer evidence that Montessori is presently appealing to minorities, such as African-American professionals. Mathews cites an area Montessori school head as suggesting that one reason that Montessori works in the elementary years is that it puts children in charge of their own learning. (Mathews, 2007).

Linda Jacobson, (2007) an assistant editor for Education Week, discussed the adaptation of public Montessori schools to state rules and federal regulations. Jacobson identifies the challenge as staying true to Montessori philosophy while also scoring high enough to meet adequate yearly progress goals under the federal NCLB program. Jacobson quotes a Montessori school principal, “We see more stress on the teachers. It is really against their philosophy to test their children. But if we don’t show that this program helps children perform, then school system officials will do away with our program.” (Jacobson, 2007, ¶7).

These comments are what Jacobson identifies as evidence that many testing and accountability mandates run counter to Montessori theory. She identifies the melding of governmental requirements with Montessori practice as “practically impossible” (Jacobson, 2007, ¶14).

Summary of the 2000's

This decade saw increasing research conducted on Montessori education. Some of this was done in public schools and some addressed Montessori curriculum. Montessori's growth in the public schools may be a reason for this growth.

AMS (n.d.c.) dealt with specialty areas of a curriculum but not the Montessori curriculum. Seldin (2001) related that teachers must prepare exciting and captivating lessons but gave no suggestion of a planned curriculum. Gartner et al. (2003) compare academic outcomes of two groups of students - one Montessori and a comparison group. They found that the Montessori students outperformed the comparison group on math and science evaluations, which suggests a possible long-term positive impact of Montessori education on older students' academic performance. Rosanova (2003) suggested that Montessori elementary students track daily progress with a work contract.

Loeffler (2004) addressed curriculum in terms of four central characteristics of the child, which should inform the curriculum. Those are: ability to concentrate, pleasure in real work, self-discipline, and sociability. She argues that a curriculum must be organized to meet the requirements of the culture in which the school is located. Montessori children acquire culturally essential competencies.

Daoust (2004) researched the degree of authentic implementation of the Montessori Method and found considerable variation. Daoust emphasized the importance of defining Montessori expectations and understanding teacher practices of implementation.

Murray (2005) studied the challenges faced by public Montessori schools— budget, NCLB, testing and their effect on the six subject Montessori curriculum. Ely &

Matias, (2006) clarified issues regarding Montessori philosophy in classroom and school life. Jones (2006) identified areas of recent research in Montessori education.

Lillard & Else-Quest (2006) studied social and academic impact of Montessori education in public school and found that the Montessori students had superior outcomes relative to other students. This was supported by Cossentino (2007).

Mathews (2007) suggested that Montessori and Dewey are perhaps the most progressive thinkers in the modern history of education. He believes Montessori appeals to minority professionals as an educational setting for their children, because it puts children in charge of their own learning. Jacobson (2007) discussed testing and accountability mandates, which are contrary to public Montessori practice and theory.

Summary of the Literature Review

The review of literature covers a scope of one hundred years of Montessori education, beginning with Montessori's establishment of the first *casa dei bambini* in 1907. Certain varied and yet complementary key ideas seem to emerge from the review. The literature review will be briefly examined from the point of view of three of the central ideas: cosmic education, the six basic subjects, and the nature of the child.

Cosmic Education

In Montessori schools, the unifying approach to elementary education is called cosmic education. This involves the notion of joining all elements of a curriculum together, using a universal view and central themes. Montessori first offered cosmic education as the fundamental idea of the elementary method in 1935. Montessori herself

(1948) recalled this 13 years later. Havis (2005) later supported the 1935 date. Later, Montessori added substantial material to cosmic education in *To Educate the Human Potential* (Montessori, 1948). Cosmic education was offered as the centerpiece of the method many times since then (Dorer & Bauerlein, 2002; Dorer, 2005a; Dorer, 2005b; Duffy & Duffy, 2002; Gupta, 1991; Montessori, 1973; Montessori, 1976; Seldin, 1983; Two notable events, 1956; Wickramaratne, 1964).

Six Subjects

The idea of the six basic subjects first seemed to emerge in 1919 (A correspondent, 1919). Montessori was working in Barcelona with elementary age children. She included geography, history, science, arithmetic, geometry, and language with a grammar spotlight. Here then is a beginning look at what later became the six major subjects of the Montessori elementary school.

Much later, Mr. Montessori (1957) identified them as language, mathematics (arithmetic), geometry geography, history, and biology. This was later supported by Wickramaratne (1964). In the 1970s, Montessori teacher education students (Bergamo class of 1973-74, 1976) created a detailed curriculum guide divided into the same traditional six Montessori elementary subject areas. In 1978, the Montessori teacher education students produced six large flowcharts, one devoted to each of the elementary subjects. (Bergamo class of 1976-77, 1978). Seldin produced an early scope and sequence document, divided into eight major areas. These are the six major subjects with the addition of two areas from the casa (Seldin, 1983, p.2).

Since the 1950s, the emphasis has been on six core subjects as making up the elementary Montessori curriculum. These are still the six subjects that the American Montessori Society emphasizes in its elementary teacher education programs (American Montessori Society, 2006).

The Nature of the Child

As far back as Bell, came some of the first Montessori ideas of the special nature of the elementary child. Bell contributed two ideas, the age of collections and the new development of the social being (Bell, 1916). Montessori published *The Advanced Montessori Method* (Montessori, 1965), which dealt with the elementary child. A major focus was imagination, with other chapters on the will, intelligence, attention, and the preparation of the teacher. In *To Educate the Human Potential*, (1948) Montessori returned to the topic of imagination in the second plane child.

In Montessori's 1939 lecture (Montessori, 1975), reprinted in 1975, she brought up the extraordinary intellectual development in the elementary child. This, she said, is due to the child's passage from a material to an abstract stage.

In 1956, Mr. Montessori spoke in London (Two notable events, 1956). He addressed the psychology of the second plane. He recommended that attention be paid to the child's urge to work in groups rather than singly or in an isolated way.

Mr. Montessori (1973) again discussed the psychological make-up of elementary children. He observed that the younger child in the first plane asks "How?" The elementary or second plane child asks "Why?"

Kahn (1980) discussed the age 9-12 Montessori child. In this article, Kahn argued that by this age, the time for basic skill competencies is over. He saw the upper elementary child as a well-polished learner, able to function with abstract ideas.

Kahn (1988) also examined how Montessorians of differing philosophical orientations view the child. The positions labeled as *essentialist* and *structuralist* were defined and discussed.

Gupta (1991) addressed the needs and tendencies of the elementary age child. He also discussed Montessori principles and strategies in elementary education, the preparation of the environment, and running the class.

Kalpin (1995) argued that elementary children are different enough from first plane children to require a very different approach, not including following each child's interest or offering them a free choice of activities. She characterized second plane children as having a very different mind. Kalpin suggested that elementary child is more self-aware, socially developed, rational, abstract and a better information gatherer.

Conclusions

As a conclusion to the literature review, two questions need to be examined.

These are:

1. Has the review uncovered other research that is identical, or very similar to the present research?
2. Has the review demonstrated a need for research in the planned areas?

The literature was reviewed that dealt with all aspects of Montessori curriculum. Additionally, literature was reviewed that dealt with Maria Montessori herself, Montessori history, and two similar and related curriculum plans. There is no evidence of

any research focus similar to the present study. The bulk of the literature reviewed is not research based, strongly suggesting a need for additional research.

The literature review revealed that Montessori curriculum has been discussed for nearly a century. This discussion has focused on subject matter, delivery of lessons, lesson planning, cosmic education, the elementary child, and other related topics. Much of the existing information can be somewhat helpful. However, there seem to be only four actual curriculum documents.

All four of these are archived and may be difficult for many schools to access. As a result, many schools and Montessori teachers may not be aware of the existence of these documents. In any case, their utility may be questionable, especially to the non-Montessorian, since they only offer lists of lessons.

In conclusion, the review revealed that there is some basic material available which surrounds the Montessori curriculum. Most of this material deals only with certain aspects of the curriculum and finds curriculum management to be absent. This indicates that the research questions still need to be answered; there is a need for research on Montessori curriculum and its management.

CHAPTER 3: METHODOLOGY

This research study examined the management of curriculum in elementary Montessori public schools in Minnesota and Wisconsin. The research study was based upon a survey design. The survey was electronically administered to representatives of Montessori public elementary schools in Minnesota and Wisconsin.

One research goal was to determine exactly what means of curriculum management were being used in these schools at the elementary level. A second goal was to examine the attitudes and feelings of Montessori teachers and administrators toward management of the curriculum. A third goal was to assess the feelings and beliefs of teachers and Montessori school heads with respect to curriculum.

Schools always make decisions about curriculum management and implementation. These decisions may be made intentionally and carefully, with a great deal of study. The decisions are usually carefully planned and organized.

It is also possible, however, that the curriculum decisions will be a result of simply letting things happen, in which case the decision is by default. Curriculum elements may simply evolve or emerge without careful or conscious planning on a school wide basis.

Planned organized and written curriculum documentation results from a concerted effort, which then leads to a product in writing. These planned curricula are examples of an overt or written curriculum (Wilson, 2005). They usually contain a scope, sequence, goals and outcomes, grade level expectations, and necessary learning materials. They are also frequently prefaced with statements of philosophy. In public schools, these are often referenced to standards from the state.

Some schools may simply label that which is taught as a curriculum. This may be based on experience, training or in Montessori schools, on Montessori albums. There may be no written documentation of this type of curriculum. (Augsburg Park Montessori School, 2006; Bridges Montessori, 2004; Turtle River Montessori, 2006). This often creates difficulty in understanding, since others may not consider it as a curriculum without some more complete written documentation.

School administrators and teachers may vary on their attitudes and feelings toward the organization of curriculum. Some may prefer a completely planned and written curriculum. Others may feel that a written curriculum imposes too much control on the teaching and learning process. Still others find a middle ground or gray area between these two positions.

This research investigated the status of curriculum planning and organization in Montessori schools. Information was gathered from public Montessori elementary schools in Minnesota and Wisconsin, as to how or if curriculum is managed on a school wide basis.

The Research Problems

This study sought to determine what method or system of curriculum documentation is presently in use by Montessori public schools in Minnesota and Wisconsin. The first goal of the research was to determine whether the curriculum management system in Montessori public schools consists of formal written curriculum documents or if other techniques of curriculum management are used. As a second goal, the research examined how curriculum is managed if there is no specific written

curriculum document. This included a determination as to what forms of curriculum guidance were available. As a third goal, the feelings and beliefs of teachers and Montessori school heads with respect to curriculum were also assessed.

The objective of this research has been to better understand and report on the state of written, overt Montessori-specific curriculum in public schools. Because of distance and convenience, the study focused specifically on the public Montessori schools located in Minnesota and Wisconsin.

The Research Questions

1. What form of curriculum documentation and management provides guidance for public Montessori schools in Minnesota and Wisconsin?
2. Are the beliefs and feelings of Montessori teachers and administrators in Wisconsin and Minnesota congruent with their practice with respect to curriculum?
3. Are there differences in the approach to Montessori school curriculum documentation and management attributable to position, location, or school type?

Overview of the Study

The research protocol is a survey-based descriptive project which gathers both quantitative and qualitative information. The survey was created on SurveyMonkey; an internet firm hosting electronic surveys. This survey was web-based and located on the SurveyMonkey site.

The intention of this study was to provide a description of the management of curriculum in Minnesota and Wisconsin public Montessori elementary schools. It also examined beliefs, feelings, and attitudes toward curriculum, held by Montessori school teachers and administrators.

The electronic survey was aimed at public school Montessori leaders and teachers in Minnesota and Wisconsin public Montessori elementary schools. Its purposes were to assess what sort of written curriculum exists and the perceived value of having a written curriculum.

This survey was also directed to the Montessori elementary teachers at the selected schools. This led to a comparison or contrast of the teachers with the school heads.

The survey consisted of 21 response items and took 10 to 15 minutes to complete. Even while completing the survey, participants were given opportunities to discontinue. The survey was anonymous, and SurveyMonkey protected the anonymity.

Selection of Participants

The population that was accessible for this study consisted of representatives of the public Montessori schools in Minnesota and Wisconsin that included an elementary program. There are presently 29 of these schools in Minnesota and Wisconsin, of which 14 are in Minnesota and 15 in Wisconsin. A listing of all of the schools is provided in Appendix B.

The names of the schools and their addresses were located through Jola Publications (2006), the publisher of *Public School Montessorian*. A list also was

supplied by the American Montessori Society (n.d.b.). The names of the school principals or heads and their email addresses were provided by Dennis Shapiro, editor of the *Public School Montessorian* (D. Shapiro, personal communication, March 8, 2007). The list was checked and confirmed by Gaye Sorenson of the Center for Contemporary Montessori Programs (G. Sorenson, personal communication, March 9, 2007).

The principals or heads of all potential participant schools were contacted by United States mail sent during the week of March 5, 2007. This letter invited the participation of the principal and requested that the principal invite the Montessori teachers in the school to participate (Appendix D).

A follow up telephone call was placed to every principal during the week of March 12. In both of these contacts, the school principals were asked to participate, but were informed that their participation was voluntary, and that they could choose not to. They were also informed that they could withdraw from the survey at any time, even after having begun. They were told that they were selected to be part of this research project because of their position as Montessori school principals or heads in a Minnesota or Wisconsin public school.

Instrumentation

The instrument used for this research was an anonymous electronic survey. It was developed and designed by the researcher (Appendix E) using the SurveyMonkey intuitive survey editor (SurveyMonkey, 2006). To determine what survey format or software to utilize, AMS was consulted. The communications director (Marcy Krever,

personal communication, September 27, 2006) suggested SurveyMonkey as the survey instrument that AMS frequently uses with its membership.

During the survey development stages, information was assembled from the researcher's interest and background in Montessori curriculum. In order to formulate the questions and address a valid survey design, a variety of sources on survey design were studied and their suggestions implemented (Alreck & Settle, 1995; Fowler, 1995; Rea & Parker, 1997; Salant, & Dillman, 1994).

The survey form went through several iterations as research was continued on the topic. This led to questions being developed, added, deleted, or altered. The final form of the survey questionnaire consisted of an introductory page, 21 questions, and a thank-you page (Appendix E).

Survey Design

The intent of the survey was exploratory and descriptive. It gathered data of a descriptive nature, with the goal of describing curriculum practices in the target schools. The survey generated both qualitative and quantitative data. The qualitative data was reflected in open-ended questions asking for attitudes and beliefs. The quantitative data resulted from the demographic section and questions relating specifically to subjects taught and the extent of the present Montessori curriculum.

The survey included 21 questions, which consisted of multiple-choice, and options for short open ended written answers. Most multiple-choice questions in this survey were written with an even number of responses to eliminate a neutral response possibility. There was also an introduction page and a thank you page.

The survey was divided into seven sections (Appendix E). These were as follows: Introduction, Demographics, Montessori Credentials, Curriculum, Opinions and Reflections, and Thank You. The five sections labeled demographics, Montessori credentials, curriculum, opinions, and reflections make up the body of the questionnaire. They were the only sections that contain questions.

Skip Logic

This survey instrument utilized skip logic, which allowed new questions to be determined by earlier answers. This method allowed one survey to be sent to both administrators and teachers.

Skip logic is an electronic form of *conditional branching* (Alreck & Settle, 1995). Its purpose is to account for survey items that may apply to some respondents, but not to others, depending on their answers to a previous question. It is called conditional branching because the branch to the new question is made on condition that a certain answer has been given to the previous item.

The questions that activate the branching or skip logic are sometimes called “filter or screening questions” (Rea & Parker, 1997, p. 40). This is because the answers to these particular questions cause the respondent to skip to the new branch, which screens out certain other items.

Skip logic creates what is called an “explicit branch” (Alreck & Settle, 1995, p. 156). That means that that the respondent goes directly to a particular question and any intervening items are skipped. The advantage of an electronic survey using skip logic is that the branching is done automatically.

There are a number of reasons to use skip logic. In this survey, some questions were only related to certain respondents. It was not desirable to have other respondents be presented with these questions, because they may become annoyed when asked to answer questions that do not relate to them (Alreck & Settle, 1995; Cvent, 2006; Group Surveys, 2007). Skip logic is also considered a proven way to reduce "drop-outs" and overall frustration (SurveyMonkey, 2006).

Because of the skip logic, the survey made it possible to develop comparisons between the responses given by school heads and those from teachers. A demographic section using the skip logic also allowed the researcher to examine the effect, if any, of such factors as location, and school type.

Types of Questions

This survey questionnaire consisted of both closed-ended and open-ended question types. Some of the questions were of a partially closed-ended style.

Closed-ended Questions

Closed-ended questions are multiple-choice items in which the participant has only certain pre-selected responses from which to choose. "Such questions provide a fixed list of alternative responses and ask the respondent to select one or more of them as indicative of the best possible answer" (Rea & Parker, 1997, p. 32).

The multiple-choice questions in the survey questionnaire consisted of three or more choices. They may have asked for single or multiple answers. Radio buttons were used for single answers and check boxes for multiple answers.

An example of a closed-ended question is item 4 in the questionnaire. It asks, “Where is your school located?” The respondents have only three possible answers from which to choose. These are as follows: seven county metro area in Minnesota, greater Minnesota, or Wisconsin. The respondent must choose one of these three options.

Some closed-ended questions leave a final choice of “Other (please specify).” This type of item is called a partially closed-ended question (Salant & Dillman, 1994) because its closed-end nature has been modified by the addition of an option for a more open response.

An example of a partially closed-ended question was item 1 in the questionnaire. It asked, “What is your position in the school?” (Appendix E). Four closed-ended choices were offered: principal or school head; Montessori coordinator or curriculum director; lower elementary Montessori teacher; or upper elementary Montessori teacher. Additionally there was a choice to select the item marked, “Other (please specify).” In that blank, the respondent could specify some other position held within the school.

Open-ended Questions

Open-ended questions seek to explore more qualitative, in-depth aspects of a particular topic or issue. They give the participant an opportunity to respond in detail or with their own information. “Open-ended questions have no preexisting response categories and permit the respondent a great deal of latitude in responding to them” (Rea & Parker, 1997, p. 32). These items may allow longer, essay type responses or as little as a numeric response.

An example of an open-ended question with a longer response possibility was item 10 in the questionnaire. It asked, “If there are grade expectations, please describe how they are used” (Appendix E). The respondents had an open response box in which to type their replies. Due to the electronic nature of the response box, respondents could write as much as they wished in the box.

Some open-ended questions offered only the possibility of a numerical response. An example of this type of numerical open-ended question was item 3 in the questionnaire. It asked, “What is your school enrollment at each level? Please write the number of students at each specified age level” (Appendix E). Five open-ended blanks were offered: below age 3, age 3-6, age 6-9, age 9-12, and over age 12. Respondents could write a numeral in any or all of the blanks.

Summary of Question Types

This survey questionnaire consisted of 14 closed-ended questions and 7 open-ended questions. Two of the open-ended questions were of the short numerical answer type; the other five allow longer answers.

Closed-ended questions predominate because of their advantages. They limit extraneous and irrelevant responses, may remind the respondents of alternatives that otherwise not have been considered or have been forgotten (Rea & Parker, 1997). Additionally, closed-ended questions generally allow for more direct statistical analysis.

Open-ended questions also serve an important purpose. They allow the researcher to retrieve information that cannot be fully answered within the fixed answer format. These answers may be feelings or be of an attitudinal nature. These questions are

particularly useful when posed as follow-up questions connected to the fixed-answer items (Rea & Parker, 1997). In the survey instrument, the five items numbered 10, 13, 15, 17, and 21 were follow-up open-ended questions following fixed answer closed-ended questions.

The open-ended questions with the long response possibilities are difficult and time consuming to analyze statistically, since all answers must be coded (Fink, 1995). The numerical type of open-ended questions generally allow for direct statistical analysis.

Sections of the Questionnaire

Section One: Introduction Page

The introduction section or cover letter was one page in length. In a friendly and cordial style, it introduced the survey, the research goals, and the researcher. It told the participant that the survey was anonymous and gave an estimate of the time required to complete the survey. The introduction page also requested that the recipient, a school principal or head, forward the survey link to all Montessori elementary teachers in his or her school. The cover letter design and content were based in part upon Alreck & Settle (1995).

Alreck & Settle (1995) identify the most important information to be given in the cover letter as telling the recipients what this survey is about, who is asking, why the information is wanted, why the recipient was chosen, how important the survey is, and how long it will take. All of these essential points were included in the introduction letter to this survey.

In addition, the introduction page informed the participants that the research study had been certified by the Institutional Review Board of Argosy University. On this page, the participant was also given the name and contact information of the researcher, his association with Argosy University, and the name and contact information of the faculty advisor. The participants were also prompted to contact the researcher for more information or for the results of the research.

There were no questions on the introduction page. At the end of this page, the respondent simply clicked on the word *next* to begin answering the questions in the body of the questionnaire.

Section Two: Demographics

There were five questions in the demographics section. Three of them were closed end questions. The other two were numerical type open-ended questions.

These demographic items serve two purposes. The first purpose was to establish a picture of the respondent and the school. These questions asked for the respondent's position in the school, the school size at the elementary level, the school enrollment by level, the general geographic location of the school, and the type of school organization.

The second purpose of these initial demographic questions was to offer simple, easy, and non-threatening questions at the beginning. It is believed that this approach increases the response rate of the participants (Cvent, 2006).

Question one in this section asked the respondents to identify their position within the school. It was a partially closed-ended question with four possible fixed answers as

well as one response possibility, which allowed the respondent to specify a position not on the list. The first of the fixed choices is “Principal or school head.”

This first question was a screening question in that the answer would activate skip logic. Those respondents who identified themselves as school heads or principals were directed electronically to answer all questions in the demographic section. Those with other positions within the school would be electronically skipped to question six in section three, which is the page on Montessori credentials. This is an example of conditional branching or *skip logic*, which was previously described.

The reason for this use of skip logic is to get only one set of answers per school for items two, three, and four. This is because those items refer to school enrollment and location. For accuracy, it is important to avoid duplicating this information.

Section Three: Montessori Credentials

This section contained only one question, designed to determine the type of Montessori certification or certifications possessed by the respondent. It was a partially closed-end question with nine fixed-response answers. One of the fixed-response possibilities is “no Montessori credential.” There was also one response possibility, which allowed the respondent to specify a credential not on the list. The respondents could indicate multiple answers, because some of them may have had two or more Montessori credentials.

Section Four: Curriculum

The curriculum section had seven questions aimed at understanding curriculum management within the school. The section begins with some general information on curriculum organization offered to help respondents to understand possibilities and minimize misunderstanding.

The first question in this section, (question seven within the survey) asked how curriculum is managed within the school. This question is a closed-ended question. There were six possible fixed answers. Respondents could choose only one.

This was a screening question in that the answer activated skip logic. The first choice was, “Our school has a written Montessori-specific curriculum document, which we follow” (Appendix E). Those respondents who chose this first answer were directed electronically to continue answering answer questions 8-12 in the curriculum section. Those with other answers were electronically skipped to the question 13.

Questions 8-12, the items directed only to those with a school wide Montessori-specific curriculum, asked about the elements of the school’s written curriculum. Four of the questions were closed-ended; one was an open-ended question with a long response possibility.

Question 13 was directed to those respondents without a school-wide Montessori curriculum. It was an open-ended question, which asked how the school guarantees consistency without an accepted school curriculum plan. This question allowed respondents to write an extensive answer.

Section Five: Opinions and Reflections

There were eight questions in this section. Of these eight, five of the questions were closed-ended multiple choice. The remaining three questions were open-ended, allowing for written responses.

The five closed-ended questions in this section utilized forced-choice response scales, that is, scales with an even number of responses and no middle choice. With an even number of choices, a respondent is forced to decide whether he or she leaned more toward the agreement or disagreement, since a neutral choice is unavailable. There is not total agreement on this method (Fitzgibbons, 2003, ¶ 3-14; Fowler, 1995, pp. 65-66), although Alreck and Settle (1995) suggest that a scale with an odd number of choices may result in “fence riding or piling on the midpoint” (p. 141) even when there may be preferences among the respondents.

These closed-end questions were intended to reveal the feelings and opinions of the respondents regarding curriculum management. The open-ended questions were follow-ups to the closed-ended questions. These questions meant to dig deeper and try to uncover the thinking behind the feeling and opinions.

Section Six: Thank You

This page had a simple thank you statement from the researcher to the participants. There were no questions on this page.

Summary of All Sections

There were 21 total items on the survey instrument. Of these 21 items, five were of the sort that allow for extensive written responses. Two of the questions allow for short numerical responses. The remaining 13 items were of the multiple-choice variety.

Validity

The survey instrument has been reviewed and evaluated for validity. It may seem that validity simply means accuracy, or truth. In fact, the word “validity,” which comes from “valid,” etymologically means “strong” and hence effective (Ayto, 1993). This strength is what is generally thought to be truth.

The concept of validity as understood by researchers is much more complex. Depending on the writer, there are various form of validity, which measure, more or less accurately, different aspects of the “truth.”

Validity may be defined as the extent to which “any measuring instrument measures what it is intended to measure” (Carmines & Zeller, 1979). In that sense, validity is, in fact, a form of truth. If a statement, instrument, test, or research project is valid, then it is associated with truth. However, Carmines and Zeller (1979) point out that there is more than one way to understand truth and thus more than one form of validity.

There may be a question as to the validity of the survey instrument in this research. In order to develop a basis of validity, the instrument will be reviewed for face validity, content validity and will be pre-tested. Bryant (2004) comments on this process:

Is it valid to use an instrument that has not been validated? The answer is that it is not only permissible, it is common. The archives of dissertation

research are full of questionnaires not validated by rigorous processes. But, many of these questionnaires gather descriptive information about what exists. Demographic data and respondent opinions. . . . require no elaborate validation process. The typical process of a knowledgeable panel review a questionnaire along with a pilot study is usually sufficient in such studies. (Bryant, 2004, p. 103)

The first form of validity to be reviewed in the instrument is *face validity*. This is a simple review for clarity and directness. Face validity is assessed by a simple reading or review of the survey instrument or other measurement tool (Utwin, 1995). The survey must be free of jargon and any unique terms must be made clear. Utwin (1995) indicates that this review can be done by almost anyone. The person or persons need not be expert in the field that is under investigation. Because this seems somewhat haphazard at best, Utwin (1995) states that, “Many researchers do not consider face validity a measure of validity at all.”

A panel of three educated people who are neither Montessori teachers, nor otherwise Montessori qualified, did this face validity review. This makes certain that the average reader can understand the document. These persons are anonymous.

The survey was next reviewed for *content validity*. This is the second form of validity that is discussed by Carmines and Zeller (1979). This refers to the accuracy of the content of a survey or research design. Content validity measures how appropriate and correct the survey items seem to a set of reviewers who have knowledge of the subject matter. In a larger sense, to have content validity, the instrument must measure material that is important to the subject being assessed. The content will need to include all the key material, yet exclude irrelevant or trivial material.

The reviewers for content validity will consist of three experienced, credentialed Montessori elementary educators. These persons are anonymous. Any problems with the content will be corrected before the next validity test.

The final assessment of validity will be a pretest of the survey. Following Rea & Parker (1997) and Bradfield (2006), the participants in the pretest were asked to comment on question clarity, questionnaire comprehensiveness, and questionnaire acceptability.

To test the survey, it was administered to several Montessori teachers and to a Montessori school that was outside of the states of Minnesota or Wisconsin. The teachers taking the pilot study are anonymous. The school chosen for the pretest was located in Fargo, North Dakota.

No data was maintained from this pilot, it served only as a validation step for the survey. All pilot participants were encouraged to contact the researcher with comments, suggestions, and questions.

Procedures

Securing Institutional Permission

It is a requirement of Argosy University that the proposal document must be submitted to the campus Institutional Review Board (IRB) for certification (Argosy University, 2006). This submission is a requisite step in securing institutional permission to conduct the research.

The IRB reviews the document for the ethical treatment of human participants, and the maintenance of confidentiality of records, test scores, and other materials. The Chair of the IRB then signed a form that indicated the Board's evaluation of the project

(Argosy University, 2006). No research may begin until after receiving the letter of certification from Argosy University.

The document was submitted to the IRB on January 26, 2007. The IRB approved and certified the research on February 13, 2007. The certification is valid through February 13, 2008, (M. G. Barnes, Personal communication, February 13, 2007).

Contact with Participants

The principals or heads of all potential participant schools were contacted by United States mail sent during the week of March 5, 2007. This letter invited the participation of the principal and requested that the principal invite the Montessori teachers in the school to participate (Appendix D).

A follow up telephone call was placed to every principal during the week of March 12. In both of these contacts, the school principals were asked to participate, but additionally were informed that their participation was voluntary, and that they could choose not to. They were also informed that they could withdraw from the survey at any time, even after having begun. They were also told that they were selected to be part of this research project because they are Montessori school principals or heads in a Minnesota or Wisconsin public school.

It was anticipated that some potential participants might choose not to take part. Anyone who so indicated was not contacted again and was removed from the pool of participants

All potential participants still in the survey pool were sent a follow up email contact letter a few days after the telephone call. This contact letter (Appendix F)

contained the electronic link to the survey questionnaire. It also contained directions for electronically linking to the survey. As soon as this email was received, the participants could begin linking to the survey and responding.

During the week of March 19, a second email was sent to all principals in the pool (Appendix G). This email encouraged them and their teachers to respond to the survey. It acknowledged that due to the anonymous nature of the survey, it was unknown whether they had already responded. They were also given an additional copy of the link, if needed.

On March 25th, all participants were sent a final email letter (Appendix H). This email thanked them for their participation, and announced the date on which the survey link would be closed. This letter also emphasized the importance of their contributions to the research. After the closing of the link, no further responses to the questionnaire could be filed. This final letter reminded the participants that they could have access to the survey results if they liked and gave them contact information.

Survey Procedures

The survey was constructed using SurveyMonkey, a commercial online survey administration site (SurveyMonkey, 2006). It was self-administered via an electronic method. An electronic link to the survey was e-mailed to all school personnel who agreed to participate. The link was: <http://www.surveymonkey.com/s.asp?u=555913485774>.

To participate in the survey, an individual would simply mouse-click on the survey link and the questionnaire came up on their computer screen. The first page contained introductory material and directions. After reading the first page, respondents

who agreed to participate clicked on the word *next* at the bottom of the page. This took them into the body of the questionnaire. At the end of each page, they again clicked *next* to go to the following page. The final page was a *Thank You* statement. After reading that statement, the respondent clicked on the word *done* and the electronic survey closed.

Participants' individual responses were anonymous.

External validity was supported by extensive efforts to maximize the response rate to the survey. Each school was contacted at least three times to obtain the participation from the school heads or principals and the Montessori elementary teachers.

Access Plan

Once the research was certified, the researcher wrote by US mail to each of the school heads in the target schools, explaining the research plan and inviting their participation.

This letter was followed with a telephone call to address any questions. At this time, the researcher clarified access to the individual Montessori elementary teachers in each school. After the school heads approved and accepted the plan, the survey link itself, in electronic format was sent to each of them by email.

Timeline

The reviews for face validity and for content validity were conducted on the written questionnaire from January 25, 2007 through February 9, 2007. The final test for validity was the administration of the pretest. These were sent out during the week of

February 12, 2007. A follow up email was sent on February 19, 2007. The pretest was closed by February 27, 2007.

All potential participant schools in the actual survey were contacted by United States mail sent during the week of March 5, 2007. A follow up telephone call was placed to every principal during the week of March 12. This was for encouragement and to answer questions.

Potential participants still in the survey pool were sent a follow up email contact letter containing the survey link a few days after the telephone call. As soon as this email was received, the participants could begin linking to the survey and responding.

During the week of March 19, a second email was sent to all principals in the pool. This email encouraged them and their teachers to respond to the survey. On March 25th, all participants were sent a final email letter. At this time, data analysis began.

Analysis

Each item on the questionnaire was analyzed in at least one way. Certain questions were subjected to statistical testing techniques. For every question, the analysis began by reporting the number of respondents (*n*) to that particular question.

Question 1

Item one on the questionnaire asked, “What is your position in the school?” (Appendix E). There were five possible partially closed-ended responses to this question. The analysis of the responses reports raw numbers as well as percentages choosing each position option. A table summarizes data.

Question 1 is also factor analyzed, using analysis of variance models, to determine if the categories’ mean ratings for questions 14, 16, 18, and 19 are comparable.

This question is a screening question, which activated skip logic. Because of this, items two, three, four, and five would only be answered by respondents who report that their position in the school is a principal or school head. All respondents returned to item six.

Questions 2 & 3

Item two on the questionnaire asked, “Please indicate the number of Montessori elementary classrooms in your school” (Appendix E). Item three on the questionnaire asked, “What is your school enrollment at each level? Please write the number of students at each specified age level” (Appendix E). These are open-ended questions of the numeric type, so numbers will be entered as answers. The analysis of the responses reports raw numbers as well as percentages. Item two is analyzed in two ways, using two tables to summarize data. A single table summarizes the data for item three.

Question 4

Item four on the questionnaire asked, “Where is your school located?” (Appendix E). There were three possible closed-ended responses to this question. The analysis of the responses reports raw numbers as well as percentages choosing each position option. A table summarizes data. Question 4 is also factor analyzed, using analysis of variance models, to determine if the three categories’ mean ratings for questions 14, 16, 18, and 19 are comparable.

Question 5

Item five on the questionnaire asked, “Please indicate the type of school organization for your school” (Appendix E). There were five possible partially closed-ended responses to this question. The analysis of the responses reports raw numbers as well as percentages choosing each position option. The data from this question is analyzed in two ways. Two tables summarize this data. Item five is also factor analyzed, using analysis of variance models, to determine if the categories’ mean ratings for questions 14, 16, 18, and 19 are comparable.

Question 6

Item six on the questionnaire was open to all respondents. It asked, “Please indicate your Montessori credential(s), if held. You may check all that apply” (Appendix E). There were 10 possible partially closed-ended responses to this question. The analysis of the responses reports raw numbers as well as percentages choosing each position option. The data from this question is analyzed in two ways. Two tables summarize the data.

For this question, there is a comparison of the Montessori credentials held by principals to those credentials held by others. The analysis of the responses reports raw numbers as well as percentages in each group. A table summarizes the data.

Question 7

Item seven on the questionnaire was open to all respondents. It asks, “How is Montessori curriculum managed in your school's elementary level program? Please choose only one answer” (Appendix E). There were six possible closed-ended responses to this question. The analysis of the responses reports raw numbers as well as percentages choosing each position option. A table summarizes data. Item 7 is also factor analyzed, using analysis of variance models, to determine if the categories’ mean ratings for questions 14, 16, 18, and 19 are comparable.

Question seven is a part of the component of the research in which a comparison is between the existence of a written curriculum and the perception of value in the written curriculum. In particular, question 7 is paired with question 14. It is also paired with question 20.

This question was a screening question, which activated skip logic. Because of this, items 8-12 were only be answered by respondents who checked the box stating, “Our school has a written Montessori-specific curriculum document, which we follow” (Appendix E). All other respondents skipped electronically to item 13.

Question 8

Item eight on the questionnaire was directed only to those respondents who answered on question seven that their school has a written Montessori specific curriculum document. Question eight asked, “ If you answered that your school uses a written Montessori curriculum document, then please indicate what elements are present in the written curriculum. Check all that apply” (Appendix E). There were seven possible partially closed-ended responses to this question. The analysis of the responses reports raw numbers as well as percentages choosing each option. A table summarizes the data.

Question 9

Item nine on the questionnaire was directed only to those respondents who answered on question seven that their school had a written Montessori specific curriculum document. Question nine asked, “Some Montessori schools have clearly defined age or grade level expectations for presenting lessons. In your curriculum document is there an expectation that certain lessons will be presented to specific age groups?” (Appendix E). There were three possible closed-ended responses to this question. The analysis of the responses reports raw numbers as well as percentages choosing each option. Item nine is also factor analyzed, using analysis of variance models, to determine if the categories’ mean ratings for questions 14, 16, 18, and 19 are comparable.

Question 10

Item 10 on the questionnaire was directed only to those respondents who answered on question seven that their school had a written Montessori specific curriculum document. Item 10 on the questionnaire asked, “If there are grade level expectations, please describe how they are used” (Appendix E). This is an open-ended question, to which respondents could reply with a written reaction.

The responses were qualitative and text-based. Following Trochim, (2006) and Zelna (2006), the responses were coded and sorted into simple categories. Each category was given a short label that represents the response’s basic theme. Some responses were coded in more than one way. The coded responses are then presented in a table form, as a thematic analysis.

Question 11 & 12

Items 11 and 12 on the questionnaire were directed only to those respondents who answered on question seven that their school had a written Montessori specific curriculum document. Question 11 asks, “If your school uses a written Montessori curriculum document, please indicate what age or grade level(s) are included. Check all boxes that apply” (Appendix E). There were six possible closed-ended responses to this question.

Question 12 asked, “If your school uses a written Montessori-specific curriculum document, please indicate what subject area(s) are included. Please check all boxes that

apply” (Appendix E). The analysis of the responses to both of these questions reports raw numbers as well as percentages choosing each option.

Question 13

Item 13 on the questionnaire was directed only to those respondents who did not answer on question seven that their school had a written Montessori specific curriculum document. Question 13 asks, “If your school does not follow a written Montessori curriculum document, how does your school guarantee consistency in all classes at a given level” (Appendix E). The responses were text based and qualitative in this open-ended question. As with question 10, the responses were coded and sorted into simple categories. Each category was given a short label that represents the response’s theme. The coded responses are presented as a thematic analysis.

Question 14

Item 14 was open to all respondents. It asked, “How important is it for a Montessori school to have a written Montessori-specific curriculum document?” (Appendix E). There were four rank-ordered closed-ended responses to this question. In the analysis, these were each be given a numerical value. The response *very important* was given the value of 4. The response *somewhat important* was given the value of 3. The response *somewhat unimportant* was given the value of 2. The response *very unimportant* was given the value of 1.

The analysis of the responses reports raw numbers as well as percentages choosing each option. This item is also analyzed for mean, median, mode, and standard deviation.

Question 15

Item 15 on the questionnaire was open to all participants. It was a follow-up question to item 14. It asked, "Please explain your answer to question 14. Why do you believe as you do?" (Appendix E). The responses were text based and qualitative in this open-ended question. As with questions 10 and 13, the responses were coded and sorted into simple categories. Each category was given a short label that represents the response's theme. The coded responses are presented as a thematic analysis.

Question 16

Item 16 is open to all respondents. It asked, "How important is it that all classrooms at a given level offer children the same lessons?" (Appendix E). There were four rank-ordered closed-ended responses to this question. In the analysis, these were given a numerical value, using the same method as in item 14.

The analysis of the responses reports raw numbers as well as percentages choosing each option. This item is also analyzed for mean, median, mode, and standard deviation.

Question 17

Item 17 on the questionnaire was open to all participants. It was a follow-up question to item 16. It asked, “Please explain your answer to question 16. Why do you believe as you do?” (Appendix E). The responses were text based and qualitative in this open-ended question. As with earlier open-ended questions, the responses were coded and sorted into simple categories, and presented as a thematic analysis.

Questions 18, 19, & 20

Item 18, 19, and 20 were open to all respondents. Question 18 asked, “Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level” (Appendix E). Question 19 asked, “What value would a written curriculum document have in the evaluation of students?” (Appendix E). Question 20 asks, “Would a written Montessori-specific curriculum document support Montessori education in your school?” (Appendix E).

There are four rank-ordered closed-ended responses to each of these questions. In the analysis, these were each given a numerical value, using the same method as in item 14.

The analyses of the responses reports raw numbers as well as percentages choosing each option. Each of these items is also analyzed for mean, median, mode, and standard deviation. Item 20 is also be factor analyzed, using analysis of variance models, determining if the categories’ mean ratings for questions 14, 16, 18, and 19 are comparable.

Question 21

Item 21 was open to all participants. It was a follow-up question to item 20. It asks, “Please explain your answer to question 20. Why do you believe as you do?” (Appendix E). The responses were text based and qualitative in this open-ended question. As with earlier open-ended questions, the responses were coded and sorted into simple categories, and then presented as a thematic analysis.

Comparisons

This section addresses the component of the research in which a comparison was made between the existence of a written curriculum and the perception of value in the written curriculum. The purpose of this component was to examine the consistency of the respondents when two beliefs are compared, or when a practice was contrasted with a belief.

Principals and teachers.

This comparison contrasted the responses of principals to those of the teachers for questions 14, 16, 18, and 19. The analysis of the responses using ANOVA, reports raw numbers, percentages, and significance in each group.

School Location.

This comparison contrasted the responses of participants from the Twin Cities metro area, greater Minnesota and Wisconsin for questions 14, 16, 18, and 19. The

analysis of the responses using ANOVA, reports raw numbers, percentages, and significance in each group.

Comparisons of Practice with Belief

Other items are compared or contrasted, even if they do not both have numerical values. For these comparisons, the responses to item 7 were compared to the responses to items 14, 16, 18, and 19.

The analysis of the responses using ANOVA determines whether those who use a written curriculum document believe that it is important for schools to use them. It also examines whether those who do not use a written curriculum document believe that it is important for schools to use them.

Analysis of the Research Questions

There are three research questions. These are as follows,

1. What form of curriculum documentation and management provides guidance for public Montessori schools in Minnesota and Wisconsin?

This first question will be answered by examining the responses to questions 7 through 13. These questions directly focus on the curriculum management systems in the schools involved in the survey.

2. Are the beliefs and feelings of Montessori teachers and administrators in Wisconsin and Minnesota congruent with their practice with respect to curriculum?

This question was answered in more than one way. The first step was to examine the answers to questions 14-21. These items address the beliefs and opinions of the respondents. The second step was to examine the comparisons of practice with belief.

3. Are there differences in the approach to Montessori school curriculum documentation and management attributable to position, location, or school type?

For this question, attitudes regarding curricula were compared. The research compared Montessori school heads and teachers; Minnesota and Wisconsin locations; and school type.

Summary

The decisions that Montessori schools make about curriculum may be carefully planned and documented, or they may simply happen by default. This study investigates the management of Montessori curriculum and the attitudes about curriculum management held by Minnesota and Wisconsin public Montessori school leaders and teachers.

The study utilized an electronic survey approach. The survey was organized through SurveyMonkey and distributed to participants through an email link. This method made the survey more convenient and speedy.

Participants in this study were school leaders and teachers in the public Montessori schools in Minnesota and Wisconsin. They were contacted both by U.S. mail and by email.

The survey questionnaire was divided into six sections, of which four made up the body of the instrument. It contained a cover letter, 21 question items, and a thank you page. The question items were made up of 14 closed-ended questions and 7 open-ended questions. Two of the open-ended questions were of the short numerical answer type; the other five allowed longer answers.

In the analysis section, the responses to each question have been analyzed. The responses to the open-ended questions were coded and classified according to themes that emerge. Comparisons of responses in different questions also were done.

The plan for this study was submitted to the IRB of Argosy University/Twin Cities on January 26, 2006. It was certified by the IRB on February 13, 2006.

Conclusion

This chapter focused upon the methodology of the study. It considered the research questions, the survey instrument, the participants, and the plan for analysis. The next chapter will take up the question of the results. It will examine the results from each question and how they apply to the research questions. It will also discuss the findings in terms of the research questions.

CHAPTER FOUR: RESULTS

This descriptive study examined the management of Montessori curriculum in Minnesota and Wisconsin public Montessori elementary schools. In particular, the study considered the uses of curriculum documentation, such as written curriculum documents. It also reviewed and described feelings and attitudes held by Montessori elementary school personnel toward written overt curriculum documentation.

The results of this study describe the curriculum documentation practices of the target schools in several ways. An initial element is basic demographic knowledge. This information was gathered from the first five questions on the survey instrument. The demographic items ask for the respondent's position in the school, the school size at the elementary level, the school enrollment by level, the general geographic location of the school, and the type of school organization.

The study also gathered information about the Montessori credentials of the respondent. This information also yielded data, which compares the credentials of the Montessori principals to the Montessori teachers.

Seven questions in the curriculum section of the questionnaire were aimed at understanding curriculum management within the school. These questions yielded data on what management systems are in place and how schools without documented curriculum management systems guarantee a consistent curriculum offering.

The opinions and reflections portion of the questionnaire have generated data on the feelings and attitudes of Montessori school personnel with respect to organized curriculum documents. This section also uses comparison to describe the relationship between feelings and actions of Montessori school personnel.

Anonymity

This survey was completely anonymous. This anonymity was protected by the SurveyMonkey software. This means that not only is the identity of each participant completely protected, there is also no way to retrieve the names of the schools from which the participants responded, nor would it be ethical.

There were 77 responses to the survey from the 24 schools which were in the response pool. Although there is general demographic information included, there are no further identifying features on the respondents.

The Pretest or Pilot

The pretest was administered to a number of Montessori teachers not in public schools, Montessori interns, Montessori teacher educators, and one entire Montessori School. All responses to this pretest survey were anonymous. Results were received from 22 participants.

Specific results of the pretest will not be reported since the purpose of the pretest was to test and complete validation of the survey instrument rather than gather data about Montessori curriculum practices. Several suggestions were received from participants in the pretest, which resulted in improving the questionnaire. These included grammatical corrections, shortening the timing, editing the cover letter, and editing certain items. A problem with the electronic settings through SurveyMonkey was also discovered. This did not allow multiple respondents to use the same computer. SurveyMonkey corrected this problem within a matter of hours.

Response Rate

The population of interest for this study was made up of representatives of the public Montessori schools in Minnesota and Wisconsin that include an elementary program. There are presently 29 of these of these schools in Minnesota and Wisconsin, of which 14 are in Minnesota and 15 in Wisconsin. Every one of these schools was contacted with a letter inviting their participation in the study. All of the schools that were contacted are listed in Appendix B.

The principals had been informed by the researcher that they could withdraw at any time, and certain schools chose to do so. In Minnesota, two schools explicitly declined participation. In Wisconsin, three schools declined to participate. Each of these schools was contacted a second time, but they maintained their position. As a result, the pool of schools participating in the study was 24 schools.

Responses were received from 20 individuals who identified themselves as principals. This represents a school response rate of 83.3% of those schools participating.

Of those who responded as principals, 11 identified themselves as from Minnesota, for a 91.7% response rate from the 12 participating schools. Eight responding principals identified themselves as from Wisconsin. This leads to a response rate of 66.7% from the 12 participating Wisconsin schools.

Qualitative or Open Ended Questions

Five of the survey items were open ended and resulted in responses that were qualitative and text-based. These items are questions 10, 13, 15, 17, and 21.

Following Trochim, (2006) and Zelna (2006), the responses to these items were read and sorted into simple categories. Each category was given a short label or initial code that represented the response's basic theme. Some responses were coded in more than one way.

The responses were then examined by a group of three Montessori teacher educators and one Montessori administrator. The group was chaired by the researcher. After study of the responses and the initial coding, this group performed a close analysis of every response item and assigned to each of them one or more final codes indicating the theme or themes present in that response. The coded responses were then categorized in tabular form. These are presented under each question in this chapter, as a thematic analysis.

Results and Findings

This section presents the data and results, which were gathered by the survey. Every item on the questionnaire is presented with its results. These are presented section by section. Following these sections, the data are presented that resulted from certain comparisons. Finally, the data are compared to the research questions, which are then evaluated with consideration to the results.

The results of each item on the questionnaire have been analyzed in at least one way. Certain questions have been subjected to statistical testing techniques. For every question, the analysis includes reporting the number of respondents (n) to that particular question.

Demographic Information

Question 1

Item one on the questionnaire asked, “What is your position in the school?” (Appendix E). There were five possible partially closed-ended responses to this question.

The participants in the survey were representatives of Montessori public and charter public and charter schools that include an elementary program and are located in Minnesota or Wisconsin. The survey included 77 responses. Twenty responses were from principals or heads, 52 were from teachers, 1 was from a Montessori coordinator or curriculum director and 4 from persons reporting other positions within the school.

For demographic purposes, the participants are identified below by their positions within the school. Table 1 represents the data that respondents reported as to their positions in the Montessori schools.

Table 1

Respondent's Position in the School

Position	Frequency	Percent
Principal or school head	20	26.0%
Montessori coordinator or curriculum director	1	1.3%
Lower elementary Montessori teacher	32	41.6%
Upper elementary Montessori teacher	20	26.0%
Other	4	5.2%
Totals	77	100%

Item 1 was a screening question, which activated skip logic. Because of this, items two, three, four, and five were only answered by respondents who reported their position in the school as a principal or school head.

Question 2

Item two on the questionnaire asked, "Please indicate the number of Montessori elementary classrooms in your school" (Appendix E). This question, directed only at the principals, was an open-ended question of the numeric type, so numbers were entered as answers. Respondents could enter their numbers under several headings. These were Lower elementary (6-9), Upper elementary (9-12), Full elementary (6-12), K-1, 2-3, 4-5, and 6. In Montessori schools, classrooms are generally organized in mixed age configurations. The elementary classes usually consist of at least a two-year age mix.

The term *lower elementary* refers to a 3-year class consisting of the mixed grades one, two, and three, or age levels 6-9. The term *upper elementary* refers to a 3-year class

consisting of the mixed grades four, five, and six, or age levels 9-12. The term *full elementary* means a 6-year class, which includes all of the grades one through six, or age levels 6-12. *K-1* means a 2-year Montessori class consisting of the mixed grades Kindergarten and grade 1. The term *2-3* means a 2-year Montessori class consisting of the mixed grades two and three. In the same way, *4-5* means a 2-year Montessori class consisting of the mixed grades four and five. Some Montessori schools have a single grade six; the number 6 refers to this configuration. There was also an opportunity for respondents to enter other grade configurations.

The survey collected data from principals on how many schools had each of these levels. The results only show how many of the schools have these various configurations, not how many classes there were at each level.

Although the number of respondents to this question was 19, the total number of individual responses was 56, reflecting the fact that many schools have multiple grade configurations. These data are shown in Table 2.

The data demonstrate that the most dominant elementary classroom configuration is the lower elementary, with 78.9% of the respondent schools offering this configuration. Upper elementary is the second most common configuration, being offered by 57.9% of the respondent schools.

Table 2

Number of Respondents with Various Elementary Configurations

Classroom Configuration	Frequency	Percent
Lower elementary (6-9)	15	78.9%
Upper elementary (9-12)	11	57.9%
Full elementary (6-12)	4	21.1%
K-1	6	31.6%
2-3	5	26.3%
4-5	5	26.3%
6	3	15.8%
Other	7	36.8%
Total	56	-

Results from this question also yielded data as to how many total classrooms there were in all of the participating schools. This information is broken out by level. Table 3 shows that there were 120 elementary classrooms in the participating schools reported by 19 principals.

The *Other* category represents an assortment of classrooms with exact numbers not available. Seven respondents reported having other classifications of classrooms, but numbers are not available for most of these. For this reason, the *Other* category is not represented in Table 3 or Figure 3.

The most widely distributed elementary classroom in the participating schools is the lower elementary or 6-9 year room. This configuration accounts for 40.8% of all

classrooms. The next most common is the upper elementary class with 20.8% of all reported classrooms.

Table 3

Total Number of Elementary Classrooms

Classroom Configuration	Frequency	Percent
Lower elementary (6-9)	49	40.8%
Upper elementary (9-12)	25	20.8%
Full elementary (6-12)	12	10.0%
K-1	19	15.8%
2-3	8	6.7%
4-5	5	4.2%
6	2	1.7%
Total	120	100.0%

Question 3

Item three on the questionnaire asked, “What is your school enrollment at each level? Please write the number of students at each specified age level” (Appendix E).

This was an open-ended question of the numeric type, so numbers were entered as answers.

The results demonstrate that the most commonly encountered age level in Minnesota and Wisconsin public Montessori schools is the 6-9 year old, represented by 46.4% of the enrolled children. The age level with the second most enrolled children is the 3-6 year olds with 22.1% of the enrolled children. The data are seen in Table 4.

Table 4

School Enrollment at Each Age Level.

Age level	Response total	Percentage
Below age 3	5	0.1%
Age 3-6	1057	22.1%
Age 6-9	2223	46.4%
Age 9-12	1041	21.7%
Over Age 12	469	9.8%
Total ^a	4790	100.1%

^aThe sum of the percentages appear slightly high due to the effect of rounding.

Question 4

Item four on the questionnaire asked, “Where is your school located?” (Appendix E). There are three possible closed-ended responses to this question. In order, these are, the seven county Metro area in Minnesota, greater Minnesota, and Wisconsin.

There were 19 respondents to this question ($n=19$) all principals. The results, shown in Table 5, indicate that 11 of the respondents represent Minnesota schools, for a total of 57.9%. Table 5 breaks this down further.

Table 5

Location of Respondent's Schools.

Age level	Response total	Percentage
Seven county Metro area in Minnesota	4	21.1%
Greater Minnesota	7	36.8%
Wisconsin	8	42.1%
Total	19	100.0%

Question 5

Item five on the questionnaire asked, “Please indicate the type of school organization for your school.” Respondents ($n=19$) could choose either regular public schools or public charter schools and subcategorize them as to whether they are stand-alone schools or occupy space within other school buildings. In Table 6, it can be seen that the most prevalent school organization is the charter school occupying an entire school building.

It can also be noted from both Table 5 and Table 6 that a comparison can be made as to the number of schools in whole buildings compared with those in shared facilities. Thirteen of the 19 responding schools were located in whole buildings, representing 68.4%. Five schools share their facilities with other entities, for 26.3%. The remaining one school in the other group did not specify its location. The *Other* category, including one school, represents a contract school, which is a school operating as a public school under a contract to the regular school district.

Table 6.

School Organization

School Organization	Response total	Percentage
Regular public school, whole building	5	26.3%
Regular public school, partly Montessori (school within a school)	4	21.1%
Public charter school, whole building	8	42.1%
Public charter school, located within a larger school	1	5.3%
Other	1	5.3%
Total ^a	19	100.1%

^a The sum of the percentages is slightly high due to the effect of rounding.

Table 7 combines these results differently, summarizing all regular public schools compared with all charter schools. The respondents representing regular public schools are equal in numbers with those representing the charter schools.

Table 7

Type of School Organization

School Organization	Response total	Percentage
Regular public school	9	47.4%
Public charter school	9	47.4%
Other	1	5.3%
Total ^a	19	100.1%

^a The sum of the percentages is slightly high due to the effect of rounding.

Summary of Demographic Information

The survey included 77 responses. Twenty responses were from principals or heads, 52 were from teachers, 1 was from a Montessori coordinator or curriculum director and 4 from persons reporting other positions within the school.

The results of this study present a picture of the public Montessori schools in Minnesota and Wisconsin. About half of them are regular public schools and about half are public charter schools. Nearly 60% of the responding schools are located in Minnesota, with slightly more than 40% in Wisconsin.

The lower elementary level is the most common class configuration in the responding schools although a variety of configurations was reported. The schools serve more 6-9 year old children than any other group, although they also serve significant numbers of 3-6 year olds and 9-12 year olds.

Montessori Credentials

Question 6

Item six on the questionnaire was open to all respondents. It asked, "Please indicate your Montessori credential(s), if held. You may check all that apply" (Appendix E). There were 10 possible partially closed-ended responses offered to this question, indicating a variety of Montessori credentialing. Respondents were able to select multiple options, since many Montessori teachers and leaders have more than one credential.

There were 75 respondents to this question ($n=75$) possessing 105 Montessori credentials. The results of the responses to this item are indicated in Table 8. The

credential possessed by the most respondents is the American Montessori Society (AMS) Elementary I credential. This is for teaching the lower elementary grades or ages 6-9.

It is notable that 17 respondents indicated no Montessori credential at all. This means that the 88 total Montessori credentials were possessed by only 58 persons. This makes an average of 1.5 credentials per certified Montessorian.

Table 8.

Montessori Credentials

Credential		Response total	Percentage
AMS Early Childhood	(Ages 2.5-6)	15	20.0%
AMI Primary	(Ages 3-6)	6	8.0%
Other Early Childhood or Primary	(Ages 2.5-6)	2	2.7%
AMS Elementary I	(Ages 6-9)	20	26.7%
AMS Elementary I-II	(Ages 6-12)	19	25.3%
AMI Elementary	(Ages 6-12)	10	13.3%
Other Elementary		5	6.7%
Administrators		3	4.0%
No Montessori credential		17	22.7%
Other Montessori Credential(s)		8	10.7%
Total		105	-

In the group reporting *Other Montessori Credentials*, shown in Table 8, were reported eight additional credentials. These include: two additional AMS credentials, one credential from the St. Nicholas training organization, two from the North American

Montessori Center, one with no certifying organization referenced, and two which were not clear as to the form of credential.

An alternate way of understanding the results is to group the respondents by the source of their Montessori credentials. The AMS credentials represent the Early Childhood, Elementary I, Elementary I-II and the Administrators credential, which is included in this group because it is only issued by AMS. The Association Montessori Internationale (AMI) credentials include the Primary and the Elementary. The *Other* group includes all other credentials reported at any level.

Table 9 shows this distribution of credentials by issuing agency. This demonstrates that over half of the credentials were issued by AMS, with the second largest group having no Montessori credentials. The percentages in Table 9 were calculated using the total number of credentials or non-credentials ($n = 105$) rather than the number of respondents.

Table 9.

Montessori Credentials by Issuing Agency.

Issuing Agency	Response total	Percentage
All AMS Credentials	57	54.3%
All AMI Credentials	16	15.2%
Other Credentials	15	14.3%
No Montessori credential	17	16.2%
Total	105	100.00%

The information from this item also indicates the Montessori credentials of the different subgroups of respondents. By disaggregating the data, the responses from the principals can be compared to all other Montessori personnel among the respondents. There were 20 principals among the survey respondents. Nineteen of them responded to item 6 ($n=19$). Among these 19, nine had no Montessori credentials, as is shown in Table 10, which compares their credentials with those of the other Montessorians in the survey. Among those that did report Montessori credentials, two have Administrator credentials, four have AMI teaching credentials, three have AMS teaching credentials, and one has a Montessori teaching credential from another agency.

Table 10.

Montessori Credentials by School Position

Credential Status	Principals or School Heads		Other School Personnel	
	Frequency	Percentage	Frequency	Percentage
Montessori Credentialed	10	52.6%	48	85.7%
No Montessori Credential	9	47.4%	8	14.3%
Total	19	100.0%	56	100.0%

*Curriculum Management**Question 7*

Item seven on the questionnaire was open to all respondents. It asked, “How is Montessori curriculum managed in your school's elementary level program? Please choose only one answer” (Appendix E). There were some explanations provided for the respondents, which preceded the question item. They were as follows,

Please let us know how Montessori elementary curriculum is organized in your school. In some schools, there may be a school-wide written Montessori curriculum, which drives instruction. In other Montessori schools, teachers are expected to follow their albums in terms of sequence and organization. A third model is that some Montessori teachers follow the expressed interests or wishes of children rather than any prescribed sequence. A fourth possibility is that teachers are expected to follow a state or district curriculum, which is not a Montessori document. In some cases, the school policy is to follow the district curriculum but modify it with Montessori lessons. Some schools may have no accepted curriculum management plan; teachers may do as they choose. (Appendix E)

After this explanation, the actual survey item appeared. There were six possible closed-ended responses to this question as follows (Appendix E),

1. Our school has a written Montessori-specific curriculum document, which we follow.
2. Teachers may follow their Montessori albums independently.
3. Teachers may follow the interests of children.
4. There is a district (non-Montessori) curriculum, which we follow.
5. We follow the district (non-Montessori) curriculum, but modify it with Montessori lessons.
6. We do not have an accepted system of curriculum management.

Responses were posted from 76 respondents ($n=76$). The results showed that the largest group, 34 of them, indicated that teachers may follow their Montessori albums independently. The second largest group consisted of 15

respondents who indicated that they follow the district (non-Montessori) curriculum, but modify it with Montessori lessons. The results for this item are shown in Table 11.

Table 11.

How Curriculum is Managed

Issuing Agency	Frequency	Percentage
Our school has a written Montessori-specific curriculum document, which we follow.	10	13.2%
Teachers may follow their Montessori albums independently.	34	44.7%
Teachers may follow the interests of children.	14	18.4%
There is a district (non-Montessori) curriculum, which we follow.	0	0.0%
We follow the district (non-Montessori) curriculum, but modify it with Montessori lessons.	15	19.7%
We do not have an accepted system of curriculum management.	3	3.9%
Total ^a	76	99.9%

^aThe sum of the percents appears slightly low, due to the effect of rounding.

Item seven is a screening question, which activated skip logic. Because of this, items 8-12 were only answered by respondents who checked the box stating, “Our school has a written Montessori-specific curriculum document, which we follow” (Appendix E). All other respondents skipped electronically to item 13.

Question 8

Item eight on the questionnaire was directed only to those respondents who answered on question seven that their school has a written Montessori specific curriculum document. Question eight asked, “If you answered that your school uses a written Montessori curriculum document, then please indicate what elements are present in the written curriculum. Check all that apply” (Appendix E).

The purpose of this question was to ascertain what parts of a curriculum are included in the documentation of those schools that do utilize a written or overt curriculum document. There were seven possible partially closed-ended responses to this question. The choices were content, scope, sequence, aims or outcomes, materials, philosophy statements, and other (please specify).

Responses to this question were received from nine respondents ($n=9$). The results, summarized in Table 12, showed that every school using curriculum documentation included content in their written document. Sequence was next most common with seven respondents or 77.8% indicating that it is a part of their curriculum document. One respondent chose *Other* and indicated that the Montessori curriculum had been aligned with the district standards.

Table 12.

Elements Present in the Written Curriculum

Curriculum Element	Frequency	Percentage
Content	9	100.0%
Scope	6	66.7%
Sequence	7	77.8%
Aims or outcomes	5	55.6%
Materials	4	44.4%
Philosophy statements	3	33.3%
Other	1	11.1%

Question 9

Item nine on the questionnaire was directed only to those respondents who indicated that their school had a written Montessori specific curriculum document. Question nine asked, “Some Montessori schools have clearly defined age or grade level expectations for presenting lessons. In your curriculum document is there an expectation that certain lessons will be presented to specific age groups?” (Appendix E). There were three possible closed-ended responses to this question.

The first choice read, “Yes, there are expectations for each year” (Appendix E). This means that the age level expectations were for each individual grade, such as expectations for first grade. Many Montessori schools do not classify children by grade, instead calling them simply lower elementary or upper elementary. For this reason, the second choice read, “There are age expectations but only for lower elementary or upper

elementary, not for each year” (Appendix E). This would indicate that the expectations were for the completion of an entire three-year level. The third choice stated, “No, there are no age or grade expectations” (Appendix E).

There were 10 respondents to this question ($n=10$). Every one of them (100%) does have an expectation that certain lessons will be presented to specific age groups and this expectation is in their curriculum documentation. Six respondents (60%) indicated that in their schools, there are expectations for each year. Four respondents (40%) indicated that the age expectations in their schools are only for lower elementary or upper elementary, not for each year.

Question 10

Item 10 on the questionnaire was directed only to those respondents who answered on question seven that their school had a written Montessori specific curriculum document. Item 10 asked, “If there are grade level expectations, please describe how they are used” (Appendix E). This was an open-ended question, to which respondents replied with a written reaction. The responses were coded and sorted into simple categories. In this case, it was determined that all responses fell into four thematic categories. Each of the four categories was given a short label that represents the theme of the response.

The four themes responding to the prompt are as follows:

Theme A: Benchmarks. This theme includes those respondents who indicated that their school uses grade level expectations to set *benchmarks*. The term *benchmark* means

a statement that provides a picture of student knowledge expected at specific grades, ages, or levels. (NCREL, 2002).

Theme B: Meeting standards or requirements. These respondents use set grade expectations to meet requirements from a higher authority such as district requirements or state standards.

Theme C: Students may exceed requirements. These respondents emphasized that grade level expectations are only minimums, students may go beyond.

Theme D: Yearly or monthly plan. These respondents set their requirements in terms of a calendar plan.

There were six respondents to this question, who mentioned the four themes nine times as seen in Table 13. The most frequently cited theme, at 33.3%, was that even with grade level expectations, students may exceed any set requirements.

Table 13

Thematic Analysis of How Grade Level Expectations are Used

Themes	Totals	Percentage
Theme A: Benchmarks	2	22.2%
Theme B: Meeting standards/requirements	2	22.2%
Theme C: Students may exceed requirements	3	33.3%
Theme D: A yearly or monthly plan	2	22.2%

Question 11

Item 11 on the questionnaire was directed only to those respondents who answered on question seven that their school had a written Montessori specific curriculum document. Question 11 asked, “If your school uses a written Montessori curriculum document, please indicate what age or grade level(s) are included. Check all boxes that apply” (Appendix E). There were six possible partially closed-ended responses to this question, representing grades one through six.

Responses to this question were received from 10 respondents ($n=10$). The results, summarized in Table 14, showed that every school using curriculum documentation included lower elementary or grades one through three in their written document. Fewer respondents had developed curriculum documentation for the upper grades.

Table 14

Age or Grade Levels Included in the Written Curriculum

Age or Grade Level	Frequency	Percentage
First Year (Grade 1)	10	100%
Second Year (Grade 2)	10	100%
Third Year (Grade 3)	10	100%
Fourth Year (Grade 4)	6	60%
Fifth Year (Grade 5)	6	60%
Sixth Year (Grade 6)	2	20%

Question 12

Item 12 was directed only to those respondents who had indicated that their school had a written Montessori specific curriculum document. Question 12 asked, “If your school uses a written Montessori-specific curriculum document, please indicate what subject area(s) are included. Please check all boxes that apply” (Appendix E).

As has been previously discussed, Montessori elementary traditionally offers six core subjects. These first were identified by Montessori in 1919 (A correspondent, 1919). They were later identified by Mr. Montessori (1957), Montessori teacher education students (Bergamo class of 1973-74, (1976), Wickramaratne (1964), and others. The six subjects are arithmetic (mathematics), biology/science, geography, geometry, history, and language (reading, grammar, language arts).

This question lists these six major subjects as options. It also offers the choices of art, music, and physical education. There was also an option for *other*.

The purpose of the question was to determine if written curriculum documents cover all subjects. If not, it could determine which subjects do have a documented curriculum.

Ten respondents answered this question ($n=10$). The results, summarized in Table 15, showed that every school among those using curriculum documentation included arithmetic (mathematics), biology and science, geography, and language (reading, grammar, and language arts) in their written document(s). Fewer respondents had developed curriculum documentation for geometry and history.

Only some of the respondents had developed curriculum documentation for art, music, and physical education. Two respondents selected the *Other* category. One of them had developed curriculum documentation for drama, and the other in culture.

Table 15

Subjects Included in the Written Curriculum

Subject	Frequency	Percentage
Arithmetic (Math)	10	100%
Biology and Science	10	100%
Geography	10	100%
Geometry	9	90%
History	9	90%
Reading-Literature-Grammar	10	100%
Art	3	30%
Music	3	30%
Physical Education	2	20%
Other	2	20%
Totals	-	20%

Question 13

Item 13 on the questionnaire was directed only to those respondents who indicated that their school did not have a written Montessori specific curriculum document. Question 13 asks, “If your school does not follow a written Montessori curriculum document, how does your school guarantee consistency in all classes at a

given level?" (Appendix E). The responses were text based and qualitative in this open-ended question.

The responses were coded and sorted into simple categories. In this case, it was determined that all responses fell into nine thematic categories. Each of the nine categories was given a short label that represents the theme of the response.

The nine themes responding to the prompt are as follows:

Theme A: Does not happen. These respondents were indicating that there was no consistency (or horizontal articulation) in their schools, that efforts to be more consistent have not worked, or that horizontal articulation is not a goal in their school.

Theme B: District or state standards. These respondents indicated that consistency in each level was guaranteed by following directives from a higher authority such as district guidelines or state standards.

Theme C: Staff discussion. These respondents indicated that they maintain consistency by discussion within the staff, staff meetings, staff planning, or meeting with the principal.

Theme D: Albums. These respondents explain that they maintain consistency by following their Montessori albums.

Theme E: Creates issues and dissension. These respondents expressed concern that efforts to become consistent have caused dissension or raised interpersonal issues within the school.

Theme F: In Progress. These respondents reported that a plan for a consistent curriculum plan is underway.

Theme G: Follow the Child. These respondents suggested that they follow each child's interests and their perception of each child's learning level.

Theme H: Testing. These respondents use the results of testing to offer a consistent response within the curriculum.

Theme I: Other means. These respondents had means of approaching consistency unique to themselves.

Non-Responsive: This respondent did not direct an answer to the question.

There were 48 respondents to this question who mentioned the nine themes 75 times as well as the one respondent who did not respond to the question. These results are seen in Table 16. The most frequently cited theme, at 31.6%, was that without a written curriculum plan, their schools were not guaranteeing consistency.

Table 16

Thematic Analysis of How Schools without a Written Montessori Curriculum Document, Guarantee Consistency.

Themes	Totals	Percentage	Top Ranks
Theme A: Does not happen	24	31.6%	1
Theme B: District or state standards	13	17.1%	3
Theme C: Staff discussion	15	19.7%	2
Theme D: Albums	5	6.6%	
Theme E: Creates issues and dissention	3	3.9%	
Theme F: In Progress	4	5.3%	
Theme G: Follow the Child	6	7.9%	
Theme H: Testing	3	3.9%	
Theme I: Other means	2	2.6%	
Non-Responsive	1	1.4%	
Totals	76	100.0%	

Summary of Curriculum Section

The curriculum section of the survey revealed that only 13.2% of the respondents work in a school with a written Montessori-specific curriculum document, leaving a group of 86.8% in schools which do not use written Montessori-specific curriculum documentation. Within this large group, 82.9% have other curriculum management plans, with 3.9% reporting that they have no curriculum management plan.

Those who do report having a written Montessori-specific curriculum document all offered curriculum documentation at the lower elementary level with a fall-off into the upper elementary grades. They also all offered a written curriculum document for arithmetic (mathematics), biology-science, geography, and language (reading, grammar, and language arts). Fewer of them had developed curriculum documentation for geometry and history, and fewer still for other subjects.

Every respondent reporting a written Montessori-specific curriculum document used some form of grade level expectations, either year-by-year or level-by-level. The most common observation about these expectations was that they allow children to go beyond requirements. This means that the expectations are only a baseline minimum, which children may exceed.

Those respondents without a written Montessori-specific curriculum document were asked how they guarantee consistency within each level. On this open ended item, the most common theme of the responses was that these schools do not or cannot make such a promise. Some also do not believe in making such a promise. Of those that do try to make such a guarantee, the most common approach is through staff discussion and planning.

Reflections and Opinions

Question 14

Item 14 was open to all respondents. It asked, “How important is it for a Montessori school to have a written Montessori-specific curriculum document?”

(Appendix E). There were four rank-ordered closed-ended responses to this question. In

the analysis, these were each given a numerical value. The response *very important* was given the value of 4. The response *somewhat important* was given the value of 3. The response *somewhat unimportant* was given the value of 2. The response *very unimportant* was given the value of 1.

Seventy-one respondents answered this question ($n=71$). The results, summarized in Table 17, showed that the overwhelming majority of the respondents (71%) believed that it was very important for a Montessori school to have a written Montessori-specific curriculum document. Descriptive statistics for this item are shown in Table 18.

Table 17.

How important is it for a Montessori school to have a written Montessori-specific curriculum document?

Response	Frequency	Percentage
Very important	51	71.8%
Somewhat important	14	19.7%
Somewhat unimportant	4	5.6%
Very unimportant	2	2.8%
Totals ^a	71	99.9%

^a The sum of the percentages appears slightly low, due to the effect of rounding.

Table 18.

Descriptive statistics for Item 14

Statistic	Value
Mean	3.61
Median	4.00
Mode	4.00
Standard Deviation	0.72

Question 15

Item 15 on the questionnaire was open to all participants and was a follow-up question to item 14. It asked, “Please explain your answer to question 14. Why do you believe as you do?” (Appendix E). The responses were text based and qualitative in this open-ended question. It was essentially asking the respondents to explain why they believe that it is or is not important for a Montessori school to have a written Montessori-specific curriculum document.

As with questions 10 and 13, the responses were coded and sorted into 10 simple thematic categories. A short label representing the theme of the response was given to each of the 10 categories. The 10 themes responding to the prompt are as follows:

Theme A: Consistency. These respondents were indicating that the reason having a written curriculum is important is to provide consistency between classrooms.

Theme B: Knowing what is expected (teacher and child). These respondents are indicating that a benefit of having a written curriculum is for the teachers as well as the children to know the curricular expectations of the school.

Theme C: Mutual support, work together. These respondents are not really suggesting a benefit of having a written curriculum, but instead are proposing that teachers should work together to create a curriculum.

Theme D: Following, improving and protecting Montessori. These respondents were indicating that the Montessori approach is strengthened and improved as a benefit of having a written curriculum. It also may protect the Montessori approach in schools; by allowing school spokespersons to more clearly articulate a curriculum.

Theme E: Preparing for future levels. These respondents were pointing out that a benefit of having a written curriculum is that children from various classes would be offered equal opportunities for preparation to advance to higher levels.

Theme F: Albums drive the curriculum. These respondents were indicating that a written curriculum is not needed since teachers may or should follow their albums.

Theme G: Tie to standards. These respondents suggested as a benefit of having a written curriculum, it can be aligned to district requirements or state standards.

Theme H: Exposure to whole curriculum. These respondents identified a benefit of having a written curriculum as knowing that all children will have exposure to the entirety of the Montessori curriculum plan; they would not be diverted due to the nature of one classroom or another.

Theme I: Meet the needs of the child. These respondents were indicating that the learning needs of each child will be better met as a benefit of having a written curriculum.

Theme J. Accountability. These respondents were indicating that a better basis for communication to parents, school boards, higher administrators and the community would be a benefit of having a written curriculum.

Non-Responsive. These respondents did not direct an answer to the question.

There were 61 respondents to this question, who mentioned the 10 themes 87 times. There were also three respondents who did not respond to the question. These results are seen in Table 19. The most frequently cited theme, at 21.11%, was that without a written curriculum plan, their schools are not guaranteeing consistency.

Table 19.

Thematic Analysis of Why Respondents Believe That it is or is not Important for a Montessori School to Have a Written Montessori-Specific Curriculum Document.

Themes	Totals	Percentage	Top Ranks
Theme A: Consistency	19	21.11%	1
Theme B: Knowing what is expected	12	13.33%	2
Theme C: Mutual support	3	3.33%	
Theme D: Following and improving Montessori	9	10.00%	
Theme E: Preparing for future levels	7	7.78%	
Theme F: Albums drive the curriculum	10	11.11%	4
Theme G: Tie to standards	9	10.0%	
Theme H: Exposure to whole curriculum	4	4.44%	
Theme I: Meet the needs of the child	11	12.22%	3
Theme I: Accountability	3	3.33%	
Non-Responsive	3	3.33%	
Totals ^a	90	99.98%	

^aThe sum of the percents appears slightly low, due to the effect of rounding.

It is worth noting in Table 19 that Theme F: Albums drive the curriculum, received 11.11% of the comments. These comments generally opposed the idea of a written Montessori-specific curriculum document. Nearly all of the other responses favored the curriculum document.

Question 16

Item 16 was open to all respondents. It asked, “How important is it that all classrooms at a given level offer children the same lessons?” (Appendix E). There were four rank-ordered closed-ended responses to this question. In the analysis, these were each be given a numerical value, using the same method as in item 14.

Seventy-one respondents answered this question ($n=71$). The results, summarized in Table 20, showed that a substantial majority of the respondents (62%) believed that it is very important for a Montessori school to have a written Montessori-specific curriculum document. Collapsing the categories of importance and unimportance reveals that 88.8% of the respondents believed in the importance of all classrooms at a given level offering children the same lessons, while 11.3% of the respondents believed that it is unimportant. Descriptive statistics for this item are shown in Table 18.

Table 20.

How important is it that all classrooms at a given level offer children the same lessons?

Response	Frequency	Percentage
Very important	44	62.0%
Somewhat important	19	26.8%
Somewhat unimportant	6	8.5%
Very unimportant	2	2.8%
Totals ^a	71	100.1%

^a The sum of the percentages appears slightly high, due to the effect of rounding.

Table 21

Descriptive statistics for Item 16

Statistic	Value
Mean	3.48
Median	4.00
Mode	4.00
Standard Deviation	0.77

Question 17

Item 17 on the questionnaire was open to all participants. It was a follow-up question to item 16. It asked, “Please explain your answer to question 16. Why do you believe as you do?” (Appendix E). The responses were text based and qualitative in this open-ended question. As with earlier open-ended questions, the responses were coded and sorted into simple categories, and then presented in a table form, as a thematic

analysis. This question asked the respondents to explain why they believe that it is or is not important for all classrooms in a Montessori school at a given level to offer children the same lessons.

The responses were coded and sorted into 10 simple thematic categories. A short label representing the theme of the response was given to each of the 10 categories. The 10 themes responding to the prompt are as follows:

Theme A: Preparing for the future, moving to the next level. These respondents were suggesting that it was important for all classrooms at a given level to offer children the same lessons because in that way, they will be offered equal opportunities to succeed at higher levels.

Theme B: Faulty plan. These respondents indicated that it is inappropriate for all classrooms at a given level to offer children the same lessons because children are different and require different lessons according to their interests or abilities.

Theme C: Giving all children the same starting point. These respondents were reporting that it is important for all classrooms at a given level to offer children the same lessons because it gives all children an equal starting point in education.

Theme D: Following, improving and protecting Montessori. These respondents suggested that it was important for all classrooms at a given level to offer children the same lessons because it protects and improves the Montessori nature of the school.

Theme E: Consistency. These respondents indicated that all classrooms at a given level should offer children the same lessons to provide consistency between classrooms and throughout the school.

Theme F: Avoids favoritism in classrooms or teachers. These respondents were suggesting that that all classrooms at a given level should offer children the same lessons because to do otherwise creates favoritism within the school based on teacher preferences because of what curriculum they offer.

Theme G: Standards. These respondents were saying that a benefit of having all classrooms at a given level offering children the same lessons is that the curriculum can be aligned to district requirements or state standards.

Theme H: Clarity and help for children. These respondents indicated that a benefit of having all classrooms at a given level offering children the same lessons is that it makes the organization of learning clearer to children or offers a help to children and their learning.

Theme I: Core concepts or curriculum. These respondents suggested that having all classrooms at a given level offering children the same lessons creates or identifies a common core of study through the whole level.

Theme J: Follow the child. These respondents were concerned that offering children the same lessons in all classrooms at a given level is may not follow the interests or abilities of each child. Their concerns were similar to Theme B, but they also saw advantages of the plan.

Non-Responsive: These respondents did not direct an answer to the question.

There were 71 respondents to this question, who mentioned the 10 themes 81 times. There were also six respondents who did not respond to the question. These results are seen in Table 22. The most frequently cited theme, at 19.5%, was that offering the same lessons in all classrooms at a given level, gives clarity and help for children.

Table 22

Thematic Analysis of Why Respondents Believe That it is or is not Important for All Classrooms at a Given Level in a Montessori School to Offer Children the Same Lessons.

Themes	Totals	Percentage	Top Ranks
Theme A Preparing for the future	11	12.6%	3
Theme B Faulty plan	10	11.5%	4
Theme C The same starting point	9	10.3%	
Theme D Following Montessori	7	8.0%	
Theme E Consistency	14	16.1%	2
Theme F Avoids favorites	2	2.3%	
Theme G Standards	3	3.4%	
Theme H Clarity and help for children	17	19.5%	1
Theme I Core concepts	4	4.6%	
Theme J Follow the child	4	4.6%	
Non-Responsive	6	6.9%	
Totals ^a	87	99.8%	

^aThe sum of the percents appears slightly low, due to the effect of rounding.

Question 18

Item 18 was open to all respondents. Question 18 asked, “Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?” (Appendix E). There were four rank-ordered closed-ended responses to this question. In the analysis, numerical values were used, following the same method as in item 14.

Seventy-one respondents answered this question ($n=71$). The results, summarized in Table 23, showed that all respondents (100%) believed that it is educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level. Of these respondents, 87.3% indicated that it was very valuable. Descriptive statistics for this item are shown in Table 24.

Table 23

Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?

Response	Frequency	Percentage
Very valuable	62	87.3%
Somewhat valuable	9	12.7%
Not very valuable	0	0%
It has no value	0	0%
Totals	71	100.00%

Table 24

Descriptive statistics for Item 18

Statistic	Value
Mean	3.88
Median	4.00
Mode	4.00
Standard Deviation	0.34

Question 19

Item 19 was open to all respondents. It asked, “What value would a written curriculum document have in the evaluation of students?” (Appendix E). There were four rank-ordered closed-ended responses to this question. The analysis applies numerical values, using the same method as in item 14.

Seventy-one respondents answered this question ($n=71$). The results, summarized in Table 25, showed that a substantial majority of the respondents (66.2%) believed that a written curriculum document would be very valuable or clarifying in the evaluation of students. Collapsing the categories of importance and unimportance reveals that 90.1% of the respondents believe that a written curriculum document would be very valuable or clarifying in the evaluation of students, while 9.9% of the respondents believe that it is of little value or worse. Descriptive statistics for this item are shown in Table 26.

Table 25

What value would a written curriculum document have in the evaluation of students?

Response	Frequency	Percentage
Very valuable or clarifying	47	66.2%
Somewhat valuable or clarifying	17	23.9%
Little value	6	8.5%
Harmful or confusing	1	1.4%
Totals	71	100.0%

Table 26

Descriptive statistics for Item 19

Statistic	Value
Mean	3.45
Median	4.00
Mode	4.00
Standard Deviation	0.75

Question 20

Item 20 was open to all respondents. Question 20 asked, “Would a written Montessori-specific curriculum document support Montessori education in your school?” (Appendix E). There were four rank-ordered closed-ended responses to this question. In the analysis, they were given a numerical value, using the same method as in item 14

Seventy-one respondents answered this question ($n=71$). The results, summarized in Table 27, show that a substantial majority of the respondents (71.8%) believed that a written curriculum document would be a strong support for Montessori education in their schools. Collapsing the categories of importance and unimportance reveals that 90.1% of the respondents believed that a written curriculum document would be supportive to Montessori education, while 9.8% of the respondents believe that it may or would conflict with Montessori education. Descriptive statistics for item 20 are shown in Table 28.

Table 27

Would a written Montessori-specific curriculum document support Montessori education in your school?

Response	Frequency	Percentage
A strong support for Montessori education	51	71.8%
A support for Montessori education	13	18.3%
May conflict with Montessori education	3	4.2%
Will definitely conflict with Montessori education	4	5.6%
Totals ^a	71	99.90%

^aThe sum of the percents appears slightly low, due to the effect of rounding.

Table 28

Descriptive statistics for Item 20

Statistic	Value
Mean	3.56
Median	4.00
Mode	4.00
Standard Deviation	0.82

Question 21

Item 21 was open to all participants, as a follow-up question to item 20. It asks, “Please explain your answer to question 20. Why do you believe as you do?” (Appendix E). As with earlier open-ended questions, the text based responses were coded and sorted into simple categories, and then presented in a table form, as a thematic analysis. This

question asked the respondents to explain why they believe that a written curriculum document would be or would not be a strong support for Montessori education in their schools.

The responses were coded and sorted into seven simple thematic categories. A short label representing the theme of the response was given to each of the seven categories. The seven themes responding to the prompt are as follows:

Theme A: Consistency. These respondents suggested that a written curriculum document would be a strong support for Montessori education because it would provide consistency between classrooms and throughout the school.

Theme B: Following /or protecting Montessori. These respondents suggested that a written curriculum document would be a strong support for Montessori education because it would support Montessori, and protect and improve the Montessori nature of the school.

Theme C: Better organized. These respondents believed that a written curriculum document would be a strong support for Montessori education because would help the schools to become more orderly and systematic.

Theme D: Help for children. These respondents indicated that a written curriculum document would be a strong support for Montessori education because it can offer a help to children and their learning.

Theme E: Accountability or standards. These respondents suggested that a written curriculum document would be a strong support for Montessori education because the curriculum can be aligned to district requirements or state standards. It also can make the school able to be more responsible to parents, school board, and the community.

Theme F: Faulty plan. These respondents were indicating that a written curriculum document would not support Montessori education because children are different and require different lessons according to their interests or abilities, and because albums can be used instead.

Theme G: School Improvement or strengthening schools. These respondents suggested that a written curriculum document would be a strong support for Montessori education by strengthening and improving public Montessori schools.

Non-Responsive: These respondents did not direct an answer to the question.

There were 55 respondents to this question, who mentioned the seven themes 69 times. There were also six respondents who did not respond to the question. These results are seen in Table 29. The most frequently cited theme, at 19.5%, was that offering the same lessons in all classrooms at a given level, gives clarity and help for children.

Table 29

Thematic Analysis of Why Respondents Believe that it is or is not Important for All Classrooms at a Given Level in a Montessori School to Offer Children the Same Lessons.

Themes	Totals	Percentage	Top Ranks
Theme A: Consistency	10	14.5%	2
Theme B: Following or protecting Montessori	10	14.5%	2
Theme C: Better Organized	5	7.2%	
Theme D: Help for children	10	14.5%	2
Theme E: Accountability or standards	16	23.2%	1
Theme F: Faulty plan	8	11.6%	
Theme G: School Improvement or strengthening schools	7	10.1%	
Non-Responsive	3	4.3%	
Totals ^a	69	99.9%	

^aThe sum of the percents appears slightly low, due to the effect of rounding.

Summary of Opinions and Reflections Section

The Opinions and Reflections section of the questionnaire contained eight items. Five of these were closed end multiple-choice items and three were open-ended text based items. The thrust of this section was to get the reasoning and opinions of the respondents about a written Montessori curriculum.

All five of the closed end questions (questions 14, 16, 18, 19, and 20) asked participants to respond in various ways to the perceived values of having a written curriculum document. The responses to every one of these questions were strongly

positive with mean scores all above 3.4, which is above an 85% approval rating. It seems clear that the respondents strongly approve a written Montessori-specific curriculum document.

In the open-ended questions (15, 17, and 21), certain themes appeared in two or more of the questions. The most common theme in all answers was consistency. Consistency was cited a total of 43 times, representing 17.3% of all responses in these three questions. The theme that appeared the second largest number of times was helping children or meeting their needs. These cumulative results are summarized in Table 30.

Table 30

Most Prevalent Themes in Questions 15, 17, and 21

Themes	Totals	Percentage	Top Ranks
Consistency	43	17.5	1
Help and clarity for children, or meeting their needs	38	15.4	2
Standards and/or accountability	31	12.5	3
Faulty plan or use albums as curriculum	28	11.4	
Following, improving, and/or protecting Montessori	26	10.6	
Preparing for future levels	18	7.3	
Non-Responsive	12	4.9	
Others	50	20.3	
Total ^a	246	99.9	

^aThe sum of the percents appears slightly low, due to the effect of rounding.

Comparisons

This section addresses comparisons between the existence of a written curriculum and the perception of value in the written curriculum. The purpose of this component is to compare the responses made by different demographic groups, such as principals and teachers. It also examines the consistency of the respondents when a practice is contrasted with a belief.

To make these comparisons, an analysis of variance (ANOVA) procedure was performed to determine whether there are any significant differences in the response level dependent upon an earlier factor, such as the position in the school from question one. The ANOVA used was a one-way or one-factor ANOVA.

These one-way ANOVA procedures sought to determine if significant differences existed between the mean values for a variable, rated or measured quantitatively across levels of a factor. For instance, position in school (question 1) is a factor that occurs at five levels by the design of the study. Only three of these levels are chosen for this analysis because of the small number of responses in the levels of Montessori Coordinator and Other.

The between group sum of squares estimate the variability between the overall mean of all observations (responses) and the mean for each level of the factor. The within group sum of squares estimate the variability between the measurements within a level of the factor and the mean for the factor level.

By statistical methods (Churchill, 1995) for the factor levels, the between groups degree of freedom (*df*) is one less than the number of factor levels; and the within groups degree of freedom is the total number of observations minus the number of factor levels.

The total degree of freedom is the sum of the within and between degrees of freedom, again by statistical methods (Churchill, 1995). The corresponding mean squares are the sum of squares divided by the degree of freedom, respectively for the within and between groups.

The *F-ratio* is a statistic that estimates the ratio of the between group sum of squares to the within group sum of squares. The larger the *F-ratio*, the more likely it is that the levels vary more among themselves than they vary within themselves. In other words, the larger the *F-ratio*, the more likely it is that the means of the levels of the factor are statistically not comparable.

High *p-values* are suggestive of no statistical difference. High *p-values*, greater than .20, are frequently regarded as showing no statistically significant differences. The post-hoc tests, all showed one subset of entries at the 5% ($\alpha = .05$) level of statistical significance. Thus, the grouped means were statistically comparable at the 95% level of confidence.

It is important to note that some of the sample sizes are quite small. In this analysis, average sample sizes less than ten usually require caution in interpreting post-hoc test results.

Comparisons of Principals and Teachers

This section compares the responses of principals to those of Montessori teachers for questions 14, 16, 18, and 19. For each of these questions, a one-way ANOVA was performed to determine whether there were any significant differences in the response

level dependent upon the factor of the respondent's position in the school, as had been indicated in their responses to question 1.

There were 71 responses to each of these five questions. However, the position levels of Montessori coordinator or curriculum director, and Other in Question 1 were deliberately excluded from the analysis of each question because of the small number of respondents in those categories. The remaining respondents each identified themselves in one of the three levels as principal or school heads, lower elementary Montessori teachers, and upper elementary Montessori teachers.

Question 14. There were 67 respondents to this item who identified themselves in question 1 as belonging to one of the three levels as principal or school heads, lower elementary Montessori teachers, and upper elementary Montessori teachers. The object of this comparison is to compare the responses of the principals to the teachers, with respect to question 14, which asks, "How important is it for a Montessori school to have a written Montessori-specific curriculum document?"

For the factor of question 1, the mean importance ratings for the variables in question 14 were comparable for the position levels of principal or school head, lower elementary Montessori teacher, and upper elementary Montessori teacher, as can be seen in the post-hoc test in Table 31. The mean importance rating of 3.61 by principals or school heads for a Montessori school to have a written Montessori-specific curriculum document was somewhat lower than the mean ratings for the other two levels. However, the principals' mean of 3.61 is statistically comparable to the mean importance ratings of 3.67 by the lower elementary Montessori teachers and 3.74 for the upper elementary Montessori teachers for item 14.

Table 31

Mean Ratings of Question 14 According to School Position

Position (from Question 1)	N^a	Subset for Alpha = .05 ^b
Principal or School Head	18	3.61
Lower Elementary Montessori Teacher	30	3.67
Upper Elementary Montessori Teacher	19	3.74

^a N stands for number of respondents.

^bThe grouped means were statistically comparable at the 95% level of confidence.

The differences in the responses of the principals or school heads, lower elementary Montessori teachers and upper elementary Montessori teachers were not statistically significant. This is shown in Table 32 by the p -values in the last column, which demonstrate that no statistically significant differences exist in the mean ratings for question 14, for the factor, position in the school (from Question 1) occurring at the three chosen position levels.

Table 32

ANOVA for position in school (from Question 1) compared to variables in Question 14

	df^a	F^b	Sum of Squares	Mean Square	p^c
Between Groups	2	.192	.147	.074	.826
Within Groups	64		24.629	.385	
Total ^d	66		24.776		

^aThe abbreviation df means degree of freedom.

^bThe abbreviation F means the F ratio.

^cThe abbreviation p means the p -value.

Question 16. There were 67 respondents to this item who identified themselves in question 1 as belonging to one of the three levels as principal or school heads, lower elementary Montessori teachers, and upper elementary Montessori teachers. The object of this comparison was to compare the responses of the principals to the teachers, with respect to question 16, which asked, “How important is it that all classrooms at a given level offer children the same lessons?”

For the factor, position in the school, from question 1, the mean importance ratings for the variables in question 16 are comparable for the three position levels of principal or school head, lower elementary Montessori teacher, and upper elementary Montessori teacher, as can be seen in the post-hoc test in Table 33. The mean importance rating for question 16 by principals and school heads was 3.28; by lower elementary teachers, it was 3.63; and by upper elementary teachers, it was 3.58.

Table 33

Mean Ratings of Question 16 According to School Position

Position (from Question1)	<i>N</i> ^a	Subset for Alpha = .05 ^b
Principal or School Head	18	3.28
Lower Elementary Montessori Teacher	30	3.63
Upper Elementary Montessori Teacher	19	3.58

^a *N* stands for number of respondents.

^b At the 95% level of confidence.

The differences in the responses to question 16 by the principals or school heads, lower elementary teachers, and upper elementary teachers were not statistically significant. This is shown in Table 34 by the p -value in the last column, which demonstrates that no statistically significant differences exist in the mean ratings for question 16, for the factor, position in the school (from Question 1) occurring at the three chosen position levels.

Table 34

ANOVA for position in school (from Question 1) compared to variables in Question 16

	df^a	F^b	Sum of Squares	Mean Square	p^c
Between Groups	2	1.545	1.507	.754	.221
Within Groups	64		31.209	.488	
Total	66		32.716		

^aThe abbreviation df means degree of freedom.

^bThe abbreviation F means the F ratio.

^cThe abbreviation p means the p -value.

Question 18. There were 67 respondents to this item who identified themselves in question 1 as belonging to one of the three levels as principals or school heads, lower elementary Montessori teachers, and upper elementary Montessori teachers. The object of this comparison was to compare the responses of the principals to the teachers, with respect to question 18, which asked, “Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?”

For the factor of question 1, the mean importance ratings for the variables in question 18 were comparable for the three position levels of principal or school head, lower elementary Montessori teacher, and upper elementary Montessori teacher, as can be seen in the post-hoc test in Table 35. The mean importance rating for question 18 by principals and school heads was 3.78; by lower elementary teachers, it was 3.90; and by upper elementary teachers, it was 3.95.

Table 35

Mean Ratings of Question 18 According to School Position

Position (from Question1)	N^a	Subset for Alpha = .05 ^b
Principal or School Head	18	3.78
Lower Elementary Montessori Teacher	30	3.90
Upper Elementary Montessori Teacher	19	3.95

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences in the responses to question 18 by the principals or school heads, lower elementary teachers, and upper elementary teachers were not statistically significant. This is shown in Table 36 by the p -value in the last column, which demonstrates that no statistically significant differences exist in the mean ratings for question 18, for the factor, position in the school (from Question 1) occurring at the three chosen position levels.

Table 36

ANOVA for position in school (from Question 1) compared to variables in Question 18

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	2	1.356	.286	.143	.265
Within Groups	64		6.758	.106	
Total	66		7.045		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Question 19. There were 68 respondents to this item who identified themselves in question 1 as belonging to one of the three levels as principals or school heads, lower elementary Montessori teachers, and upper elementary Montessori teachers. The object of this comparison was to compare the responses of the principals to the teachers, with respect to question 19, which asked, “What value would a written curriculum document have in the evaluation of students?”

For the factor, question 1, the mean importance ratings for the variables in question 19 were comparable for the three position levels of principal or school head, lower elementary Montessori teacher, and upper elementary Montessori teacher, as can be seen in the post-hoc test in Table 37. The mean importance rating for question 19 by principals and school heads was 3.63; by lower elementary teachers, it was 3.53; and by upper elementary teachers, it was 3.74.

Table 37

Mean Ratings of Question 18 According to School Position

Position (from Question1)	N^a	Subset for Alpha = .05 ^b
Principal or School Head	19	3.63
Lower Elementary Montessori Teacher	30	3.53
Upper Elementary Montessori Teacher	19	3.74

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences in the responses to question 18 by the principals or school heads, lower elementary teachers, and upper elementary teachers were not statistically significant. This is shown in Table 38 by the p -value in the last column, which demonstrates that no statistically significant differences exist in the mean ratings for question 19, for the factor, position in the school (from Question 1) occurring at the three chosen position levels.

Table 38

ANOVA for position in school (from Question1) compared to variables in Question 19

	df^a	F^b	Sum of Squares	Mean Square	p^c
Between Groups	2	.535	.487	.243	.588
Within Groups	65		29.572	.455	
Total	67		30.059		

^aThe abbreviation df means degree of freedom.

^bThe abbreviation F means the F ratio.

^cThe abbreviation p means the p -value.

Comparisons Based on School Location

This section compares the answers from respondents who identified their schools in question 4 as located in Minnesota's seven county metro area, greater Minnesota, or Wisconsin. These answers were compared with their responses to questions 14, 16, 18, and 19. For each of these questions, an ANOVA was performed to determine whether there were any significant differences in the response level dependent upon the factor of the school location, as was indicated in the responses to question 4.

The small sample sizes in the post-hoc tests suggest that the results must be taken with caution, because larger sample sizes could yield different results. There were 18 respondents to each of these items who identified their school location in question 4 as being in either Minnesota's seven county metro area, Greater Minnesota or Wisconsin. The reason for the small sample sizes is that question 4 was only answered by principals or school heads.

Question 14. The object of this comparison was to compare the responses of the principals from the three regions, with respect to question 14, which asked, "How important is it for a Montessori school to have a written Montessori-specific curriculum document?" For this factor, question 4, the mean importance ratings for the variables in question 14 were comparable for the respondents from all three regions, as can be seen in the post-hoc test in Table 39.

Table 39

Mean Ratings of Question 14 According to School Location

School Location (from Question 4)	N ^a	Subset for Alpha = .05 ^b
Minnesota Metro area	4	3.50
Greater Minnesota	7	3.57
Wisconsin	7	3.71

^aN stands for number of respondents.

^bAt the 95% level of confidence.

The differences in the respondents from the different regions were not statistically significant. This is shown in Table 40 by the p -value in the last column, which demonstrates that no statistically significant differences exist in the mean ratings for question 14, for the factor, location of the school (from Question 4) occurring at the three location levels.

Table 40

ANOVA for the location of the school (from Question 4) compared to variables in Question 14

	df^a	F^b	Sum of Squares	Mean Square	p^c
Between Groups	2	.124	.135	.067	.884
Within Groups	15		8.143	.543	
Total	17		8.278		

^aThe abbreviation df means degree of freedom.

^bThe abbreviation F means the F ratio.

^cThe abbreviation p means the p -value.

Question 16. The object of this section was to compare the responses of the principals from the three regions, with respect to question 16, which asked, “How important is it that all classrooms at a given level offer children the same lessons?” Table 41 shows that for the factor, question 4, the mean importance ratings for the variables in question 16 were comparable for the respondents from all three regions.

Table 41

Mean Ratings of Question 16 According to School Location

School Location (from Question 4)	<i>N</i> ^a	Subset for Alpha = .05 ^b
Minnesota Metro area	4	3.50
Greater Minnesota	7	3.14
Wisconsin	7	3.29

^a *N* stands for number of respondents.

^b At the 95% level of confidence.

The differences in the respondents from the different regions were not statistically significant. This is shown in Table 42 by the p-value in the last column, which demonstrates that no statistically significant differences exist in the mean ratings for question 16, for the factor, location of the school (from Question 4) occurring at the three location levels.

Table 42

ANOVA for the location of the school (from Question 4) compared to variables in Question 16

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	2	.160	.325	.163	.854
Within Groups	15		15.286	1.019	
Total	17		15.611		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Question 18. The object of this section was to compare the responses of the principals from the three regions, with respect to question 18, which asked, “Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?” Table 43 shows that for the factor, question 4, the mean importance ratings for the variables in question 18 were comparable for the respondents from all three regions.

Table 43

Mean ratings of question 18 according to school location

School Location (from Question 4)	<i>N</i> ^a	Subset for Alpha = .05 ^b
Minnesota Metro area	4	3.75
Greater Minnesota	7	3.86
Wisconsin	7	3.71

^a*N* stands for number of respondents.

^bAt the 95% level of confidence.

The differences in the respondents from the different regions were not statistically significant. This is shown in Table 44 by the p -value in the last column, which demonstrates that no statistically significant differences existed in the mean ratings for question 18, for the factor, location of the school (from Question 4) occurring at the three location levels.

Table 44

Analysis of variance for the location of the school (from Question 4) compared to variables in Question 18

	df^a	F^b	Sum of Squares	Mean Square	p^c
Between Groups	2	.160	.325	.163	.854
Within Groups	15		15.286	1.019	
Total	17		15.611		

^aThe abbreviation df means degree of freedom.

^bThe abbreviation F means the F ratio.

^cThe abbreviation p means the p -value.

Question 19. The object of this section was to compare the responses of the principals from the three regions, with respect to question 19, which asks, “What value would a written curriculum document have in the evaluation of students?” Table 45 shows that for the factor, question 4, the mean importance ratings for the variables in question 19 were comparable for the respondents from all three regions.

Table 45

Mean Ratings of Question 19 According to School Location

School Location (from Question 4)	N^a	Subset for Alpha = .05 ^b
Minnesota Metro area	4	3.50
Greater Minnesota	7	3.57
Wisconsin	7	3.71

^a N stands for number of respondents.

^bAt the 95% level of confidence.

The differences in the respondents from the different regions were not statistically significant. This is shown in Table 46 by the p -value in the last column, which demonstrates that no statistically significant differences exist in the mean ratings for question 19, for the factor, location of the school (from Question 4) occurring at the three location levels.

Table 46

ANOVA for the location of the school (from Question 4) compared to variables in Question 19

	df^a	F^b	Sum of Squares	Mean Square	p^c
Between Groups	2	.124	.135	.067	.884
Within Groups	15		8.143	.543	
Total	17		8.278		

^aThe abbreviation df means degree of freedom.

^bThe abbreviation F means the F ratio.

^cThe abbreviation p means the p -value.

Comparisons Based on Curriculum Management

This section examines the effect of the factor of curriculum management from question 7. Question 7 read, “How is Montessori curriculum managed in your school's elementary level program?” (Appendix E).

Four answer categories were considered for this comparison. From the questionnaire (Appendix E), those were:

1. Our school has a written Montessori-specific curriculum document, which we follow.
2. Teachers may follow their Montessori albums independently.
3. Teachers may follow the interests of children.
4. We follow the district (non-Montessori) curriculum, but modify it with Montessori lessons.

Two categories or levels from question 7 were deliberately excluded from the analysis because of the small number or non-existent number of respondents in those two categories. The excluded categories were as follows:

1. There is a district (non-Montessori) curriculum, which we follow
2. We do not have an accepted system of curriculum management

The respondent's selection of any of the four categories from question 7 was compared with their responses to questions 14, 16, 18, and 19. For each of these questions, an ANOVA was performed to determine whether there were any significant differences in the response level dependent upon the factor of the curriculum management, as had been indicated in the responses to question 7.

Question 14. The object of this section is to compare the responses made to question 7, to the responses those same participants made to question 14, which asked, “How important is it for a Montessori school to have a written Montessori-specific curriculum document?” (Appendix E). For this factor, question 7, the mean importance ratings of 3.69 and 3.77 for the variable question14 were comparable, while the mean importance rating of 3.90 for the level “our school has a written Montessori specific curriculum” is statistically significantly higher than the other means at $\alpha = .05$, as can be seen in the post-hoc test in Table 47.

In other words, at the 95% confidence level, for question 14, the importance for a Montessori school to have a Montessori specific curriculum document is higher by a statistically significant difference, for the category of respondents who indicated that their school does have a written Montessori specific curriculum, which they follow, than it is for the other categories of respondents. Also in Table 47, it can be noted that even though the mean of 3.38 for the category “We follow the district (non-Montessori) curriculum, but modify it with Montessori lessons” is lower than the mean of 3.69 for the category “Teachers may follow their Montessori albums independently,” yet both of these means are comparable at the 95% confidence level.

Table 47

Mean ratings of Question 14 related to curriculum management

Type of Curriculum Management (from Question 7)	N ^a	Subset for Alpha = .05 ^b	
		1	2
The district (non-Montessori) curriculum, but modified with Montessori lessons.	13	3.38	
Teachers follow Montessori albums independently.	32	3.69	3.69
Teachers follow the interests of children.	13	3.77	3.77
A written Montessori-specific curriculum document.	10		3.90

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 14 were statistically significant. This is shown in Table 48 by the relatively low p-value for question 14 in the last column, which demonstrates that statistically significant differences do exist in the mean ratings for question 14, for the factor, Montessori Curriculum Management (from question 7), occurring at the four chosen levels.

Table 48

ANOVA for curriculum management system (from Question 7) compared to variables in Question 14

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	3	1.587	1.723	.574	.201
Within Groups	64		23.160	.362	
Total	67		24.882		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Question 16. The object of this section is to compare the responses made to question 7, to the responses those same participants made to question 16, which asked, “How important is it that all classrooms at a given level offer children the same lessons?” (Appendix E). Table 49 shows that, at the 95% confidence level, the importance of all classrooms at a given level offering children the same lessons was comparable for all the chosen categories of Montessori curriculum management (from question 7).

Table 49

Mean Ratings of Question 16 Related to Curriculum Management

Type of Curriculum Management (from Question 7)	<i>N</i> ^a	Subset for Alpha = .05 ^b
The district (non-Montessori) curriculum, modified with Montessori lessons.	13	3.31
Teachers follow Montessori albums independently.	32	3.53
Teachers follow the interests of children.	14	3.79
A written Montessori-specific curriculum document.	10	3.50

^a *N* stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 16 were not statistically significant. This is shown in Table 50 by the p-value in the last column, which demonstrates that no statistically significant differences exist in the mean ratings for question 16, for the factor, Montessori Curriculum Management (from question 7), occurring at the four chosen levels.

Table 50

ANOVA for curriculum management system (from Question 7) compared to variables in Question 16

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	3	1.587	1.723	.574	.201
Within Groups	64		23.160	.362	
Total	67		24.882		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Question 18. The object of this section was to compare the responses made to question 7, to the responses those same participants made to question 18, which asked, “Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?” (Appendix E). Among the categories of Montessori curriculum management from question 7, the post-hoc test in table 51 shows that at the 5% significance level (95% confidence level), there is a statistically significant difference in the perceived educational value to the teachers of upper elementary classes to know that particular lessons have been offered to children. The category of respondents who follow a Montessori-modified district curriculum post the lowest mean of 3.62, while the other mean values are comparable at the 95 % confidence level).

Table 51

Mean ratings of Question 18 related to curriculum management

Type of Curriculum Management (from Question 7)	N ^a	Subset for Alpha = .05 ^b	
		1	2
The district (non-Montessori) curriculum, but modified with Montessori lessons.	13	3.62	
Teachers follow Montessori albums independently.	32		3.91
Teachers follow the interests of children.	13		3.92
A written Montessori-specific curriculum document.	10		4.00

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 18 were statistically significant. This is shown in Table 52 by the relatively low *p*-value for question 18 in the last column, demonstrating that statistically significant differences do exist in the mean ratings for question 18, for the factor, Montessori Curriculum Management (from question 7), occurring at the four chosen levels.

Table 52

ANOVA for curriculum management system (from Question 7) compared to variables in Question 18

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	3	3.461	1.090	.363	.021
Within Groups	64		6.719	.105	
Total	67		7.809		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the F ratio.

^cThe abbreviation *p* means the p-value.

Question 19. The object of this section is to compare the responses made to question 7, to the responses those same participants made to question 19, which asked, “What value would a written curriculum document have in the evaluation of students?” (Appendix E). Table 53 shows that, at the 95% confidence level, the value a written curriculum document would have in the evaluation of students is comparable across the four categories of curriculum management included in the analysis of question 7.

Table 53

Mean ratings of Question 19 related to curriculum management

Type of Curriculum Management (from Question 7)	N^a	Subset for Alpha = .05 ^b
The district (non-Montessori) curriculum, but modified with Montessori lessons.	13	3.46
Teachers follow Montessori albums independently.	32	3.53
Teachers follow the interests of children.	13	3.77
A written Montessori-specific curriculum document.	10	3.80

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 16 were not statistically significant. This is shown in Table 54 by the p -value in the last column, which demonstrates that no statistically significant differences existed in the mean ratings for question 19, for the factor, Montessori Curriculum Management (from question 7), occurring at the four chosen levels.

Table 54

ANOVA for curriculum management system (from Question 7) compared to variables in Question 16

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	3	.859	1.172	.391	.467
Within Groups	64		29.107	.455	
Total	67		30.279		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Comparisons Based on a Montessori-Specific Curriculum Document Supporting Montessori Education.

This section examines the effect of the factor of Montessori-specific curriculum support from question 20, which read, “Would a written Montessori-specific curriculum document support Montessori education in your school?” (Appendix E). Two of the categories in question 20, “A written Montessori curriculum may conflict with Montessori education in my school” (Appendix E) and “No, a written curriculum will definitely conflict with Montessori education in my school” (Appendix E), were collapsed into one level of *conflict* because of the small sample sizes in the two combined levels.

That meant that three answer categories were considered for this comparison.

Those are:

1. Yes, a written curriculum would be or is a strong support for Montessori education in my school.

2. A written curriculum would or does support Montessori education in my school.
3. Conflict: A written curriculum may conflict or will definitely conflict with Montessori education in my school.

The respondent's selection of any of the three categories from question 20 is compared with their responses to questions 14, 16, 18, and 19. For each of these questions, an ANOVA was performed to determine whether there were any significant differences in the response level dependent upon the factor of Montessori-specific curriculum support, as was indicated in the responses to question 20.

Question 14. The object of this section was to compare the responses made to question 20, to the responses those same participants made to question 14, which asked, "How important is it for a Montessori school to have a written Montessori-specific curriculum document?" (Appendix E). For this factor, question 20, the mean importance rating of 3.88 for the category "A written curriculum would be or is a strong support for Montessori education in my school," was statistically significantly higher than the mean ratings for the other two categories which post comparable mean ratings.

In other words, as seen in Table 55, the category of respondents who indicated that a written curriculum would be or is a strong support for Montessori education in their school, posted a statistically significantly higher level of importance for a Montessori school to have a written Montessori specific curriculum than did the other two categories, at the 95% confidence level. The categories "Conflict" and "A written curriculum would or does support Montessori education" show comparable mean importance ratings at the 95% confidence level.

Table 55

Mean ratings of Question 14 related to a written Montessori-specific curriculum document supporting Montessori education

Views on a written Montessori curriculum supporting Montessori education (from Question 20)	N ^a	Subset for Alpha = .05 ^b	
		1	2
A written curriculum would be or is a strong support for Montessori education.	52	3.88	
A written curriculum would or does support Montessori education.	12		3.25
Conflict: A written curriculum may conflict or will definitely conflict with Montessori education.	7		3.00

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 14 were statistically significant. This is shown in Table 56 by the relatively low p-value for question 14 in the last column, which demonstrates that statistically significant differences do exist in the mean ratings for question 14, for the factor, a Montessori-Specific Curriculum Document Supporting Montessori Education (from question 20), occurring at the three chosen levels.

Table 56

Analysis of variance for a Montessori-specific curriculum document supporting Montessori education (from Question 20) compared to variables in Question 14

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	2	14.766	7.625	3.813	.000
Within Groups	68		17.558	.258	
Total	70		25.183		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Question 16. The object of this section is to compare the responses made to question 20, to the responses those same participants made to question 16, which asked, “How important is it that all classrooms at a given level offer children the same lessons? (Appendix E). Table 57 shows that the category of respondents who indicated that a written curriculum would be or is a strong support for Montessori education in their school, posted a comparable mean of 3.69 with the category of respondents who indicated a that a written curriculum supports Montessori education with a mean of 3.25. These two were comparable.

Similarly, the category of respondents who indicated that a written curriculum supports Montessori education with a mean of 3.25, was comparable with the mean of 3.00 for the category of respondents who indicated a conflict. This is a second case of comparability.

The mean of 3.00 for the category of conflict was not comparable with the mean of 3.69 for the category of strong support. This difference is statistically significant. All inferences are made at the 95% confidence level.

Table 57

Mean ratings of question 16 related to a written Montessori-specific curriculum document supporting Montessori education

Views on a written Montessori curriculum supporting Montessori education (from Question 20)	N ^a	Subset for Alpha = .05 ^b	
		1	2
A written curriculum would be or is a strong support for Montessori education.	52	3.69	
A written curriculum would or does support Montessori education.	12	3.25	3.25
Conflict: A written curriculum may conflict or will definitely conflict with Montessori education.	7		3.00

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 16 are statistically significant. This is shown in Table 58 by the relatively low p-value for question 16 in the last column, which demonstrates that statistically significant differences do exist in the mean ratings for question 16, for the factor, a Montessori-specific curriculum document supporting Montessori education (from question 20), occurring at the three chosen levels.

Table 58

ANOVA for a Montessori-specific curriculum document supporting Montessori education (from Question 20) compared to variables in Question 16

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	2	4.928	4.251	2.125	.010
Within Groups	68		29.327	.431	
Total	70		33.577		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Question 18. The object of this section is to compare the responses made to question 20, to the responses those same participants made to question 18, which asked, “Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?” (Appendix E). Table 59 indicates that the perceived educational value to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level, was comparable among the three categories of respondents.

Table 59

Mean ratings of Question 18 related to a written Montessori-specific curriculum document supporting Montessori education

Views on a written Montessori curriculum supporting Montessori education (from Question 20)	N^a	Subset for Alpha = .05 ^b
A written curriculum would be or is a strong support for Montessori education.	52	3.92
A written curriculum would or does support Montessori education.	12	3.75
Conflict: A written curriculum may conflict or will definitely conflict with Montessori education.	7	3.71

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 18 were not statistically significant at the 95% confidence level. This is shown in Table 60 by the relatively low p -value for question 18 in the last column, demonstrating that no statistically significant differences exist in the mean ratings for question 18, for the factor of a written Montessori-specific curriculum document supporting Montessori education (from question 20), occurring at the three chosen levels.

Table 60

ANOVA for a written Montessori-specific curriculum document supporting Montessori education (from Question 20) compared to variables in Question 18

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	2	2.252	.488	.244	.113
Within Groups	68		7.371	.108	
Total	70		7.859		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Question 19. The object of this section is to compare the responses made to question 20, to the responses those same participants made to question 19, which asked, “What value would a written curriculum document have in the evaluation of students?” (Appendix E). In Table 61, the category of respondents who indicated that a written curriculum would be or is a strong support for Montessori education in their school had a statistically significantly higher mean of 3.83 than the other two categories show for the value a curriculum document would have in the evaluation of students. The categories of respondents who indicated a that a written curriculum supports Montessori education and the category of conflict showed comparable means of 3.00 and 3.14, respectively, for the value a curriculum document would have in the evaluation of students

Table 61

Mean ratings of Question 19 related to a written Montessori-specific curriculum document supporting Montessori education

Views on a written Montessori curriculum supporting Montessori education (from Question 20)	N ^a	Subset for Alpha = .05 ^b	
		1	2
A written curriculum would be or is a strong support for Montessori education.	52	3.83	
A written curriculum would or does support Montessori education.	12		3.00
Conflict: A written curriculum may conflict or will definitely conflict with Montessori education.	7		3.14

^a N stands for number of respondents.

^b At the 95% level of confidence.

The differences based upon the responses to question 19 are statistically significant. This is shown in Table 62 by the low *p*-value in the last column. This demonstrated that statistically significant differences do exist in the mean ratings for question 19, for the factor, a Montessori-specific curriculum document supporting Montessori education (from question 20), occurring at the three chosen levels.

Table 62

ANOVA for curriculum management system (from Question 7) compared to variables in Question 18

	<i>df</i> ^a	<i>F</i> ^b	Sum of Squares	Mean Square	<i>p</i> ^c
Between Groups	2	2.252	8.433	4.216	.000
Within Groups	68		22.299	.328	
Total	70		30.732		

^aThe abbreviation *df* means degree of freedom.

^bThe abbreviation *F* means the *F* ratio.

^cThe abbreviation *p* means the *p*-value.

Analysis of the Research Questions

Research Question One

The first research question asked, “What form of curriculum documentation and management provides guidance for public Montessori schools in Minnesota and Wisconsin?” This first question was answered by examining the responses to questions 7 through 13. These questions directly focus on the curriculum management systems in the schools involved in the survey.

The responses to these questions in the survey indicate that the most common form of curriculum management was that teachers follow their Montessori albums independently, with 44.7% of the respondents indicating this choice. Other methods in common use were following the district (non-Montessori) curriculum, but modifying it with Montessori lessons and simply following the interests of the children. Only a little more than one in eight of the respondents indicated that they follow a written Montessori specific curriculum document.

All of the respondents who did utilize a written curriculum document also use planned grade level expectations or outcomes for their students. They also all had written the curriculum for at least the lower grades or lower elementary. Furthermore, the curricula that they had written all included arithmetic, biology-science, geography, and language-grammar-reading.

Of the respondents from schools which had not implemented a written curriculum document, about one-third indicated that there was no consistency between classes of the same level or that being consistent was not a goal. Another group of almost one in five used staff discussion to address a consistent curriculum, while about a sixth of them believed that having state standards creates consistency within their schools. Interestingly, although 34 respondents indicated that their schools manage curriculum by allowing teachers to follow their Montessori albums independently, only five respondents believed that following the albums is a means of guaranteeing consistency.

Research Question Two

The second research question asked, “Are the beliefs and feelings of Montessori teachers and administrators in Wisconsin and Minnesota congruent with their practice with respect to curriculum?” This question was answered by examining the answers to questions 14-21, which addressed the beliefs and opinions of the respondents and then comparing these beliefs with the practices revealed under Research Question 1.

The Opinions and Reflections section of the survey aimed to get the reasoning and opinions of the respondents about a written Montessori curriculum. All five of the closed end questions (questions 14, 16, 18, 19, and 20) asked participants to respond in

various ways to the perceived values of having a written curriculum document. The responses to every one of these questions were strongly positive with mean scores all above 3.4, which is above an 85% approval rating. It seems clear that the respondents strongly approved a written Montessori-specific curriculum document.

These data must be contrasted with the results from question 7, “How is Montessori curriculum managed in your school's elementary level program?” (Appendix E). As has been seen above, only 13.2% of the respondents to this question indicated that their school follows a written Montessori-specific curriculum document.

These data indicated that the beliefs of the respondents as demonstrated in their replies to questions 14-21 were not congruent with their practice, from question 7. More than six times the percentage rate of respondents to questions 14-21 were positive towards the use of a written Montessori specific curriculum document compared with those in question 7 that actually use written curriculum documentation.

In the comparisons section, it was also demonstrated that for question 14, the importance for a Montessori school to have a Montessori specific curriculum document is significantly higher for the category of respondents who indicated that their school does have a written Montessori specific curriculum (from Question 7), than it is for the other categories of respondents. This means that the practice and beliefs of those respondents who do use written curriculum documentation was congruent with their response to question 14.

The differential came from the other respondents. This led to the conclusion that those respondents to question 7 who indicated that their schools do not use written curriculum documentation, also overwhelmingly believed it to be very important for a

Montessori school to have a written Montessori-specific curriculum document, as shown in question 14.

There were no significant differences in the respondents to question 16 based on their responses to question 7. This simply means that 88.8% of all respondents believed that it was important or very important that all classrooms at a given level offer children the same lessons. Almost seven times the percentage of respondents to questions 16 were positive towards the idea that all classrooms at a given level offer children the same lessons compared with those in question 7 that actually use written curriculum documentation.

Question 18 asked. “Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?” (Appendix E). All of the responses (100%) were positive. This is more than seven times the 13.2% that used written curriculum documentation.

Question 19 asked. “What value would a written curriculum document have in the evaluation of students?” (Appendix E). The responses were 90.1% positive. The last closed-ended question in the survey, item 20 asked, “Would a written Montessori-specific curriculum document support Montessori education in your school?” (Appendix E). The responses to this question were also 90.1% positive. This rate of positive response to questions 19 and 20 is nearly seven times the 13.2% response rate of those that actually used written curriculum documentation.

In the open-ended questions (15, 17, and 21), certain themes appeared in two or more of the questions. The most common theme in all answers was consistency, cited 43 times, representing 17.3% of all responses in these three questions. The theme that

appeared the second largest number of times was helping children or meeting their needs. This can be contrasted with the response themes to question 13 in which about one-third of the respondents indicated that there was no consistency between classes of the same level or that being consistent was not a goal.

Research Question Three

The third research question asked, “Are there differences in the approach to Montessori school curriculum documentation and management attributable to position, location, or school type?” This question is best answered by examining the comparisons done using the ANOVA procedure in the comparisons section.

To look at position in the school, two classes were compared, the principals and the teachers. The responses of principals were compared to those of the Montessori teachers for questions 14, 16, 18, and 19 to determine whether there are any significant differences in the responses dependent upon their position in the school.

In no case were the differences in response from the different groups found to be statistically significant. In other words, there are no differences in opinions between principals and Montessori teachers on the importance of a written Montessori specific curriculum that are statistically significant.

To look at school location, three classes of Montessori schools were compared, the Minnesota seven county metro-area schools, the schools in greater Minnesota and the Wisconsin schools. Responses from participants from the three regions were compared for questions 14, 16, 18, and 19 to determine whether there are any significant differences in the responses dependent upon the location of their school.

In no case were the differences in response from the different groups found to be statistically significant. In other words, there are no statistically significant differences in opinions between Twin Cities, greater Minnesota, and Wisconsin Montessorians on the importance of a written Montessori specific curriculum.

In looking at differences accountable to school type, it was found that the small average number of observations (about four observations per level) for the factor school type from question 5 suggested that results of the analysis be disregarded from further consideration. This means that there were simply too few schools identifying in each of these classes to perform an accurate analysis.

Summary of Chapter Four

Chapter four of this study described the curriculum documentation practices of the target schools in several ways. An initial element was basic demographic knowledge. It was found that responding schools were equally distributed in Minnesota and Wisconsin. The individual respondents were mostly Montessori classroom teachers, with about one-fourth of the respondents being school principals. Responses from regular public schools and charter schools were about evenly divided.

Curriculum management practices varied among these respondents, but the largest group of them, almost 45%, had the teachers follow their albums independently. Other significant groups follow the local district's curriculum with some Montessori modifications or let the curriculum be determined by following the interests of the children. Only about 13% utilized a written Montessori-specific curriculum document.

Regardless of their use or non-use of a written curriculum document, the great majority of respondents were positive toward such a document and believe that it would benefit their schools. On average, the respondents turned in an 85% approval rating for all questions that asked about the value of written curriculum documentation.

This chapter gave results of the survey and analyzed them statistically. The next chapter will interpret the data, draw conclusions from the results, discuss specific conclusions relative to the research questions, and make suggestions for further research and study.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to examine the management of curriculum in Montessori public elementary schools in Minnesota and Wisconsin. The study sought to determine what method or system of curriculum documentation is presently in use by these schools. The mixed method study was survey based and involved Montessori public school leaders and teachers from both regular public schools and charter schools.

The first goal of the research was to determine whether the curriculum management system in Montessori public schools consisted of formal written curriculum documents or if other techniques of curriculum management are used. As a second goal, the research examined curriculum management absent a specific written curriculum document. As a third goal, the feelings and beliefs of teachers and Montessori school heads with respect to curriculum were assessed.

This chapter of the study reviews the results of the study and provides an interpretation of their meaning. It also examines the implications for curriculum management arising from the results of this study. Finally, possibilities and suggestions for further research are discussed.

Interpretation of Findings

The Review of the Literature

Perhaps one of the most striking elements of the literature review was the century long, very stable Montessori history. Since the early years, Montessorians have been practicing with essentially the same approach around the world. The literature review

reveals Montessorians from many countries sharing and discussing the same materials and similar environments for children.

This history is certainly unusual in education, in which change is much more common than an enduring approach. Montessorians in this review did not seem to be searching for new or different methods. Instead, they sought to explain, understand, or better implement the Montessori Method.

This does not mean that Montessorians did not disagree or dispute. In fact, there were several instances of differences in the literature review. However, these writers differed within the context of Montessori education, fundamentally agreeing about the essentials.

The Research Questions

Research Question 1.

The first research question asked, “What form of curriculum documentation and management provides guidance for public Montessori schools in Minnesota and Wisconsin?” (Appendix E). This first question was answered by examining the responses to questions 7-13. Results discussed in Chapter 4, indicated that curriculum management as it is generally understood is not common in public Montessori elementary schools. Instead, the study found that the most common system of management was to allow teachers to follow their albums, which are teacher manuals from their teacher education programs. Other management systems included following school district curricula with Montessori modifications or letting the interests of children determine the curriculum.

Only about 13% of the respondents use a written Montessori-specific curriculum document.

Each of the approaches that do not utilize a written, overt curriculum present difficulties. Respondents indicated that these alternate curriculum plans lacked consistency. It also made some respondents concerned about properly preparing children for future classes.

Montessori albums are not a curriculum under the definition used in this study. Instead, albums are lengthy documents that go step-by-step through every exercise to be presented to children. They often include planned dialogue between teacher and child and specify precisely where objects are to be placed, moved and ordered on the work surface, which is also specified.

Albums are actually teacher manuals. The evidence from the study suggests that using these albums as a curriculum does not guarantee consistency. Montessori albums come from TEPs, and are different from one TEP to another. Thus, even while following albums, teachers in adjacent classrooms or neighboring schools may well be offering very different Montessori programs.

Following the district curriculum with modifications also created issues about consistency as well as the Montessori nature of the school. Respondents suggested that having a written Montessori-specific curriculum may protect the unique nature of the Montessori public school. Documenting the curriculum may also link the district plans to the six traditional Montessori subjects and the materials that support them.

Following the interests of children is not a curriculum. It does not offer children or families the assurance that certain topics will be introduced or explored. It also may not address all of the six subjects.

The interpretation of these findings is that most Montessori public schools do not actually have a curriculum management system. Absent documentation, it is very difficult to effectively communicate to teachers and among teachers what English (2000) called the instructional objectives, time allocation, evaluation means, instructional materials, and instructional suggestions to truly guide the instructional process. It also makes nearly impossible the alignment of the curriculum with the district goals or providing for educational consistency across and between the various levels.

Research Question 2.

The second research question asked, “Are the beliefs and feelings of Montessori teachers and administrators in Wisconsin and Minnesota congruent with their practice with respect to curriculum?” This question was answered by examining the answers to questions 14-21, which addressed the beliefs and opinions of the respondents. These beliefs were compared with the practices revealed under Research Question 1. It was determined in Chapter 4 that the beliefs and feelings of Montessori teachers and administrators in Wisconsin and Minnesota are not congruent with their practice with respect to curriculum.

What this means is that while only 13.2% of the respondents actually utilized a written Montessori-specific curriculum document, the responses to the questions 14, 16, 18, 19, and 20 were strongly positive with mean scores all above 3.4, which is above an

85% approval rating. The respondents strongly approved a written Montessori-specific curriculum document.

It appears that Montessorians in the public schools of Minnesota and Wisconsin support a written curriculum, even though their school does not use one. This raises the question of why this is so. One possible answer is that the influence of the small percentage that opposed the written curriculum is powerful. These would be the Montessorians that Kahn (1988) calls essentialists.

A second possibility is that the teacher education centers imply that the albums that students receive or create are sufficient to be a curriculum. There is a strong belief in the albums among the respondents. It is also evident from the responses that many Montessorians believe that any curriculum should follow the child, meaning that it develops for each individual child, following each child's directions.

Research Question 3.

The third research question asked, "Are there differences in the approach to Montessori school curriculum documentation and management attributable to position, location, or school type?" This question was answered by examining the comparisons done using the ANOVA procedure in the comparison section.

These comparisons revealed no significant difference based on these factors. This suggests that none of the identified sub-groups differs substantially from the feelings and opinions expressed toward curriculum.

Recommendations for Curriculum Documentation

This section explores suggested future directions in curriculum documentation for public Montessori schools based on the responses in this study. The study established that only a minority (13.2%) of the involved schools utilized a written Montessori curriculum, but the great majority of the respondents favored such a curriculum. Based upon this response, it seems clear that the intellectually honest response for these schools is to move toward the establishment of a written Montessori curriculum.

The difficulty seems to be the differences that teachers bring from their TEPs. As was brought out in some of the responses, the albums are different. Others mentioned the conflict that emerged over curriculum. One respondent urged the TEPs develop a curriculum.

This suggestion may be the best possibility. If one or more Montessori teacher education center were to initiate the development of a curriculum model, it could be adopted and modified by each public school.

This is what happened at one public Montessori school in Minnesota. The school was visited and evaluated by a Montessori teacher trainer from one of the TEPs. The recommendation was made that a written curriculum be developed and adopted. During this study, the school sent the researcher a copy of a written curriculum document that they developed in response to the recommendation (La Crescent Montessori Academy, 2004).

Recommendations for Further Research

There has been no research found on the topic of curriculum management in Montessori schools, which had been done prior to this study. That has indicated that substantial additional research is needed to fully understand the topic.

One concern with this study might be its generalizability. The study focused upon only public Montessori elementary schools in Minnesota and Wisconsin. An important research direction would be to expand the geographical parameters to other areas of the United States, or beyond. Similar studies in other regions would help to make clear the approach to curriculum in all areas.

Similar studies need to be done in the private and proprietary school sectors. Thousands of American Montessori schools are non-public. Understanding how these schools manage curriculum and the attitudes and feelings of their staff could be an additional important study or studies.

To really gain insight into the implementation and management of curriculum in Montessori schools, future research is needed in other levels of Montessori, beyond elementary school. This includes the early childhood (age 2.5-6) and the secondary (age 12-18) levels. In that way a real knowledge of Montessori curriculum management could be developed.

All Montessori schools use certified Montessori teachers from one of the many TEPs. An important research project would be to ascertain the approach and materials that the TEPs are using with respect to curriculum. As a part of this study or studies, the albums of the various courses could be compared and contrasted in an attempt to find what elements are universal.

On a parallel research track, it is essential to understand how schools with written curriculum documents use them. Simply adopting a document is not sufficient to qualify as a management system. An implementation and evaluation plan is needed as well. How schools are doing this, or if they are doing it could be the subject of additional vital research.

Finally, action research is needed, beginning with the development of Montessori curricula and monitoring their installation in Montessori schools. The creation of model curricula would involve tremendous research and development efforts, even before the curriculum were to be implemented.

Conclusions

There are presently over 200 American school districts, which offer a Montessori school choice in one or more of their schools. This study began by questioning how public Montessori schools define and manage their curriculum. It examined the Montessori viewpoint of curriculum, to determine if there was a unified or single point of view. It sought to determine if there were generally accepted written curricula for Montessori schools at the elementary level, or if there is any widely accepted scope or sequence.

The findings revealed that only a small percentage of public Montessori schools in Minnesota and Wisconsin have written curriculum documents. They are not all consistent and may not all contain scope and sequence.

Schools without written documentation use a variety of methods, such as teacher meetings, to reach consistency among classrooms, but many state that it does not work or that consistency is not a goal.

Even with only a few schools utilizing written curriculum documentation, the majority of respondents in this study supported written curricula. They also believe in having standards for lessons for each grade or level, believe that a written curriculum can assist in evaluation and think that it would strengthen their schools.

With so many public Montessori schools established across this country, it seems incumbent upon schools to begin to document their curriculum practices. As an outcome, this would lead to better communication of aims and goals with stakeholders as well as with regulatory agencies.

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APPENDIXES

APPENDIX A

Montessori teacher education programs

APPENDIX A

This is a list of all 30 Montessori teacher education programs (TEPs) affiliated with the American Montessori Society, as of January 2007.

1. ATLANTA MONTESSORI TEACHER EDUCATION PROGRAM
488 Hurt Road, Smyrna, GA 30082
770-434-5931
2. BARRY UNIVERSITY MONTESSORI TEACHER EDUCATION PROGRAM
11300 NE 2nd Avenue, Miami Shores, FL 33161-6695
305-899-3736
3. CENTER FOR CONTEMPORARY MONTESSORI PROGRAMS
College of St. Catherine
2004 Randolph Avenue, Mail #4100, St. Paul, MN 55105
651-690-6001
4. CENTER FOR MONTESSORI TEACHER EDUCATION/ NEW YORK
785 Mamaroneck Avenue, White Plains, NY 10605
914-948-2501
5. CENTER FOR MONTESSORI TEACHER EDUCATION/ NORTH CAROLINA
179 D'Ango Circle, Angier, NC 27501
919-639-8688
6. CHAMINADE UNIVERSITY OF HONOLULU MONTESSORI TEP
3140 Waiialae Avenue, Honolulu, HI 96816-1578
808-739-4679
7. COLUMBUS MONTESSORI CENTER - COMET
933 Hamlet Street, Columbus, OH 43201
614-291-8601

8. DALLAS MONTESSORI TEACHER PROGRAMS
5705 Winding Woods, Dallas, TX 75227
214-388-0091
9. FLORIDA INSTITUTE OF MONTESSORI STUDIES
1240 Banana River Drive, Indian Harbour Beach, FL 32937
407-779-0031
10. HOUSTON MONTESSORI CENTER
7807 Long Point Rd., Houston, TX 77055
713-465-7670
11. INSTITUTE FOR ADVANCED MONTESSORI STUDIES
13500 Layhill Road, Silver Spring, MD 20906
301-576-2866
12. IOWA MONTESSORI TRAINING CENTER
6713 Washington Avenue, Des Moines, IA 50322
515-278-7042
13. MAITLAND MONTESSORI SCHOOL TEP
200 North Swoope Avenue, Maitland, Florida 32751
(407) 628-0019
14. MICHIGAN MONTESSORI TEACHER EDUCATION CENTER
1263 South Adams Road, Rochester Hills, MI 48309
248-375-2800
15. MID-AMERICA MONTESSORI TEACHERS TRAINING INSTITUTE
10730 Pacific Street, Suite 234, Omaha, NE 68114
402-393-1311
16. MIDWEST MONTESSORI TEACHER TRAINING CENTER
926 Noyes Street, Evanston, IL 60201
847-276-0405 or 847-276-0404

17. MONTESSORI EDUCATION CENTER OF THE ROCKIES
4745 Walnut Street, Boulder, CO 80301
303-494-3002
18. MONTESSORI EDUCATION INSTITUTE OF THE PACIFIC
NORTHWEST
13965 NE 166th St., Woodinville WA 98072
425-486-5092
19. MONTESSORI OPPORTUNITIES, INC.
2381 Plymouth Lane, Cuyahoga Falls, OH 44221
330-962-4727
20. MONTESSORI TEACHER EDUCATION CENTER/ SAN FRANCISCO
BAY AREA
16492 Foothill Boulevard, San Leandro, CA 94578-2107
510-278-1115
21. MONTESSORI TEACHER TRAINING INSTITUTE OF SOUTH
CAROLINA
207 Pendleton Road, Clemson, SC 29631-2206
864-654-4483
22. MONTESSORI TEACHERS COLLEGE OF SAN DIEGO
4544 Pocahontas Ave., San Diego, CA 92117
(858) 270-9350
23. MONTESSORI WESTERN TEACHER TRAINING PROGRAM
5658 Belgrave, Garden Grove, CA 92845
714-897-3833
24. OKLAHOMA CITY UNIVERSITY MONTESSORI TEACHER
EDUCATION PROGRAM
2501 North Blackwelder, Oklahoma City, OK 73106
405-521-5372

25. PRINCETON CENTER FOR TEACHER EDUCATION
487 Cherry Valley Road, Princeton, NJ 08540
609-924-4594 or 1-800-924-4166
26. SEACOAST CENTER FOR EDUCATION, INC.
146 High Street, Greenland, NH 03840
603-772-0181
27. ST. MARY'S COLLEGE MONTESSORI TEACHER TRAINING
PROGRAM
P.O. Box 4350, Moraga, CA 94575
925-631-4700
28. SUMMIT MONTESSORI TEACHER TRAINING INSTITUTE
3881 N.W. 3rd Avenue, Boca Raton, FL 33431
954-584-3466
29. VANCOUVER TRAINING INSTITUTE MONTESSORI PROGRAM
1580 West Broadway, Vancouver, B.C., V6J 5K8 Canada
604-713-4500
30. XAVIER UNIVERSITY MONTESSORI TEP
3800 Victory Parkway, Cincinnati, OH 45207-6631
513-745-3424

APPENDIX B

Public Montessori elementary schools in Minnesota and Wisconsin.

APPENDIX B

This is a listing of all of the public Montessori elementary schools in Minnesota and Wisconsin. These schools are the schools that were invited to participate in the survey.

Minnesota Schools

1. Armatage Community & Montessori School
2501 W. 56th St.
Minneapolis, MN 55410
(612) 668-3180
2. Ben Franklin School
1801 9th Av. SE
Rochester, MN 55904
(507) 328-3300
3. Bluffview Montessori School
1321 Gilmore Av.
Winona, MN 55987
(507) 452-2807
4. Central Montessori Elementary School
200 SW 4th St.
Forest Lake, MN 55025
(651) 982-3150
5. Crossroads Elementary School
543 Front Av.
St. Paul, MN 55117
(651) 767-8540

6. J. J. Hill Montessori Magnet School
998 Selby Av.
St. Paul, MN 55104
(651) 293-8720
7. LaCrescent Montessori Academy
28 S. Oak St.
LaCrescent, MN 55947-1332
(507) 895-4054
8. New Discoveries Montessori Academy
PO Box 305
Hutchinson, MN 55350
(320) 234-6362
9. Nokomis Montessori School
985 Ruth St.
St. Paul, MN 55119
(651) 293-8857
10. Park View Montessori-Bryn Mawr School
252 Upton Av. S.
Minneapolis, MN 55405
(612) 668-2540
11. Seward Montessori School
2309 28th Av. S.
Minneapolis, MN 55406
(612) 668-4950
12. Swan River Montessori
PO Box 876
Monticello, MN 55362

(763) 271-7926

13. Washington Elementary School
338 Main St. E.
Owatonna, MN 55060
(507) 444-8300
14. World Learner School of Chaska
112050 Hundertmark Rd.
500 Maple St.
Chaska, MN 55318
(952) 368-7398

Wisconsin Schools

1. Alliance Charter Elementary School
215 E. Forest Av.
Neenah, WI 54956
Phone: (920) 751-6970
2. Appleton Public Montessori Elementary School
2725 E. Forest St.
Appleton, WI 54915
(920) 832-6265
3. Chippewa Valley Montessori
400 Cameron Street
Eau Claire, WI 54703
Phone: (715) 852-6952
4. Cooper School
249 Conkey St.
Burlington, WI 53105

Phone: (262) 763-0180

5. Coulee Montessori
1307 Hayes St.
La Crosse WI 54603
Phone: (608) 789-7760
6. Craig Montessori School
7667 W. Congress Street
Milwaukee, WI 53278
Phone: (414) 393-4200
7. Downtown Montessori Academy
2507 S. Graham St
Milwaukee, WI 53207
Phone: (414) 744-6005
8. Edward A. MacDowell Montessori School
1706 W. Highland Blvd.
Milwaukee, WI 53233
Phone: (414) 935-1400
9. Fernwood Montessori School
3239 S. Pennsylvania Ave.
Milwaukee, WI 53207
Phone: (414) 294-1300
10. Highland Community School
3030 W. Highland Blvd.
Milwaukee, WI 53208
Phone: (414) 342-1412

11. Lakeview Montessori School
711 Pine St.
Sparta, WI 54656
Phone: (608) 269-8133

12. Maryland Avenue Montessori
2418 N. Maryland Ave.
Milwaukee, WI 53211
Phone: (414) 906-4800

13. River Falls Public Montessori Academy
211 N. Fremont
River Falls, WI 54022
Phone: (715) 425-7645 ext: 2001 or (715) 425-1819

14. Wausau Area Montessori Charter School
3101 N. 13th St
Wausau, WI 54403-2317
(715) 261-0795

APPENDIX C

Essential elements of successful Montessori schools in the public sector.



Essential Elements of Successful Montessori Schools in the Public Sector

Montessori Teachers

- Employ Montessori teachers who have Montessori credentials for the levels they teach.
- Maintain an active and open recruitment for Montessori credentialed teachers.
- Budget for future Montessori teacher education for non Montessori-credentialed teachers.
- Provide professional Montessori in-service by experienced credentialed Montessori educators.
- Contract for on-going internal and periodic external Montessori consultation and/or professional support as a follow up to Montessori teacher education.
- Employ one paraprofessional per classroom, each having received Montessori orientation for that role.

Administration

- Employ an experienced Montessori teacher to serve as curriculum coordinator.
- Employ a building principal/educational leader who has knowledge of Montessori principles and curriculum through Montessori coursework, Montessori Administrator Credential and annual conference exposure.
- Maintain commitment to the core Montessori curriculum and instruction even with changes in administrative staff.
- Sustain the support of the central administration through high profile communications about program development.
- Recognize that the best implementation process is to begin with the 3-6 age group and add one age at a time for a gradual progression.

Recruitment/Parent Education

- Provide Montessori parent education programs that promote understanding of Montessori principles and curriculum.
- Develop an admission process that informs parents about the nature of Montessori and seeks the necessary commitment to the program.

Curriculum/Environment

- Offer a full complement of Montessori materials (about \$25,000 per classroom) purchased from Montessori dealers.
- Develop a classroom design that is compatible with Montessori "prepared environment" principles.
- Create uninterrupted daily work periods of 90 minutes to 3-hours, considering the 3-hour work cycle as ideal.
- Integrate specialty programs (music, art, physical education, etc.) around the uninterrupted work periods.
- Apply the appropriate multi-age groupings: 3-6, 6-9, 9-12, 12-15, necessary for the diversity, flexibility, and reduced competition integral to Montessori.

Assessment

- Use a process of reporting student progress that is compatible with Montessori and includes parent conferences and authentic assessment tools such as observation, portfolio, performance assessment with rubric, etc.
- Implement state mandated assessments in such a way that the character of the Montessori program is not compromised.

Professional Development

- Budget for continuing education through Montessori workshops and conferences.
- Maintain membership with one or more of the professional Montessori organizations and seek Montessori accreditation to assure consistent quality.

Endorsed by the following organizations:

American Montessori Society (AMS)

Association Montessori Internationale (AMI)

Center for Contemporary Montessori Programs

North American Montessori Teachers' Association (NAMTA)

National Center for Montessori Education (NCME)

Montessori Education Programs International (MEPI)

Southwestern Montessori Training Center

APPENDIX D

First Contact Letter

Michael J. Dorer
1358 Keston St.
St. Paul, MN 55108
651-353-2109
mjdorer@stkate.edu

March 7, 2007

[Recipient Name]
[Recipient School]
[Address]
[City, State Zip]

Dear [Recipient Name]

I am Michael Dorer, a Montessori teacher and trainer in St. Paul, MN. I am presently doing research on Montessori school practices as a part of my doctoral studies at Argosy University/Twin Cities.

I am writing to request your help with this important project. I am conducting a survey of all public elementary Montessori schools in Minnesota to ask about their management and use of Montessori curriculum.

You were selected to be part of this project because you are a Montessori school principal or head in a Minnesota or Wisconsin public school. I know that this is a busy time of year for you, but I hope that you will take just a little time to participate in this brief survey. Your answers will be completely anonymous. Your participation would be strictly voluntary, and you will be free to withdraw at any time.

In addition to surveying all school principals or heads, I will also want to survey your elementary teachers. I would be grateful if you would inform the elementary teachers and invite them to participate as well

In the next few days, I will be telephoning you to discuss the survey and answer any questions that you may have. I will then send you and your participating teachers an email link to the survey. There will be nothing to mail and no pencils or paper will be used. The survey is entirely electronic.

If you have any questions, please feel free to e-mail me at mjdorer@stkate.edu or call me at 651-353-2109. You may also write to my advisor, Dr. David Lange at dlange@argosyu.edu

Sincerely,

Michael J. Dorer

APPENDIX E

Survey Instrument.

Montessori School Survey

[Exit this survey >>](#)

I. Introduction

Hello,

I am Michael Dorer, a Montessori teacher and trainer in St. Paul, MN. I am presently doing research on Montessori school practices as a part of my doctoral studies at Argosy University/Twin Cities. This research study has been reviewed and certified by the Institutional Review Board of Argosy University – Twin Cities.

This survey has been developed to gain information about Montessori curriculum and how it is managed in Minnesota and Wisconsin public schools and to better understand and report on the state of written, overt Montessori-specific curriculum in public schools. The survey is being distributed to all of the public and public charter Montessori elementary schools in Minnesota and Wisconsin.

The goal of this project is to understand how public Montessori elementary schools manage curriculum. Your input is vital to the successful completion of this project. I am seeking responses both from school heads and from Montessori elementary teachers. Please forward this survey to the school's Montessori elementary teachers.

All answers will be anonymous. Your anonymity will be preserved by the survey management company (SurveyMonkey) that will collate the data. Your participation is strictly voluntary, and you are free to withdraw at any time.

You should be able to complete this survey in ten to fifteen minutes. There will be nothing to mail and no pencils or paper will be used. It is entirely electronic.

For the purposes of this research, the term "written curriculum" means a written school document, specific to Montessori, which contains some or all of the following: scope, sequence, content, materials, and grade or age level outcomes.

Thank you very much for agreeing to participate in this study. Completing the survey constitutes permission to use the data.

If you are interested in the findings from this research, please send me an email at mjdorer@stkate.edu I will be happy to send you a summary.

If you have any questions, please feel free to e-mail me at mjdorer@stkate.edu or my advisor, Dr. David Lange at dlange@argosyu.edu

Thank you for your participation

Michael Dorer

Researcher Contact Information:
Michael Dorer, Ed. S.
651-353-2109
mjdorer@stkate.edu

Dr. David A. Lange, Faculty Supervisor.
Chair, Graduate School of Education, Argosy University, Twin Cities,
1515 Central Parkway, Eagan, MN 55121.
651.846.3373
dlange@argosyu.edu

Just click "Next" to get started with the survey.

Next >>

Montessori School Survey[Exit this survey >>](#)**II. Demographic**

Please provide us with some background information.

Please note that this survey sets new questions based upon your earlier answers. Do not worry if it skips to a higher numbered question.

1. What is your position in the school?

- Principal or School head.
- Montessori coordinator or curriculum director.
- Lower elementary Montessori teacher.
- Upper elementary Montessori teacher.
- Other (please specify)

[<< Prev](#)[Next >>](#)

Montessori School Survey[Exit this survey >>](#)**2. Please indicate the number of Montessori elementary classrooms in your school.**

Lower elementary (6-9)	<input type="text"/>
Upper elementary (9-12)	<input type="text"/>
Full elementary (6-12)	<input type="text"/>
K-1	<input type="text"/>
2-3	<input type="text"/>
4-5	<input type="text"/>
6	<input type="text"/>
Other (describe)	<input type="text"/>

3. What is your school enrollment at each level? Please write the number of students at each specified age level.

Below age 3.

Ages 3-6.

Ages 6-9.

Ages 9-12.

Over age 12.

4. Where is your school located?

- Seven county Metro area in Minnesota.
- Greater Minnesota.
- Wisconsin.

5. Please indicate the type of school organization for your school.

- Regular public school, whole building.
- Regular public school, partly Montessori (school within a school).
- Public charter school, whole building.
- Public charter school, located within a larger school.
- Other (please specify)

Montessori School Survey[Exit this survey >>](#)**III. Montessori Credentials**

6. Please indicate your Montessori credential(s), if held. You may check all that apply.

- AMS Early Childhood (ages 2.5-6).
- AMI Primary (ages 2.5-6).
- Other Early Childhood or Primary (ages 2.5-6).
- AMS Elementary I (ages 2.5-6)).
- AMS Elementary I -II (ages 6-12).
- AMI Elementary (ages 6-12).
- Other Elementary.
- Administrators.
- No Montessori credential.
- Other Montessori Credential(s) (please specify)

[<< Prev](#)[Next >>](#)

Montessori School Survey[Exit this survey >>](#)**IV. Curriculum**

Please let us know how Montessori elementary curriculum is organized in your school.

In some schools, there may be a school-wide written Montessori curriculum, which drives instruction.

In other Montessori schools, teachers are expected to follow their albums in terms of sequence and organization.

A third model is that some Montessori teachers follow the expressed interests or wishes of children rather than any prescribed sequence.

A fourth possibility is that teachers are expected to follow a state or district curriculum, which is not a Montessori document.

In some cases, the school policy is to follow the district curriculum but modify it with Montessori lessons.

Some schools may have no accepted curriculum management plan; teachers may do as they choose.

**7. How is Montessori curriculum managed in your school's elementary level program?
Please choose only one answer.**

- Our school has a written Montessori curriculum document, which we follow.
- Teachers may follow their Montessori albums independently.
- Teachers may follow the interests of children.
- There is a district (non-Montessori) curriculum, which we follow.
- We follow the district (non-Montessori) curriculum, but modify it with Montessori lessons.
- We do not have an accepted system of curriculum management.

[<< Prev](#)[Next >>](#)

Montessori School Survey[Exit this survey >>](#)

Untitled Page

8. If you answered that your school uses a written Montessori curriculum document, then please indicate what elements are present in the written curriculum. Check all that apply.

- Content
- Scope.
- Sequence.
- Aims or outcomes.
- Materials.
- Philosophy statements
- Other (please specify)

9. Some Montessori schools have clearly defined age or grade level expectations for presenting lessons. In your curriculum document is there an expectation that certain lessons will be presented to specific age groups?

- Yes, there are expectations for each year.
- There are age expectations but only for lower elementary or upper elementary, not for each year.
- No, there are no age or grade expectations.

10. If there are grade level expectations, please describe how they are used.

11. If your school uses a written Montessori curriculum document, please indicate what age or grade level(s) are included. Check all boxes that apply.

- First Year (Grade 1)
- Second Year (Grade 2)
- Third Year (Grade 3)
- Fourth Year (Grade 4)
- Fifth Year (Grade 5)

Sixth Year (Grade 6)

12. If your school uses a written Montessori-specific curriculum document, please indicate what subject area(s) are included. Please check all boxes that apply.

- Arithmetic (Math)
- Biology/Science
- Geography
- Geometry
- History
- Language/Reading/Literature/Grammar
- Art
- Music
- Physical Education
- Other (please specify)

[<< Prev](#)

[Next >>](#)

Montessori School Survey[Exit this survey >>](#)

13. If your school does not follow a written Montessori curriculum document, how does your school guarantee consistency in all classes at a given level?

[<< Prev](#)[Next >>](#)

Montessori School Survey[Exit this survey >>](#)**V. Opinions and Reflections**

14. How important is it for a Montessori school to have a written curriculum document?

- Very important.
 Somewhat important.
 Somewhat unimportant.
 Very unimportant.

15. Please explain your answer to question 14. Why do you believe as you do?

16. How important is it that all classrooms at a given level offer children the same lessons?

- Very important
 Somewhat important
 Not very important
 Very unimportant

17. Please explain your answer to question 16. Why do you believe as you do?

18. Is it educationally valuable to the teachers of upper elementary classes to know that particular lessons have been offered to children in the preceding level?

- Yes, it is very valuable
 It is somewhat valuable
 It is not very valuable
 It has no value

19. What value would a written curriculum document have in the evaluation of students?

- It would be very valuable or clarifying.
- It would be somewhat valuable or clarifying.
- It would be of little value.
- It would be harmful or confusing.

20. Would a written Montessori-specific curriculum document support Montessori education in your school?

- Yes, a written curriculum would be or is a strong support for Montessori education in my school.
- A written curriculum would or does support Montessori education in my school.
- A written curriculum may conflict with Montessori education in my school.
- No, a written curriculum will definitely conflict with Montessori education in my school.

21. Please explain your answer to question 20. Why do you believe as you do?

[<< Prev](#) [Next >>](#)

Montessori School Survey[Exit this survey >>](#)**Thank you!**

Thank you very much. I appreciate your feedback. This research will lead to better understanding of Montessori school practices. Thanks again!

Michael Dorer[<< Prev](#)[Done >>](#)

APPENDIX F

Email Contact Letter

Hello,

I am Michael Dorer, a Montessori teacher and trainer in St. Paul, MN. As you know, I am presently doing research on Montessori school practices as a part of my doctoral studies at Argosy University/Twin Cities.

To participate in the survey, please simply click on the following link. Your answers will be anonymous.

<http://www.surveymonkey.com/s.asp?u=654272742240>

If clicking does not work, please copy and paste the address into your browser.

You should be able to complete this survey in ten to fifteen minutes. There will be nothing to mail and no pencils or paper will be used. It is entirely electronic.

I am also hoping to get survey responses from all of the elementary teachers working at your Montessori school, regardless of their training. I would appreciate it if you could help by forwarding this link along with your support to your elementary level teachers. This survey is for elementary people only and does not include Children's House or Kindergarten teachers.

Please let them know that the survey is entirely anonymous for them as well.

Thank you very much for agreeing to participate in this study. Your participation is strictly voluntary, and you are free to withdraw at any time. Completing the survey constitutes permission to use the data.

If you have any questions, please feel free to e-mail me at mjdorer@stkate.edu or my advisor, Dr. David Lange at dlange@argosyu.edu

Thank you for your participation

Michael Dorer

PS Please answer as soon as possible. Thanks!

Researcher Contact Information:

Michael Dorer

651-353-2109

mjdorer@stkate.edu

APPENDIX G

Email Follow-Up Letter: Reminder to Respond to the Survey.

Dear Friends,

Good morning!

I do hope that I am not bothering you. I am writing (again) to remind you to fill out the Montessori survey and to say THANK YOU if you already did so. Because it is anonymous, I do not know who has completed a survey – I hope that you have!

Please also remind your staff to fill it out. I have 32 responses now and hope to get about 60-70. I hope that they will all participate. Remember that it is open to all elementary Montessori staff.

Just in case you need it, here is the link again.

<http://www.surveymonkey.com/s.asp?u=555913485774>

Thank you for your help.

Sincerely,

Michael Dorer

APPENDIX H

Final Email Letter to Participants

Thank you for your participation in the Online Montessori Curriculum Survey.

Dear Fellow Montessorians,

To all of you and your staff who took the time to respond to this survey - thank you! I am very grateful to you for participating in this survey on Montessori curriculum practices. Your input is very valuable. Please pass along my thanks to your staff.

This survey will be used as a tool to help to better understand how public Montessori schools in Minnesota and Wisconsin manage their Montessori curriculum. Without your assistance, a better understanding of the organization of Montessori curriculum in Minnesota and Wisconsin public schools would not have been possible.

With over 75 responses to the survey and many valuable comments, you have contributed to an important discussion of this issue. If you are interested in the results, please send me an email at mjdorer@stkate.edu in early June. I will have the data analysis completed by that time and will have a summary written.

Again, thank you for your help, time, and feedback.

Very truly yours,

Michael Dorer

P.S. I am officially closing the survey at midnight on Tuesday, March 27, 2007. After that time, no further responses will be available through the link. If anyone still needs to respond please go the link at <http://www.surveymonkey.com/s.asp?u=654272742240> before that time.

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