Montessori on the Move:
A case study of the Montessori pedagogical instructional principles and
Implications for community college course graduates and their career paths

By

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DISSERTATION

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DEDICATION

This dissertation is dedicated to my family, my life partner and husband Edward F. Condon and to our children, Margaret Maddy Condon-Lorenz and Timothy A. Condon-Lorenz, for their understanding and patience in my pursuit of this degree. I also extend a most gracious dedication to the thousands of students and families I have worked with over some 30 years of educational experience. I express my gratitude to the children and families in Montessori education, both in the private and public sectors. Finally, I dedicate this research to the adult students and graduates of the college classrooms, each and every Montessori colleague including Karen Lecy, M.Ed., who inspired me to become a Montessori educator, and finally to the broader community for their invaluable input and training. With this guidance and experiential learning, the legacy of Dr. Maria Montessori’s philosophy lives on in education.
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A Case Study

ABSTRACT

This case study focuses on the Montessori instructional pedagogical principles with
implications about community college student’s success when the researcher in the higher
education classroom uses these principles. Two classes are studied while the interviews are based
on former students' invitations. The interviews involve graduates and ask about the practices
used, and whether they have any relationship of greater use across future educational course
work, graduation, and into career paths. Findings suggest the use of the Montessori instructional
pedagogical principles in community college classrooms can have lasting impact into the further
education and careers of students who experience this type of pedagogy and practice.
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PROLOGUE

Background and Role of the Researcher

As a tenured Professor of education in the community college system, the researcher shares his interests, contributions, accomplishments, and projected goals as a professional in teacher education. Included across more than 30 years of educational experiences in Montessori pedagogical principles, the researcher has also developed leadership skills in business supervision, and management. These abilities include classroom teaching in Montessori environments for young children and directing a teacher education training certification program for these types of teachers. As an administrator, he formed, owned, and operated a for-profit and non-profit organization, which followed six Montessori infants through middle school programs. These schools were affiliated and accredited. In 2000, The researcher became a co-founder of a Montessori charter public school and, and is currently a board member of a Montessori charter public school regionally in the area. In all, these sites for learning serve over 2,500 students, Transitional Kindergarten-8th grade in the public school arena. They offer a multi-disciplinary approach using Montessori educational programs covering multiple subjects in early childhood, and Kindergarten through 8th grade. The researcher’s exposure to the public school system eventually led him to an Educational Consultant position, monitoring early education preschool state contracts. In his current role as a professor of Early Childhood and Elementary Pre-service teacher education as well as administrative duties as the college's Staff Resource Coordinator, the Montessori methodology directly and fully informs his contributions to the field of higher education.
Teaching, Learning, and Research Interests at the Community College

Humanistic development and Montessori pedagogical instructional principles are at the root of my instruction, teaching, and learning as a college professor. The researcher’s training and credentialing across these educational disciplines have included Montessori teacher certification at the infant, early childhood, and elementary 6-12 year old credential levels. The national growth and development of Montessori education has inspired him to bring these values into the higher education levels being taught. They have also enriched his practice by incorporating current research within the disciplines of his educational pedagogy. The researcher’s practices are not merely based on one specific protocol comprised of either the American Montessori Society (AMS) or the Association Montessori Internationale (AMI) alone, nor should it be perceived as some Montessori “sort of” approach.

Moreover, Howard Gardner’s multiple intelligence theoretical learning style concepts are blended into my instructional practice. These well-intentioned concepts have compelled him to incorporate his learning styles which themselves are based on being models that offer relatively simple and accessible methods to understand and explain the ways different people learn. These concepts and tools are aids in understanding the overall personality and styles of learning which fit with what people are learning and how it’s taught (Gardner, 1993). Together, Gardner’s Multiple Intelligences connect across the Montessori philosophy because of how the researcher links the learning styles with the Montessori principles of instruction. Furthermore, the cognitive domains of Benjamin Bloom’s taxonomy of thinking become the metrics for how to think about what’s being learned across the learning styles. Finally, with respect to Montessori’s pedagogy of instruction, precisely Gardner’s approach to how students learn the material, Benjamin Bloom’s taxonomy of cognitive objectives are embedded to incorporate the essentials of...
executive function in the basics of knowledge, application, and assessment/evaluation.

Interestingly, at the outset, Bloom believed that education should focus on mastery of subjects and the promotion of higher forms of thinking rather than utilitarian ways of transferring facts (Bloom, 1956). Hence, the author’s research study is centered in these practices that involve contextualizing experiences in community college student’s course dynamics across early education, elementary school, and pre-service teacher education program content, and health and social science majors. This teaching and learning integrates these developmental practices within the courses being studied and the teaching pedagogies being used. Of the variety of approaches, the Montessori system has helped the author to teach the content to students in higher education by connecting the theory of coursework with contextualizing its connection with career practice after graduation. Ultimately, this enhancement promoted the author’s interest to study engagement and course completion across students in these community college classes as they affect the graduates’ career paths.

The author’s past experience in early childhood education fostered an interest to broaden the understanding of Child Development in order to prepare college students for life skills into adulthood. The instructional practices and methodology of Dr. Maria Montessori’s work, in both the private and public sector and across the physical, emotional, social, and cognitive disciplines, have allowed the author to be successful in his career and strengthen student’s access and success in teaching and learning at the community college level. This research study addresses Dr. Maria Montessori’s pedagogical principles of instruction as adapted to adult learning (Sykes 2006). Paulo Freire’s socio-cultural teachings (Freire, 2005) are also at the root of this research study. Specifically, his work highlights how the author facilitates student engagement as a method of Montessori’s philosophy in teaching the coursework. Together these pedagogies help
the course's guidance of the students to increase their participation (Freire 2005). His work inspires a social and cultural lens addressing the development between the interests of Montessori, the instructional styles in the community college classroom, and the student’s ability to increase their participation in the learning environment, which builds on student participation and completion. Building a collaborative model between Montessori’s instructional pedagogies in the community college classroom and Freire’s perspectives of social political and cultural foundations supports student participation (McLaren, 2005). Student participation may create an opportunity for the students to experience reflexively how they learn and integrate these pedagogical principles of participation and student completion into their career path and work force.
CHAPTER 1

The focus of this case study addresses the use of Montessori pedagogical instructional principles implemented in the community college classroom. Shankland (2009) claims, “The classroom is the central location where students gather to pursue their college education”. Furthermore, a differentiation is made here between the pedagogy of teaching children --the didactic, traditional, and teacher-directed approaches of instruction-- and that of andragogy which has advanced over the past 30 years to encompass the delivery of building upon values of ideas and concepts in education through a more independent way of thinking in adult learning (Knowles, 1984). The andragogical model as conceived by Knowles is predicated on four basic assumptions about learners all of which have some relationship to our notions about a learner's ability, need, and desire to take responsibility for learning:

1. Their self-concept moves from dependency to independency or self-directedness.
2. They accumulate a reservoir of experiences that can be used as a basis on which to build learning.
3. Their readiness to learn becomes increasingly associated with the developmental tasks of social roles as they move beyond graduation and into their career paths.
4. Their time and curricular perspectives change from postponed to immediacy of application and from subject-centeredness to performance-centeredness within an organization (1980, pp. 44-45).

Faculty in community college that makes good use of student participation empower student learners to demonstrate and interact with the theoretical material content of a course. Using these
approaches enable students to process and draw applied conclusions, which develop meaningful understanding about their learning. Veltri (2006) wrote, “It has been said that the visual environment affects an individual’s ability to perceive visual stimuli and affects both mental attitude and performance.” The face-to-face classroom environment is where the students predominantly learn to apply the theoretical content being taught into the practice of their lives including their career paths and work places (Gruenewald, 2000).

The classroom also becomes more than an intellectual place; it becomes a space for human development including the social, emotional, and physical growth that occurs throughout the life span. Therefore, it is important to note that instructional quality and physical environment together are crucial partners in obtaining strong student learning where student-learning styles such as the Montessori developmental characteristics are identified and practiced. In order for the content of a course to have meaning, the student must feel and experience an invitation to participate (Kester, 2009). This participation is based on how the material is organized and sequenced within the environment (Keller, 2002). It also requires the ability to balance delicately the environment and instructional quality to the needs of the student, which can result in higher student participation. Therefore, when the physical, social, and emotional needs in the environment are respected, faculty and students participate together successfully (Gruenewald, 2000).

These researchers are highlighted based on their concern that standardization of instruction focused on direct instructional practice compliments only the linguistic and auditory style of learning. This style can limit the student’s participation and reinforce passive learning. In turn, this can lead to poor performance and low student success. If these direct instructional types exist across the implementation of coursework in the college classroom, then outcomes across
the vast range of courses offered can produce inconsistent results in student performance and completion (Baker, 2002). Because of a growing awareness of the negative impact of multiple levels of remedial courses on certificate and degree completion with similar instruction, there is considerable interest in community college programs looking at approaches that create student participation and completion (Navarro, 2009).

**The Statement of the Problem**

Colleges struggle to recognize the mediating role instructor’s play in the production of building social contextual value in learning (Freire, 2005). In part, the educational, instructional practices taught in the college environment could lead to stronger student outcomes (Gruenewald, 2000). Evidence shows outcomes about completion and graduation are also in question based merely on using more traditional styles of instruction (Navarro, 2009). The purpose of this study explores the Montessori pedagogical principles in practice with community college students. The focus is on the use of Montessori’s pedagogical instructional principles as practices with students on how they approach participation, utilize multiple modalities of learning, and implications about how these approaches to teaching and learning assist in contextualizing the curriculum to a higher value and relevance for overall student success. Additionally, this research of teaching and learning, based on the use of the Montessori pedagogical principles, addresses whether problem-based experiences across the content those students are learning are reported to have an effect after graduation and into their career.

This case study explores whether evidence of these developmental practices exists in every day and work place job roles of the students who experience them in their community college courses. In order to examine and assess these practices, a focus group of graduates were
interviewed. This research offers implications about the Montessori pedagogical instructional principles and developmental characteristics of student teaching and learning for participation and successful college completion as well as into selected career paths.

The Purpose and Significance of the Study

The purpose and significance of this research examines the use of Montessori pedagogical principles and contextual learning with implications for community college student participation, completion, and principle application into their careers. The author inquires, through the interview process, whether or not the use of the principles has lasting impact upon the subjects’ chosen career paths after their community college experience. Furthermore, how do graduates utilize these principles in their careers paths?

The goal of the study is to identify institutional classroom practices that go beyond lecturing in a classroom. This study examines how project-based and student-centered pedagogical practices taught using these principles could enhance student learning and affect careers outside the community college experience. One of the primary responsibilities in working with students in the community college classroom is to nurture and enhance the development of the creative mind and to expand the learning environment beyond lecture-based content to assist and expand critical thinking (O’Shaughnessy, 2008). What happens in the classroom is integral to student completion and impacts their ability to recognize that learning can differ across settings. The teacher’s pedagogical practice can have a long-term effect on the design of quality-learning environments that impact the overall life of the graduate as their careers are realized.
The study’s broader goal is to find connections between community college teaching and learning in pursuit of implementing these practices for the student into course academic progress and to assist career achievement upon graduation. The study examines the educational experiences that make a significant difference to student participation and successful completion into the graduates’ careers. The practices and developmental characteristics of the Montessori pedagogical methods, when embedded in a project-based and student-centered classroom, have the opportunity to offer graduates a chance to demonstrate a stronger entrance into their careers (Cottom, 1996). Therefore, the study examines whether graduates who were exposed to these principles and milestones as community college students are guided to practice the seven principles specifically in completing their education and into their careers. Hence, the significance of the study can be profound if the subjects are using the principles in their other college experiences and current career paths. This study has the opportunity to foster a learning environment much more like the Montessori practices than the most prevalent mode of lecture-based instruction. Thus, using multiple modalities can strengthen student teaching and learning in the community college environment (Lockhorst, 2010).

The Importance of the Course Context

The early education and family studies courses offered at the local community college are human development based classes preparing pre-service educators, behavioral and social science, and health services individuals in higher educational learning. These courses are primarily required to obtain a degree in any of the following majors: Early Childhood, Education or Behavior and Social Science. These majors are for students who are transferring to a four-year institution to earn a bachelors degree in Child Development, Liberal Studies, Sociology,
Psychology, or health services such as Nursing or Pre-Medicine. These courses prepare students by reviewing the sociological and life span principles regarding culture, race, and ethnicity of students in the learning classroom. They are fundamental requirements that examine such issues as environmental influences in school and how teachers and peers may influence his/her learning as one moves into adulthood. These courses also explore family attitudes, beliefs, and engagement regarding growth and development. Within the college community, these courses specifically address gender, media, sexual orientation, social class, race, ethnicity, and the special needs spectrum. The relationship schools play in support of these social roles, experiences of individuals, and how family involvement and engagement becomes important for growth and development can be called upon by students and their training in a given career path.

These critical resources regarding pedagogical, instructional practices and environmental preparation are necessary skills for pre-service teaching individuals and other industry candidates entering into the work force. The relationships between these two skills are supported when these developmental characteristics are a part of the college classroom.

The Importance of Student Context

Students in community college are the focal point of this study. They are single, partnered, married, working, or full-time students. The majority of the students have accomplished their education through the public school system in traditional learning environments. The context for this study addresses whether the exchange between the teacher’s pedagogical instructional styles increases learning and how the students who respond with these developmental characteristics transition into their career paths.
Research Questions

A study of the use and later effects of the Montessori pedagogical instructional principles could add value to the research on quality instructional teaching in the community college. These practices may stimulate and empower student participation, engagement, and stronger completion and practice into their career paths. In light of circumstances surrounding student remediation and completion rates, the exploration and discovery of instructional practices include project-based and student-centered experiences in learning addressing the following questions:

Chart 1

Research Questions

<table>
<thead>
<tr>
<th>As a graduate of the community college course:</th>
<th>As graduates of the community college course moving on in careers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>“When subjects completed a course at the community college wherein the Montessori pedagogical instructional practices were employed, what evidence was offered through interviews with the subjects that these Montessori principles had lasting impact as they completed their education?”</td>
<td>“Do community college subjects find a useful connection between experiencing the implementation of Montessori pedagogical instructional practices in a higher education classroom and their chosen career paths? If so, what is that connection?”</td>
</tr>
</tbody>
</table>
Limitations of the Study

The purpose of this study is to examine and shed light upon the connections between community college teachings, using a Montessori pedagogical approach, and its effect upon student completion and career path integration. The major limitations of the study include the following:

The findings are limited to the data of only those graduates taught by one professor at the community college. Further studies should be conducted with other instructors who utilize the Montessori pedagogical instructional principles and/or other methodological practices to explore the course completion, graduation, and connections to careers in other community colleges within other student populations.

The study is based on the assumption that the instructor came from an accredited Montessori teacher education program and has teaching experience using the methodology. Furthermore, it is assumed evidence exists that the subjects in the interviews experienced his pedagogical instruction.
Definition of Terms

The following definitions are used in the study:

Classroom Development of the student learning- Planes of Growth into Adulthood- It is the hope and objective of the learning environment that as the students transform their learning through the use of these guiding principles that a change in the thinking and reasoning promotes positive change in the relationship of how we look to education as a way to expand our mind set (O’Shaughnessy, 2008).

Curriculum is the formal approved college curriculum and what is taught. Individual and Group Participation Rubric- The intention of sharing this information is to heighten awareness about individual and group classroom participation and discussion. The level name introduces the area of interest as we experience a social, face-to-face interaction with one another concerning content and course materials. The “A,B,C” graded equivalent columns provide students with areas of performance with respect to reaching, teaching, and learning in such a way as to implement them fully across all developmental categories of the course and into career paths with fellow students in subsequent courses and with colleagues in career paths.

Instruction refers to the pedagogical principles of Dr. Maria Montessori as a basis for teaching curriculum.

Learning styles are defined in relationship to how students learn the material. The material is offered in multiple ways for purposes of reaching the student’s individual learning style.

Pedagogical Instructional Practices- The instruction of the professor implemented using the seven principles of the Montessori methodology.

Academic Progress is defined as students who pass courses and advance through his/her coursework from one semester to the completion of his/her degree.

Retention means completion of a course in which the student originally enrolled. Student Achievement- The goals and objectives outlined for a given course offering.

Student Academic Progress and Course Completion refers to major completion with a passing grade or better.

Teaching and Learning is the interaction in the learning environment between the curriculum, students, and styles of delivery.
Chapter 2

Review of the Literature

The foundations of our education optimally combine traditional instruction and its coverage of the history and philosophy of the subject matter. It is the sociology of education that contends with the time and space for multicultural education to become integrated into the whole life education (Gonzales, 2005). This is where the student’s prior knowledge can become influential to the wide diversity in the classroom and how it affects learning. In addition to blending these important perspectives, the inter-relationship between the history and structure of the American education system, the changing nature of the teaching profession, and the socio-cultural factors influencing the adult learner become important.

The author considers foundational themes from a critical theory perspective, such as Dr. Maria Montessori and Dr. Paulo Freire, as cornerstones provide a strong base to the suppositions. Often, student learners lack the basic understanding of why inequities exist in today's schools. They are unaware of the historical events that put a system in place and are not empowered with strategies to address these issues once they experience them in the work force (Ruenzel, 1997). Therefore, by providing students with this important background information, the goal of the instructor is to enable participants to fulfill his or her potential with this skill set.

Examples of these characteristics may include how students participate in the course objectives. This includes how large and small group discussions expand learning. By introducing case studies that promote problem-solving potentials versus merely text reading, these instructional practices and student developmental characteristics can begin to work together to produce stronger achievement across the course as well as provide implications to the value they
hold for teachers in increasing student participation and completion into their careers based on how a course is taught and learned.

The process of using technology builds a contextual alignment with the student’s personal reality and could have positive effects on the learning when it is integrated with the role of the teacher (TAMIM 2011). Multimedia and guest presentations, field trips, and demonstrations are also a part of the in-class activities. Matriculating from the teacher preparation programs to the classroom, the college students are ready to expand, enrich, and deepen their teaching knowledge and skill through collegial reflection as well as continued instruction and study (Lovo, Cavazos, & Simmons, 2006). Students are encouraged to apply theory and research presented in the text to scenarios and into their personal lives as they see themselves as educators in their field of interest.

Students use their critical thinking skills to determine which theories are applicable in these different sociological situations and how to apply them with their school populations. Therefore, based on the potential to use these multi-pedagogical approaches, students are compared and analyzed against other students receiving minimally only lecture style formats. With regard to graduates of the child, family and community and the life span development courses, they varied due to methodological linguistic styles of lecture-based instruction versus a project-based and student-centered approach using varied and multi-sensory instructional qualities. Currently, student achievements vary and are inconsistent for classes that do not use project-based or student-centered pedagogies.
The Scholarly Approach of Teaching and Learning

The scholarly approach of teaching and learning practices can help identify teachers who are doing well or who are struggling (Duncan, 2009). Consequently, teachers can better meet the needs of students as these learners become citizens in their career paths. This partnership in revolutionizing schools must occur everywhere. Dr. Paulo Freire's work on the “Liberation Education” is the dynamic that involves social engineering as the conception of human society. A minority of educational theorists should not determine it. The human community must decide (Martin 2009, 10-03). The perfect time is now; a sense of ownership about exemplifying the importance of teacher preparation is what students need, so as they grow, they experience the opportunity to participate effectively and contribute to our citizenry.

Contextualized Learning in Community College

These multidisciplinary pedagogical practices enable and empower college students to become competent in the goals and objectives established for these courses. Thus, the influence that the environment has in student learning can have positive and long-term effects on both the outcomes of students and the human resources of the personnel modeling when these attitudes and beliefs exist in the educational setting. Based on today’s critical need to revolutionize education along with addressing the achievement gap, it is apparent a part of the calculation of improvement in community college learning environments could occur with the design of the school environment; how students learn in them; and most importantly, how the teachers are trained to teach about student learning.

The identity and training of the educator is embedded in the environment (Cossentino, 2006). Teachers across a spectrum, spanning early education through high school, specifically
receive extensive training tied to the curriculum models chosen as well as instruction in implementing developmentally appropriate and performance-based assessments of learning (Mead, 2009). However, in the college setting and because higher education professionals become experts in content areas, issues related to student learning across these course areas have posed questions of accountability to student success and completion in college.

Government and higher education have become more conscious of the educational environment, which may extend our notions of pedagogy and accountability connecting to andragogy in higher education student learning. Thus, instructional pedagogy in the community college classroom becomes more relevant in connecting the ideas to the lived experience of students, and accountability is re-conceptualized. The whole person learns from the training the teacher has experienced. Additionally then, the entire environment, both physically and mentally, matter to educators, students, and citizens in tangible ways (Gruenewald, 2000). The college instructional practices must follow the students. Progress is observed from preschool through college instructional outcomes and into careers.

"People with strong body/kinesthetic intelligence process information and express themselves through their bodies, muscles, movements, or senses. Their bodies are avenues to learning and understanding any content or subject. These people are sensitive and attentive to environmental comfort such as temperature, lighting, and body comfort; these elements greatly impact their ability to focus and learn.

If this is one of your strong intelligences, then you teach from your strong intelligence using body/kinesthetic strategies. For example, you are mindful when setting up the learning environment to consider body comfort, making sure there is adequate space for each person at tables, and frequently provide ‘body breaks’ by having people stretch, get up, and do standing
group activities, such as discussions and recording on flip charts on the wall, rather than staying seated. You provide materials for participants to use independently during your sessions, with the purpose of providing something for them to do with their hands, helping them focus and stay engaged." (Hine, 2014)

**Dr. Maria Montessori’s Methodological Historical Overview**

The theoretical framework of Dr. Maria Montessori’s humanistic work informs a theory in teaching and learning. There are other instructional practices with a more teacher directed approach. One such approach, demonstrated through a longitudinal study “Unveiling Professional Development: A Critical Review of Stage Models”, (Dall’Alba 2006), suggests when student participation is employed as a part of instruction (versus only teacher directed or lecture-based instruction) key assets to student outcomes and integration to their education and career path potential imply increased student participation. In light of these student outcomes and student participation, the work of Dr. Paulo Freire exemplifies the other base that demonstrates the social construct of how culture and society affect the cognition of the individual for political purposes and societal gain. More importantly in this case, using these approaches, the college instructor or professor can seek out the power surge of the learning over the student. Assimilation between the two theories informs this research case study.

**Defining the Montessori Methodology Implementation**

In the early 20th century, the Italian physician-educator Maria Montessori (1870-1952) created the Montessori Method of self-paced learning for children. The Montessori Method has influenced the modern-day development of alternative-education programs (Gettman, 1987). In
reaction to systems of teaching that require physical compulsion to gain a child's attention, Maria Montessori's development of this philosophy, in Italy in 1907, is an educational system that uses a set of didactic materials to arouse and/or entice the child's spontaneous interest, producing a natural concentration on Montessori tasks that do not tire or annoy the child (Standing, 1957). Children in Montessori schools are free to move about the classroom from one set of materials to another in an environment prepared with auto-educative, multi-sensory, and manipulative learning devices for language, math, science, and practical living. These concepts are known through the relativity of the Cosmic Education approach.

Montessori education evolves initially at the early childhood ages, from 3-6, although there are many training programs that offer the teachings for the infant and toddler child. It emphasizes the early learning of reading and writing with children schooled by the method often learning to read and write before the age of five. Pupils of different ages typically are grouped together in a three-year age mix--such as 3 to 6, 6 to 9, and 9 to 12 years. For example, they learn by manipulating objects such as vertical, horizontal, and oblique lines made of textured materials and by fitting cylinders of various thicknesses into holes in a block. The teacher serves as an observer and catalyst. Self-motivated and individualized learning are at the core of the method and strive to develop self-discipline and self-confidence.

Specifically during the elementary years, Montessori's approach encompasses the "whole to the part to the whole" theory. This "Cosmic Education" approach is the basis of Montessori's pedagogy. It concentrates with the core subjects of language, mathematics, and geometry while interacting with these core subjects throughout the teachings of botany, the study of the plant; zoology, the study of animals; geography, the study of the earth, land, and water; and history, the study of the era, ages, and our universe.
Montessori's research is extensive in relationship to the absorbent mind. At the 6-12 stages, they leave that era entering what she calls the "Intellectual Period" (Lillard, 1996). The children's appetite for knowledge is immense. They are not satisfied with bits and pieces of isolated information, this part to write a report for that part to memorize and reproduce for a test. They want to grasp the "whole of knowledge". Montessori wrote that in this period "All other factors sink into insignificance beside the importance of feeding the hungry intelligence and opening vast field of knowledge to eager exploration" (Standing, 1957). This is the cosmic education theory. It involves the child taking in knowledge that increases the intellectual ability of the thought process of critical thinking and deductive reasoning. The result of the cosmic education for the children is a development of gratitude for the universe and their lives within it. They form awareness that they have received many gifts from human beings whom they will never see or know (Lillard, 1996).

The final component leading to the successful implementation of the Cosmic Education theories for the children is freedom along with the capacity for accepting responsibility (Lillard, 1996). Such examples of these aptitudes include a wider vision toward building impressions from previously experienced didactic materials. Furthermore, the psychological presentation, or the "Great Lesson," becomes a medium by which the elementary teacher is able to build from the whole to the part and back to the whole again. The children have observed touched, and explored the simple and concrete and are now ready for the building tools toward the creative aspect of constructing new information from the whole. Structure within limits along with time management provides the motivation toward product evaluation especially for the 6-9 year-old student. These responsibilities lending toward freedom can be stated in a Bill of Rights for the elementary classroom:
- To act by oneself and for oneself
- To act without unnecessary help or interruption
- To work and to concentrate
- To act within limits which are determined by the environment and the group
- To construct one’s own potential by one’s own efforts

The elementary teacher takes special care avoiding the violation of these freedoms and thus assists the children in meeting the responsibilities, which they engender (Lillard, 1996).

Although Montessori based her method on the early work of the French physician and teacher Jean Itard and psychiatrist Edouard Seguin for the purpose of teaching and learning with children, the value of these methodologies are questioned as to their purpose into adulthood. Expounded in the Montessori Method (1909; English translation, 1912,) it has been used in thousands of schools around the world and in recent decades has been in use in some U.S. public schools. The first U.S. public Montessori school was opened in Cincinnati, Ohio in 1975, and public schools offering Montessori programs now range in the hundreds including the author’s co-founding of a charter Montessori in the Sacramento region. Teacher training in the Montessori Method is offered through oversight of standards set forth by Maria Montessori in 1929 and range across international and national U.S. organizations. The Montessori Accreditation Council for Teacher Education (MACTE) now governs these organizations along with many others, which accredit Montessori teaching institutions to practice the teaching methods of Dr. Montessori through agreed upon standards and criteria for instruction and curriculum, including the Cosmic Education method. The question once again is, how might these attributes of the Montessori methodology be examined in adulthood whether an adult is a
Montessori student or not? This study will look at students in the community college classroom and across a varied set of career paths.

Therefore, as these educational qualities allow for the mind of the child to grow exponentially, the methodology has the potential to offer the adult mind these same attributes. The incorporation of these principles into adult learning may have a direct relationship on student teaching and learning in ways that may increase participation and completion. Hence, the value of Montessori pedagogical instructional principles can be linked as an alternative methodology in adult community college courses.

**The Montessori Pedagogical Principles of Instruction and Developmental Milestones**

College classroom lectures primarily focus on course objectives and tend to minimize inquiry-based learning (Dall'Alba 2006). As inquiry based learning theory proposes, student-centered learning and project-based approaches can expand learning beyond the community college classroom (Martin 2009). Therefore, the use of the Montessori pedagogical principles of instruction as tenets to student learning will act as the theoretical framework of this study. The rationale in using this theory is to demonstrate how social influences affect academic learning. Can the training of Montessori socialization processes and influences be instructed to insure a student’s learning objectives could be met? Could a set of developmental characteristics in students improve their educational learning? These practices, such as student-centered learning and project-based assignments under the influence of these teaching practices and student characteristics, become factors offering students an opportunity to experience the value of instruction in the community college classroom. These practices may affect students' successful completion and use of the practices across their career paths.
The Use of Montessori to construct an Environment that Promotes Deductive Reasoning and Thinking in the Community College Classroom

Comprehending the matrix of the mind and how it works is a phenomenal undertaking. As the system of education transforms students from young children, imagination and creative intuition play a very mystical role in children’s daily school experience. Dr. Montessori evolved this methodological system over one hundred years ago, and it still causes great confusion with regard to the concepts of how children think in order to distinguish between truth and reality. According to the four planes of development within the pedagogy of Montessori’s methods, scientific factors play a fantastic role in the development of the child and imagination (AMI, 1971). It is in these elements that this research study asks the question of the college student: What are the deductive reasoning skills needed to succeed and strengthen student success and course completion based on instructional styles across the college?

It is within the first plane of Montessori’s absorbent mind that specific sensitive periods of development begin characterizing the personality and temperaments of the individual. As the student moves from the stages of total dependency on the teacher to that of independence across the curriculum content, the basic ideals of the social, emotional, and physical developmental qualities are what spark the very core of this development. It is believed through the methodology of Montessori’s perspective that all things must first be true and concrete in childhood (Standing, 1957). If this is true, then how might these developmental characteristics offer the college student with a path of academic progress as they participate in their education? In order for the reality of the experience to be beneficial, the student must be offered the content through the use of the senses; in other words, the availability of the didactic material offers
students the opportunity to explore the truth about reality convergent, factual, and through the senses (Montessori, M., (Clarement translation) 1967).

Using the Montessori methodology, the prepared environment is organized through the researcher’s role model and the ideal awareness of the developmental patterns particular to meeting the needs of the student; therefore, the adults in the environment service them. Once the foundation of the classroom is prepared for the student, observation is warranted upon his/her activities within the perimeter of the class structure. The student works through the initial reading while the author links the class with the content for purposes of studying its personal and professional connections. Scientifically, it is predicted that in order for the student to grasp basic concepts of reality that the environment must meet these basic requirements. It must be founded with support, bonds, and attachment for rituals within the schedules, repetition, and predictability. Once the normalization process evolves, through regularity, many new and sensitive periods of interest unfold in the classroom. The teacher’s role is to continue empowering the children toward autonomy and self-gratification through their own sense of accomplishment (Montessori, M., (Clarement translation) 1967). This accomplishment occurs through increased initiative and the will to succeed. Furthermore, the efforts observed in this simple and concrete environment promote more advanced systems to develop.

At this point, the culmination of the social/emotional, physical, and cognitive developmental traits begin merging together to form new patterns of recognition and interests toward more advanced systems noted as the “Intellectual Period” (Montessori, M., (Clarement translation) 1967). It is then the ideal time to begin promoting more diverse systems of thought and the process of critical thinking skills, including deductive reasoning, problem solving, and decision making. According to Montessori’s theories, plane one has advanced to the highest
potential in the child and can be demonstrated equitably for the adult learner as well.

Cumulatively, the foundation of knowledge has been formed, and the student is well on the way toward the divergence, which Montessori speaks of with regard to imagination.

While, it is critically identified amongst common educators that Montessori has a weak link with regard to the knowledge of the developmental process of today’s student; on the contrary; the foundation of knowledge has been structured with absolute conviction. The student has had many opportunities to develop capable strategies with concern to the core subjects being taught. These subjects are experienced through the seamless curriculum of the “Cosmic Education” theories of Maria Montessori similar to her teaching while in India (Standing, 1957).

Finally, as the methodologies of Montessori are defined, what qualities of character, conscientiousness, attitude, and behavior do we want for community college students in an effort to model access, a student-centered approach, participation in their own education, and strengthened student completion, graduation, and career path implementation? Among the most important, respect and love demonstrate a strength in service to fellow classmates and ultimately and ideally to the community and career. The challenge of this effort is to stimulate the concepts of honesty and open communication. It is often said, “the fool remembers the experiences but forgets the lesson while the wise person focuses on the experiences yet remembers the lesson.” Developmentally, the student is gaining a sense about self-identity that enables the learner to begin reaching out socially to the community toward civic duties and volunteering for the very purpose of gaining experience in deductive reasoning and decision making effort affecting an organization or small group of individuals across the career path and work force (Standing, 1957).
Conclusively, Montessori’s multi-sensory developmental approach allows the isolation of each developmental quality to be presented both visually and auditorially based on the individual student’s interest and abilities. The procedures introduced through the structure of Montessori are seen as a way of enhancing attention and increasing self-discipline and self-direction. The Montessori principles also enhance order, organization, and work cycle. Using these concepts of Montessori as a medium for the entrance into the period of development known as the “Intellectual Period” offers students with the diversification of knowledge of the whole life preparation and perspective (Seldin, 1997).

The intention of integrating the use of the Montessori pedagogical principles is to develop support for dedicated educators while providing guidance in the establishing of values and fundamental principles upon which Maria Montessori based her philosophy throughout the elementary years for adult use and success. The same principles that pertain to children’s education need to be applied whenever possible to adults.

Montessori's concern for freedom of choice throughout the four planes of development is emphasized through care and nurturance at all levels. It is guided by a deep respect for the individual development of the whole student as a human being and contributor to society. While using the Montessori teaching methodology, opportunities for open-ended discussion may encourage thinking skills on the part of the educator, as well as on the community college student. Individually selected projects will provide examples of methods used to implement the freedom of choice within the structured and imaginative program content.

Because Montessori emphasized the active participation of the learner, is there reciprocity to the student to experience this phase of the “Cosmic Theory” to become well applied into adulthood? Montessori felt the process of development was much more important
than the end product. Therefore, this literary work attempts to provide an atmosphere of understanding and comprehension with regard to how the implementation of this program works with community college students as they participate in their education to achieve a career and enter the workforce. Methods used to measure these beliefs include closely-supervised surveys and small-group, cohort learning communities of current students and graduates across education, health, and social services.

The objective for the researcher is the ability to demonstrate knowledge of Montessori philosophy, theory, and methodology. Included in this process is the ability to inquire and demonstrate theoretical knowledge of pertinent research findings in the field of human development and how it relates with college students as they succeed in courses, graduate, and enter their careers. The insights and skills needed to facilitate the individual needs of the students are the expectation of this literary work as it attempts to secure a greater understanding of the philosophy of Dr. Maria Montessori and her pedagogical principles of instruction across the fields of education, health, and social services as this researcher uses these teachings as way to determine if they are applicable in the college environment.

**Seven Pedagogical Principles of the Montessori Philosophy used as Instructional Principles in the Community College Classroom**

The value of the preceding information sets the stage for the community college student to gain access and participate in an environment that is enriched with the promise to share prior knowledge. In this way, learning becomes linked with the current trends and issues facing our careers and work lives; hence, the value of social/cultural learning becomes the lens (Freire, 2005). In order to create success in learning, the following seven principles are guides to the
researchers’ professional conduct that seeks to promote eventual changes in how the students participate in their own education (Montessori, 1967).

**Chart 2**

**The Seven Pedagogical Montessori Philosophical Instructional Practices**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respect for the student</td>
<td>The ability to balance the learning between content and trusting in the student’s prior funds of knowledge</td>
</tr>
<tr>
<td>The absorbent mind</td>
<td>The ability to absorb, apply, and analyze basic knowledge</td>
</tr>
<tr>
<td>The Prepared Environment</td>
<td>The physical space is vital in offering student-centered engagement</td>
</tr>
<tr>
<td>The process of Normalization</td>
<td>Creating trust in building the relationship</td>
</tr>
<tr>
<td>The Sensitive periods</td>
<td>Based on trust in the relationship, an awareness that development of knowledge increases as the student applies critical thinking such as problem-solving and decision-making</td>
</tr>
<tr>
<td>Role of the Teacher</td>
<td>The role is to come prepared with content and demonstrate flexibility regarding the needs of the students as they will build the contextual value; meaning erupts</td>
</tr>
<tr>
<td>Role of the student in adult learning</td>
<td>Defined by the ability to fulfill the role of teacher in carrying out leadership of skills learned and teaching or practicing them such as in the “learning and/or work environment”.</td>
</tr>
</tbody>
</table>

(Montessori, 1967)

These seven pedagogical principles taught by the research imply that when the content is organized and carried out in these ways across the adult classroom (using different learning styles that relate to individual) students have the opportunity to promote multiple outcomes.

In this case study, the questions allow for an examination as to whether project-based and student-centered Montessori pedagogical classroom strategies employed at the community college level allow subjects to relate the principals to their new environments and career paths when they are later questioned. The center of this study is whether or not the combination of instructional pedagogies in early childhood pre-service training for the child’s classroom
prepares college students to become effective when implementing these developmental characteristics in their educational environment and careers.

As a part of this study, the researcher measured the outcomes of instructional effectiveness in a Sociology course and a Psychology life span course. Student interviews provided the feedback regarding the success of the project-based and student-centered assignments. The student activities that the students engaged in were offered in a prepared physical space where connections between the critical observations of hands-on learning in the classroom as well as contextual connections to the personal life of the student and the content being learned could take place. In this way, the classroom is the central location where students gather to pursue their college education. Unless students choose online or distance learning, the face-to-face environment in the classroom is where the students predominantly learn to apply theory to practice effectively. Thus, the classroom specifically is reliant upon what teachers learned as students and how effectively they teach (Dall’Alba 2006). Future teachers solidify the significance of the theory presented in the classroom and hopefully will bring to life the practices they learned when they launch into their career. The classroom becomes more than an intellectual place; it becomes a place for human growth including the social, emotional, and physical growth throughout the life span (Keller, 2002). It is evident that in order for the content to have meaning, the student must feel an invitation to participate when the material is organized and sequenced within the environment where the teacher and the student participate together in a physical, social, and emotional places which breed’s cognitive energy.

It is the hope and objective of the learning environment, as the students transform their learning through the use of these guiding principles, that a change in the thinking and reasoning promotes positive change in the relationship of how we look to education as a way to expand our
mind-set across our higher education experience and career paths (O’Shaughnessy, 2008). Here are nine considerations of student success that graduates can experience concerning the use of the principles when applied to complete their education, and implement into their careers.

**Chart 3**

**The Nine Developmental Characteristics for Student Learners**

<table>
<thead>
<tr>
<th><strong>Large and extensive work</strong></th>
<th>Allows concept and size to be identified by peers and instructors as an important accomplishment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heightened Sense of Justice</strong></td>
<td>Defining and relating interpretations of justice (fairness) along with what is equitable (what a person needs as opposed to making sure that all people receive all things which not everyone needs). The hope and vision of the school is to create students that are self-reliant, just, fair, and cooperative citizens through a collaborative process.</td>
</tr>
<tr>
<td><strong>Hero Worship</strong></td>
<td>Admiration is ultimately organized through a level of balance across the life span. It is the classroom’s responsibility to prepare opportunities for students to become aware of heroes outside of our societal stereotypes such as sports stars or Hollywood’s entertainers who are more superficial. Such things as classical literary works allow students to look at characteristics that are far greater in quality like humanistic qualities of true heroism. Examples may be Robin Hood, Christopher Columbus, and the like. Ultimately, it is the hope that children and students develop the perspective that the quality of life is what one puts into it as well as see the authenticity of heroism through the efforts of what the ordinary, everyday has to offer.</td>
</tr>
<tr>
<td><strong>Herding instinct</strong></td>
<td>The feeling to follow someone for his or her traits. Becoming the follower versus taking a leadership role. How does one take on the role of being a leader? These values will be examined across the small group-learning cohorts.</td>
</tr>
</tbody>
</table>
Limitless capacity for learning

Making every opportunity a learning experience. Rather than limiting by way of “no”, “don’t”, “shouldn’t”, “can’t”, “won’t,” syndrome, provide a connection for the student to see freedom within limits. The syllabi are a guide.

We need to realize students do need time to absorb information.

New information- what is the process to transform basic knowledge into what can be applied, analyzed, synthesized, and evaluated with regard to what has been learned?

<table>
<thead>
<tr>
<th>Principle of rest</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is an important time when observation occurs. A time to absorb or gain a comfort level of the particular concept.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experimentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>This process becomes the point at which observation can detail or identify the appropriate need, such as supplies, or decisions about a given problem.</td>
</tr>
<tr>
<td>Research-based work needs to be fulfilled regarding much of the needs in these areas.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Going out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empowerment is important. Given the constraints upon some of our communities, we must, as educators and professionals alike, create opportunities whereby the students are able to participate in the society as independent thinkers and active life doers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Work of the student/small group cohort learning community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not do for the student what he/she can do for him/herself</td>
</tr>
<tr>
<td>Provide initial prompts. As the facilitator or guide initiates the foundation, the more the students become actively engaged in creating his/her own educational answers. Therefore, he/she receives less as far as materials and presentations on subject matter, for the students themselves are now generating the knowledge.</td>
</tr>
</tbody>
</table>

(Montessori, 1967)

Effective recruitment, selection, and hiring of faculty should result in the hiring of faculty who demonstrate teaching practices that manifest interest, motivation, and participation of
students who may promote these characteristics. The implication of hiring faculty who will utilize project-based and student-centered approaches can be powerful for student outcomes. Non-lectured-based exclusive teaching enables students to demonstrate an interaction with the material and can support students in gaining the ability to draw conclusions from the theory and develop meaningful understandings about their learning. “It has been said that the visual environment affects an individual's ability to perceive visual stimuli and affects both mental attitude and performance” (Veltri, 2006).

A reflection upon the organizational analysis of the human resource perspective in the college classroom today brings together a blend of professionals with many styles and methods that comprise the model environment. “School district and campus leadership have a strong obligation to define what effectiveness means and how effectiveness should be measured within the school setting in keeping with the intents of a school district and campus’ mission statement” (Young, I.P., 2008).

**Dr. Paulo Freire’s Socio-Cultural Political Influences for Student Educational Participation in Teaching and Learning**

Dr. Paulo Freire’s work in socio-cultural teaching examines the social context of the oppressed in third world countries. It reminds us about the hierarchy within the college system. This work illustrates a close resemblance to community college students based on these contextual values; and thus, it will contribute to this case study. Dr. Freire believes the modern education system damages students with its domestication of people through a ‘banking system’ of indoctrination involving received knowledge (Rait, 2009). Providing a rich environment is the backdrop to what today’s students need in building confidence. The framework of Dr. Freire’s
work allows this study to examine the foundations of the teacher as the cultural worker. This is an intriguing look between traditional roles and what Freire remarks as good teaching. Meanwhile, a look upon the values of Montessori’s method is in step with the teacher. Therefore, when the teacher uses the students as primary resources in and across the learning community, Montessori methodology promotes these pedagogical principles, which can demonstrate developmental characteristics of the student’s social influences and can assist in weaving dynamic learning into a system of traditional mastery where Freire says, “learning is not static” (Rait, 2009). The diplomacy between the social cultural values of Freire helps to blend the relationship of the teacher as learner and the student as teacher across the curriculum content.

The value of skill development learned in the college classroom directly relates to how a student participates in the learning experience. Dr. Paulo Freire’s work fosters the basis of importance concerning the socio-cultural connections. Students have to connect to the material being learned. “To wash one’s hand of the conflict between the powerful (the hierarchy and teacher) and the powerless (the student role) truly mean[s] to side with the powerful, and not be neutral” (Freire, 2000). When high quality learning promotes development, a sense of readiness across both teaching and learning approaches can help students to integrate new life skills of executive function from the educational institution and into their careers. The beliefs and practices of Freire and Montessori promote to the student what can become a practice in completing a course and/or their education. Freire’s work clearly qualifies these relationships by building connection between the learning environment and the value of how content is delivered. This case study looks at a way to revolutionize the higher education classroom based on techniques we learn in Kindergarten and use throughout our educational career.
“The kindergarten approach to learning is characterized by a spiraling cycle of imagination, creativity, play, sharing, and reflection. This approach is ideally suited to the needs of the 21st century education, helping learners develop the creative mind set along the developmental continuum. In turn, this builds thinking skills that are critical to success and satisfaction in today’s society” (Resnick, 2007).

In promoting the styles Resnick mentions above, the college professor has the opportunity to create a learning environment for the adult students across courses and coursework which exemplify the importance of how students can effectively learn and how to apply these skills into their career paths.

The Overarching Value of Montessori, Gardner, Bloom, and Freire’s Work to Students in the Community College

The educational and administrative leadership needed for operating in today’s higher education teaching and learning programs, require multi-dimensional people at the helm. A sincere effort has been incorporated into daily teaching and learning to assist students and pre-service employees gain from seeing how the Montessori pedagogical instructional principles can affect their community college classroom environment outcomes and success when entering a career.

Incorporating the Montessori methodologies with current standards of teaching and learning invites increased participation in the community college. It also provides the potential to produce high quality outcomes that exceed the current accrediting standards and broadly address the new Student Success Act recommendations for increasing student success completion rates. This work can help educators accumulate a set of practices in organizational leadership that can
continue to strengthen the academic disciplines in community colleges. They equally spread the practice of strengthening student participation and engagement as well. These skills become further developed in this case by the use and implementation of Gardner’s Multiple Learning Intelligences with learning style differences and addressing them in teaching content (Gardner, 1993). Additionally as stated in the prologue, the Montessori pedagogical instructional principles, coupled with recognizing Gardner’s theories of multiple intelligences, prompt higher levels of executive function with the use and integration of Bloom’s Taxonomy of Cognitive Thought Processes. The value of the basic cognitive domains of thought, according to Bloom, offers students a device to learn knowledge simply, apply it to a given circumstance, and evaluate its purpose and significance (Bloom, 1956). Given the amalgamation of these four systems, this case study promotes the implementation of strengthening student success in the higher education classroom. If so, this results in reinforcing graduates to practice these skills of observational and developmental techniques across careers as well (Shanker 1996).

The importance of strengthening student participation and increasing college graduates is paramount to this research study. The use of these practices in the community college classroom can promote success for students. In turn, these skills help prepare tomorrow’s graduates, and they might have implications for all work practices. Implementing these pedagogical principles of instruction through humanistic relational observation and collaborative interaction may breed greater success in student participation at many levels (DeLott Baker, 2009). Furthermore, students who experience these types of instructional styles have an opportunity to expand leadership in their own lives and develop new styles and trends of thinking about ways to learn. The utilization of multiple learning styles and critical thinking into practices can affect the work force in general (Shankland, Genolini et al. 2010). Equally, the belief is that school
accountability to teaching and learning offer the potential to further the vision of student participation in the classroom. Cumulatively, as teachers refine their teaching and learning approaches, they more greatly accomplish involving the students as participants in the classroom and reinforce a community of learners that can produce greater student success, thereby increasing completion and graduation.

Based on current experiences, can the strategic effort of the researcher’s implementation of the Montessori pedagogical principles reinforce student participation, successful completion, and have implications into the work place? Community college professors who teach to the senses can involve multiple modalities to improve instructional quality. Teachers across school programs who prepare learners from as early as preschool and elementary school years well into adulthood can be known to add to the quality of teaching and learning that becomes integrated in adulthood (D'Orio 1999). This skill-set supports collegial articulation across disciplines. These Montessori principles can offer and promote a readiness for learning, once again connecting to daily life. Therefore, the principals can become an instructional guide of the professor to understanding the implementation of the college student’s unique learning styles. Potentially, all professors could help one another to understand many content areas in a way that contextualizes the learning for the students (DeLott Baker, 2009). This research promotes the thought that student achievement, as a collaborative partner to advancing these said practices, could enhance the work place. The Montessori pedagogical principles may also align with student communication and become a collaborative partner to this modeling in community college. The skill-set available in today's community college classroom addresses ways that can support community college student access and participation in the learning environment. (Rule and Kyle, 2009). When enhancing the college environment with pedagogical styles, which alternately
stimulate student participation and interaction, the college classroom environment can increase access and promote higher participation due to perceived social supports and more in-depth relationships (Shankland and Genolini, et al. 2010).

The continuity of these newfound Montessori pedagogical instructional practices for the community college instructor has the opportunity to branch throughout the college system and offer long-standing potential to develop a foundation in the new realms of philosophical content and styles of instruction in teaching and learning. The Montessori pedagogical instructional practices highlighted have the opportunity to systematically expand across the United States with other innovative styles such as the flipped classroom (Mazur, 2011) and the open learning initiative (Wieman, 2012). Ideally, the presence of these instructional principles, in the forefront of the college classroom with these types of environments, could further develop trends across all divisions of education concerning student, collegial, and higher education development. The recognition of this research also promotes the current reform models in the United States Department of Education where these experiments are currently being studied at Harvard and Carnegie Mellon universities. Bringing these types of instructional practices forward as teaching and learning tools can demonstrate to state legislative levels about awareness of the Preschool through the two-year college (P-22) educational continuum. Hence, a revolutionary design for teaching and learning along with student academic progress in the community college system offers the potential to increase participation and completion rates.
Chapter 3

Methodology

This qualitative case study explored the lasting implications of Dr. Maria Montessori’s seven pedagogical principles of instruction as tools used in teaching the content of two community college courses in higher education taught by the researcher. In light of the community college’s low student success and completion rates (Kalb, 2014), the exploration and discovery of these Montessori pedagogical instructional practices focused on experiences that particularly interested the graduate to examine these principles about their own engagement across the class. Specifically, they concentrated around their perseverance to persist in the class, how these principles impacted their college completion, and (after graduation,) their use of these practices in their career path. The structure of open-ended interviews (Patton, 2002) was chosen as a means to pursue the research. The purposes of the interviews were designed to enable the graduates, as subjects in this study, to share their stories about these principles in their subsequent education and into their career paths. The research questions are:

Chart 1

Research Questions

<table>
<thead>
<tr>
<th>As a graduate of the community college course:</th>
<th>As graduates of the community college course moving on in careers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>“When subjects completed a course at the community college wherein the Montessori pedagogical instructional practices were employed, what evidence was offered through”</td>
<td>“Do community college subjects find a useful connection between experiencing the implementation of Montessori pedagogical instructional practices in a higher education”</td>
</tr>
</tbody>
</table>
In order to examine these practices, the interview protocol was created. The interviews were conducted based on Patton’s (2002) qualitative interviewing work, called “The Standardized Open-Ended Interview.” The interview consisted of three sets of questions. They addressed general information about the individual, their recall of the coursework, and, with a chart of the Montessori pedagogical principles, did they impact their experiences into their career path. The introductions identified the graduate and were chosen to help with personal connections in the classroom. The questions related to their general coursework experience identified the embedded instructional practices of the teaching subjects experienced. The third set of questions specifically related to the pedagogy of Dr. Maria Montessori and how they related as to the impact upon the graduate into their career paths (Appendix A).

**The Subjects (Graduates)**

In order to explore the impact and use of the Montessori pedagogical principles, the subjects were drawn from two courses the author taught. The subjects were graduates from the community college, and they completed one or the other of two courses. One course was a Psychology course, and the other was a Sociology course. It is noted that the courses were cross-listed across four different departments, Early Childhood/Liberal Studies, Sociology, Psychology, and Family Consumer Science (Family Studies). Hence, the graduates were from varying majors or degrees. All subjects were individuals who matriculated between 2012 and
2013 in the following disciplines: Social Science, Psychology, Health Science, Early Childhood Education, Elementary Liberal Studies, and Sociology. The subjects are now pursuing careers in social work, counseling, dental science, early childhood and elementary education, and health fields.

The author invited, via school e-mail, the eight graduates from the community college who took part in the two courses a part in the study. The author knew the graduates. All subjects volunteered freely to participate in an interview.

It is taken as a given for this research study the practices of the researcher was true to Montessori principles. These principles were employed as both part of the curriculum of the courses and the pedagogy used to teach the course. (Note: As stated previously, as the higher education instructor, the author is a certified and credentialed Montessori Teacher from a nationally recognized accrediting body.) The subjects were selected because of their career paths, the researcher knew them, they were willing to participate in the interview, and they could readily discuss the Montessori pedagogical instructional principles due to their passing grades in the aforementioned courses.

Each interview meeting was held at an agreed upon time and was between the former student and the researcher. The, approximate one-hour long, interviews were recorded and transcribed. The interview protocol can be found under instrumentation in the appendix “A.”

The Interview Process

The interviews protocol was designed to explore the Montessori pedagogical instructional principles employed across the courses and their potential effects later on in other educational pursuits. The questions were directed at the teachings and asked if the subjects thought the
principles were useful as tools with other fellow students in subsequent coursework, and/or within procedures across the graduate’s different courses and career paths. This study was based on the subjects’ recall of the principles in the coursework, and as tools supporting success in assignments and group work. Additionally, the study examined the “staying power” of these strategies for the subjects in subsequent pursuit of careers in a variety of fields. Recall and impact of the principles were measured by whether the graduate’s ability to map specific strategies to specific outcomes were, more or less, successful. In general, the questions asked: did the principles have some lasting effect on the individuals as applied in other coursework, and how might these strategies interact within their career paths?

Interviews were face-to-face. Subjects were asked to recall the Montessori pedagogical instructional principles. In addition, subjects were asked if these specific principles had a positive effect in the completion of their education and training and into career paths.

Essentially, the interview explored subjects’ viewpoints about whether or not the principles helped support success in the class in which they were introduced. Questions were also asked about attendance and participation as well as completion of assignments as a function of the principles. Finally, the author explored how the principles identified in the course might have been applied into their career paths (education, training, experience). The overarching questions related to how the subject integrated them in subsequent courses to complete college goals, and if the principles, in fact, could be practiced in the career path with co-workers and colleagues.

Specifically, the interviews addressed questions about the seven Montessori pedagogical principles and whether or not the graduates have practiced the principles in seeking and carrying out subsequent coursework and/or job roles and responsibilities within their respective career
paths. Patton, (2003), claims that inquiries similar to the ones the researcher used in questioning the use of the Montessori principles could provide qualitative data in determining links between the coursework participation, engagement, and assignments into the completion of their education and into their careers. The interview questions were appropriate for the population and purpose of the study. Given that Montessori pedagogical principles have been the foundation of early and elementary education for student engagement, was it plausible that similar results could occur in higher education if they were used in teaching at two and four year institutions?

Interviews were the main data of the study to understand better the thinking of the students who had experienced the principles. “The purpose of a research interview is first and foremost to gather data, not change people… Neither is a research interviewer a therapist. Staying focused on the purpose of the interview is critical to gathering high-quality data” (Patton, 2003). The interviews concluded by asking if the Montessori pedagogical instructional principles, across the course teachings, were productive with other fellow students in subsequent coursework, and/or within procedures across the graduate’s different courses and career paths. The following chart depicts the graduates and their major and career with pseudonyms:

### Chart 4

**Subjects Across Career Paths**

<table>
<thead>
<tr>
<th>Subject (Graduate) Pseudonyms</th>
<th>Major</th>
<th>Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valentine</td>
<td>Behavior and Social Science</td>
<td>Youth Counselor</td>
</tr>
<tr>
<td>Raquel</td>
<td>Administration and Justice</td>
<td>Rehabilitation Counselor</td>
</tr>
<tr>
<td>Roberta</td>
<td>Allied Health and Science</td>
<td>Nursing</td>
</tr>
</tbody>
</table>
Data from interviewing graduates formed the basis of this qualitative case study. It was hoped the graduates of these courses, wherein the Montessori principles were taught and employed, could provide evidence of the “staying power” of these strategies looking beyond the community college experience and into career paths. “It is known after coursework at the community college; there is value in the graduate’s success in the work place” (Berger, 1977).

Based on the study design, the following chart represents how the study was carried out including data collection, individual interview process, interview format and structure, interview questions, and data collection on how the Montessori pedagogical principles were used.

**Chart 5**

**Data Collection Procedures and Interview Process**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Informed Consent Statement was provided and signed</td>
</tr>
<tr>
<td>2</td>
<td>Each subject was given an explanation of the research and the purpose of the interview during an orientation meeting. Following the orientation, the individual interview began. The information conducted from the interview was recorded and transcribed. Anecdotal notes were also taken. The subjects were given a copy of the list of the principles at a specific point in the interview process. This was a design feature first allowing recall to take place,</td>
</tr>
</tbody>
</table>
and then helping the subjects to remember, in greater depth, exactly what the principles are. Later, the interviews were analyzed looking for patterns and themes (Patton, 2002, 417)

3 The subjects were thanked verbally, but no payment or remuneration was provided.

4 Upon completion of the dissertation, an invitational follow-up to all subjects with an executive summary report presentation will be provided.

The Data Analysis

Transcribed responses to the questions were analyzed, as were the notes taken during interviews. These data were analyzed looking for patterns and themes. In following the work of Gay, (2009), being organized and paying attention to the notes and to the transcriptions, patterns and themes became apparent.

Upon completion of the graduates’ interviews, their responses became the raw data. The information compiled was cumulatively analyzed into themes of similarities between the graduates and responses unique to each graduate. In this step, the researcher used a somewhat unorthodox approach called “Wordle”. It is a web-based tool that provides a visual representation of word descriptions contained in a piece of text, in this case, the three categories of each graduate’s responses. The researcher combined each graduates answers from each of these categories, used the web-based tool, and the outcome provided a manipulation into an arrangement of their words in a graphic form. The arrangements of the words (the graduate’s answers to the questions) are larger words for responses by the graduates in relation to the frequency of the words being used. The smaller words in the “Wordle” graphics were the results of unique individual responses.
Although this analysis was unconventional, it provided a novel picture of how the students responded to the Montessori pedagogical principles in the interview. “A consensus has gradually evolved the important challenge to capture appropriately questions and issues, and not to hold to any single methodological approach to all problems of analysis” (Patton, 2002). The responses of the students depicted in these “Wordles,” ultimately, allowed the researcher to analyze the data in such a way as to see emphasis in responses. By combining their more personal information with the coursework responses and their answers to the Montessori pedagogical instructional principles questions, data was analyzed. Consequently, the outcomes of these illustrations could help to provide, in the findings, areas of credibility and trustworthiness to the process of existing patterns that would lead to the results in the findings.
Chapter 4

Findings and Results of the Data

This qualitative case study originated because the author was curious about why student participation and completion in the community college system was low. Furthermore, as a Montessori-trained educator, the pedagogical instructional styles have been quoted in the review of the literature to have worked well with younger children. Therefore, this curiosity evolved to look at these Montessori principles being used in the higher education classroom with community college students. In using these principles and interviewing graduates, themes to their learning across the completion of the course and into career paths became apparent. A summation of the eight interviews was compiled. The practices ranged from student engagement to different ways of thinking. These elements were captured throughout the interviews as they related to Montessori’s pedagogy and how they participated and became engaged in the learning. The transcriptions of the interviews revealed connections between the Montessori principles in comparison with Howard Gardner’s multiple intelligences, Benjamin Bloom’s Cognitive domains, and Paulo Freire’s work on the socially oppressed as they related to learning and thinking style differences along with social involvement. Small group teaching and learning appeared to impact how their experiences affected the graduate’s connection of the Montessori practices with their career paths.

Given the Montessori’s principles were the foundations to the classroom design, these themes across the interviews certainly told the story. “The Montessori pedagogical instructional principles as the cornerstone to the guiding force of the teacher in relationship to the success of the student were what made it work” (Becca, 2014). In a very consistent pattern, respect for the
student was premier. The value of being individually respected fostered an interest to inquire and explore the content. Gardner’s multiple intelligences and Bloom’s domains of thinking styles assisted in formulating questions about the content which led the students to see application and synthesis as a method of understanding content with linkage to personal experiences. As mutual respect and relationship grew between the researcher’s use of the Montessori principles and students in the small groups across the classroom, more and more discussion ensued about how the content built connections with their personal lives and the common practices could then be analyzed in relationship to their career paths. The themes were:

- Mutual respect between the instructor (researcher) and the students who felt valued as learners.
- Personal ownership of the classroom environment made it a living environment.
- A courageous growth of personal sharing that other students valued and connected to the course content.
- A willingness among the student learners in the small groups to take responsibility for facilitating leadership skills of problem solving and decision making among the student learners to get the work done that led to graduating from the course.
- Social participation with one another expanded with an eventual realization of the importance of connecting the content with real life and its transformation to career paths.

Ultimately, the researcher’s use of the Montessori principles as a base to how the classroom was organized and structured led the student learners across a path to discover, as the content was introduced and explored, how the unique differences in learning and thinking styles of each other were leveraged. As the increase of purpose grew, the content built meaning for the
graduates and their respective career paths. In turn, Freire’s work evolved the perceptions to understand social participation based on respect could have far-reaching and beneficial results in both personal and professional influences. Consequently, what they began to further realize was the expansion of our human roles with one another was becoming intertwined, researcher and learner. “…Without a sense of identity, there can be no struggle…” (Freire, 2000).

With respect to the blending of these practices, the realization of engagement, academic progress, and participation led to a student’s successful completion of his/her coursework. It is known beyond the individual that examining the interaction between dimensions of the classroom context and an individual's beliefs and achievement can connect to careers (Young, A., 2003). As the classroom content was explored in the interview, it was valuable to incorporate the styles of learning instrument, reminding subjects of the content and material of the course allowing them to comment on how these attributes took hold in their careers or career training. As examples, such learning styles included a lecture-based or a linguistic approach, a visual or representative model illustrating what was being theorized, and finally, a tactile, or hands-on, element.

From the interviews, the graduates reported the Montessori practices stimulated their learning. These practices provided opportunities that related the theory being learned to the practice associated with the learning experiences. This condition was reported to be evident in the graduates’ life experience and hoped-for career path. Therefore, interviews provided data for the case study. The graduates across the interviews reported when the Montessori pedagogical practices were used that the students learned not only the content but also about themselves as learners. As the courses went on, the learning of the content connected with real practice to its contextual nature, and the students had more opportunities to engage in social practices which
could contribute to career success later. Cumulatively, the eight subjects interviewed mentioned the importance of the principles related well within their majors and career paths. The implication from the interviews is that the Montessori principles could create consistency among the students and their work, allowing them to achieve similar success as graduates applied to their careers. The following chart illustrates the subjects’ education and career paths.

**Chart 6**

**Graduates in Career Paths**

<table>
<thead>
<tr>
<th>Major</th>
<th>Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior and Social Science</td>
<td>Youth Counselor</td>
</tr>
<tr>
<td>Administration and Justice</td>
<td>Rehabilitation Counselor</td>
</tr>
<tr>
<td>Allied Health and Science</td>
<td>Nursing</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Dental Lab Technician</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td>Education Consultant</td>
</tr>
<tr>
<td>Psychology</td>
<td>Adolescent Middle School Counselor</td>
</tr>
<tr>
<td>Sociology</td>
<td>American Sign Language</td>
</tr>
<tr>
<td>Biology</td>
<td>Researcher</td>
</tr>
</tbody>
</table>

Based on the subject’s majors and career paths, the research questions were then used to verify the subjects experience in the respective courses and their interpretation of how they are using these practices in their careers.

In summarizing the subject interviews, the researcher used a software program called “Wordle.” The software transposed the oral and written words from the interview into the
following figures, which captured the graduate’s interview results. Therefore, “Wordle” qualitatively aggregated the graduate’s interview by configuring small or minimal feelings to large and bold statements that demonstrated high impact influences although the direction of the word played no part of the research. The larger the word the more often it was discussed and the greater role it played in the graduate’s completion of the course and integration into his/her career path. In the classroom, the assignments, subsequent classes, the completion of their education, and the success in their career paths were enhanced.

The following figures (1-9) provide evidence through “Wordle” illustrating the outcomes of the subject interviews. As the researcher captured these interviews, an illustration of the widespread access to learning multiple aspects of the content was realized. Each graduate was able to experience content delivery across the entire class, but through the value in wording across the entire illustration, the graduates experienced individualization in learning the material. These practices prompted engagement in the material which led to further inquiry about how these practices connected with personal experiences. Thus, the analytical ability grew in linking these illustrations of concepts with the importance to their career paths.

**Interview Results**

**Figure 1- Behavior and Social Science**

Interview Results: *(Valentine)*

“Ultimately, the role modeling was exemplary. There was an ongoing level of respect between the educator and my peers and this allowed all the details to unfold as I learned the content. I could inquire about them, discuss them with my peers and connect them to my career role with children. These experiences ultimately empowered the development of my leadership.
In turn, my leadership skills have become built upon these roles and when practiced in person, my professional growth evolves. Every good leader is a follower” (Valentine, 2014).

The affirmation of Valentine’s engagement in the class experience not only reinforces the importance of the researchers impact of the use of the Montessori principles, but it also certainly implies the value of holding a high level of respect for the student’s involvement as critical to career path integration. He goes on to add, “this course made it real for me. I learned I could promote these practices myself. I have built a better relationship with the kids I’m working with. They now have more respect for me when I don’t push them, but respect them; they push themselves to do better now” (Valentine, 2014). This confirms that the capacity to build relationship can transcend leadership.

Perhaps the most relevant area of Valentine’s interview was his interest as a youth counselor and care provider, seeking to meet other’s needs. The interview confirmed, based on the design of the class and instructional principles that recall of the course material had a major affect on him, both in completing his coursework as well as with his employer. Keeping everyone at the table informed starts early. “Be cautious about how you affect others, get to know their perspective, be neutral, and non-confrontational” (Valentine, 2014).
Specifically in his career, as a care provider, he related features of working as a team with children. Whether in counseling situations or when care providing in a one-on-one situation, always inform the patient and/or client the circumstances and ask for input and clarity when appropriate. “Be careful and tender of their opinions and always explain the how and why something is important” (Valentine, 2014). This certainly validates the Montessori instructional principles of role modeling and teacher as learner.

Figure 2- Administration and Justice

Interview Results: (Raquel)

“I adore [the] professor! He helped me to gain self-esteem and confidence in my learning capacity. I will finish school and when I do, I will invite him to the graduation!” (Raquel, 2014). What Raquel expressed happened for her through this course helped to build her ability to finish her other courses with a similar sense of self-esteem and confidence.

Although the coursework essentially required more work up front to understand the Montessori practices, as she understood them, the work both individually and in a small group setting actually became easier for her to complete. The reason for this was because, as students, we were working as a team. “While we were always focused on our individual learning, your reinforcement of our work in groups fostered our thinking in a way that would prompt us to analyze how we were thinking. You weren’t always at the front of the room. Sometimes you were in the back of the room. This fascinated me. As we shared our individual interpretations of the content, when we needed guidance on a topic, either with reinforcing the information or redirecting an area of content that needed more information, you provided it” (Raquel, 2014).
Through discussion around this topic, Raquel and the researcher further discussed that this concept of instruction was very different than in all other classes. This method excited her and enticed her to want to know more. “It strengthened my courage to ask a question and/or communicate an answer across the class as a whole”. (Raquel, 2014)

With regard to Raquel’s work in rehabilitative services, helping to support people in building their self-esteem is very important. These practices helped her to express this with her clients. “In turn, I feel more success in my work because I am confident to use this skill as I communicate with my client.” (Raquel, 2014)

**Figure 3- Allied Health & Science**

Interview Results: *(Roberta)*

In Roberta’s circumstances, information that led to becoming a nurse was very important to her. At every point of the course content, leadership in nursing was on her mind. “I truly appreciate Professor Lorenz’s style of connecting with the students. This class helped to transform my ambition of becoming a leader throughout my nursing program. The other students
and the hospital where I am doing my rotations strongly support me in my leadership. I am thankful I had this class” (Roberta, 2014).

For Roberta, her data specifically showed the influence of her role as a student within the role of the program, i.e., the small group. This interactive, ongoing, and small group met weekly to discuss the chapter topics with responsibility to provide views back to the entire class regarding interpretations about the information. “For me, this work allowed me to recognize the value of working as a team concerning patient care. We all must work together for the sake of the patient and be on the same page. This provided a basic understanding of using these principles in my own management skills” (Roberta, 2014).

The interview detailed that the course also had much to do with Roberta’s professional goals. It helped her to pursue the nursing program. “In my current floor rotation in cardiology,
we need to know the psychological maturation of the patient. In other words, to break through the ethnocentrism of the process of other people’s developmental way of thinking, whether it is for them created a right and wrong. In my goals it is about being professional and yet nurturing. This truly brings forth the value of social participation. To be a teacher and befriend the patient became all about my role as I came to understand the Montessori pedagogical principles of instruction” (Roberta, 2014).

Further in the interview, the exploration of the course pedagogy revealed a very specific point of Roberta’s role with patients. “Especially with teen patients, why they lash out or rebel in my pediatric rotation, it was beneficial to know the theoretical values of growth across these planes” (Roberta, 2014). This specifically raised the value of the implied principles to mean that knowing the content, given the styles of teaching, brought this patient relationship to fruition in ways that reached successful completion. Consequently, as stated, “the geriatric value and accomplishment patients could embrace, Maslow and Erickson’s theories, specifically having to do with my nursing interventions for older patients, gave way to the importance of the practices of the absorbent mind and the value of these sensitivities I learned about” (Roberta, 2014).

**Figure 4- Chemistry**

Interview Results: *(Carlton)*

“As a veteran, this class had particular interest to me. As I returned to school from the military, I was particularly in awe about how students were so unmotivated in their learning. Based on what I had experienced, I was very motivated to get the content, do the assignments, and move on” (Carlton, 2014). What Carlton expressed over his interview certainly addressed these expectations.
“The value this class taught me and actually assisted me to get into U.C. Davis for my undergraduate course work based on how I placed in my interview to the Chemistry program. With my interest in learning, becoming a dentist with a chemistry background has me very captivated. With Professor Lorenz as a support, I knew I could accomplish my goals” (Carlton, 2014). Through role-playing and working with the course materials (including class projects and student discussions) my learning was reinforced. “My main take away was how the content was structured. I liked the order” (Carlton, 2014).

As for Carlton’s other course work, highlighting the points using other styles of learning he had become acquainted with (including role-playing and/or the multiple styles of learning such as empathy and communication styles in discussions) became great examples to use in other classes. “These were practices I used with other students and when teachers weren’t aware of these learning styles for me as a student; listen as opposed to hearing” (Carlton, 2014).
The description of Carlton’s career management was validated for him, and he became a stronger person and professional for it; furthermore, the main subjects of the course, and how they were taught and learned, impacted his experience in advancing to complete the degree. “This translated for me to be much more cognitively aware as a 31 year old with 'prior knowledge' has impacted my life; in other words, I display 'holding it together' where other colleagues may have 'lost it’” (Carlton, 2014).

**Figure 5- Early Education & Elementary Liberal Studies**

Interview Results: *(Shirley)*

For Shirley, she had much to say about how the class design helped her. As a young child, she had reading difficulties, so hands-on experiences were a relief for her. She could work with examples and work as part of a group of learners. “Individually how my personal experience affected my outlook was to look at ways I eventually interpreted my role to be as I now work with personnel, parents and most importantly, children in a school environment” (Shirley, 2014).
In particular, after Shirley took this class, she indirectly became a comparison within the content delivered. After her graduation, she actually took Montessori training, became a teacher, and is now a school director. As transcribed during the interview, when asked about this particular coursework, it wasn’t at all what she expected. She thought it would just be another class. “So many ‘ah ha’ moments about my natural love for children came to light. My experience in this class taught me about seeing the whole child” (Shirley, 2014). She then took my Montessori training, “I could recognize the child’s past social experiences. Furthermore, supporting and nurturing the practices myself with my role modeling to the adults, it could provide and orderly style to move the children ahead physically, emotionally, and cognitively in order to address their academic growth. This class exceeded what I expected” (Shirley, 2014).

“Without the prepared environment, over time, children lose interest in achieving. There must be enticing experiences in store for them to flourish. The same is true for the adult learner. I particularly chose Montessori training for myself because of my experience with Professor Lorenz” (Shirley, 2014). Once she took the Montessori training specifically, “I realized where his styles of instruction came from. I have now followed in those footsteps. My work is motivated by helping children to become intrinsic learners” (Shirley, 2014).

The interesting development this interview presented was the reciprocal value to career paths, especially in the younger years. The research discussed only detailed adult learning specific to Montessori training educators who work with children. This interview highlighted that a college class in higher education, using these practices, could substantiate the industry of education as well as the seven, other career paths. This became a fascinating result which can be explored in discussions around all career path benefits.
“Once I took this class, it convinced me as a returning student with three children, I wanted to use these skills to finish my associate of arts and transfer to the four year institution to get a bachelor in Psychology. I want to help build connections with young children as a counselor the same ways I experienced them in this class with Montessori instructional practices as a part of my own experience. I appreciate how this class taught me to recognize my self confidence” (Christa, 2014).

In particular, the interview revealed that the impact of the normalization process affected Christa the most. With regard to the course value, the concern was held for the student and focused on career. “This base was primary in building trust; once this dynamic is built, interactions can expand the learning; personal contact was fostered across assignments as well as understanding the conditions of other fellow students when outside issues impacted their
learning. In other words, issues personally that affected our learning; this resolution came about because of the trust, normalization could “see” other peers as people” (Christa, 2014).

“My career path as a counselor has definitely become easier because building the relationship’s journey has become more influential in the way of executing projects as opposed to merely an assignment or grade. Relationship is essential and trust is evident when normalization develops. I can then see mentoring is what builds the practice to further normalize across new endeavors” (Christa, 2014).

**Figure 7- Sociology- American Sign Language & Deaf Studies**

Interview Results: (Anna)

“Although I took Professor Lorenz’s class a few semesters ago, and I didn’t remember the specific theories, I feel as if he supported me to become stronger in socializing. As an American Sign Language interpreter, socialization is important. This class taught me to reach out to others and in doing so, it helped me build confidence that I can reach my goals” (Anna, 2014).
Anna was quite endearing about the course. Although she clearly identified that she did not remember every aspect of the class, once the interview process afforded her the Montessori pedagogical principles, Anna quickly recalled what the course actually helped her to realize. “As a graduate and working with the Department of Food and Agriculture, this course improved my communication skills” (Anna, 2014). As the interview progressed, it would be confirmed that the principles had come to be a contribution to her overall development.

Throughout the interview, two specific areas related to the pedagogical principles continued to come forth as they related to the themes about personal responsibility and socialization. With regard to Anna’s application in her career, she stated, “I apply this learning to elementary and middle school church program that I volunteer for. However, my career path is not where I work, therefore, it is minimal use in my current work” (Anna, 2014). As the researcher continued with the questions, a realizing sense came over Anna.

Initially, as personal goals were discussed, Anna spoke about the courses effect in helping her to realize that she is a visual learner. “As a goal for the future, I want to work with deaf children, and in doing so, sign is visual. This type of communication is very influential to my success and those I will work with. In the meantime, I really do need to be mindful about how people learn, thank you for helping me to realize this. I may not have ever realized this had we not spoke about these outcomes” (Anna, 2014).

Secondly, a realization occurred by Anna that everyone is truly different and shared her perspective in relation to the themes noted earlier. In her current role, as described, the use of technology and telecommunications requires a more professional communication style. “Grasping this has helped me to be careful as to what to say and what not to say. The pedagogies
during our course were a great way to encourage the student to build confidence especially when public speaking” (Anna, 2014).

**Figure 8- Biology**

Interview Results: (Becca)

“As an initial thought as I sat in the front row, is this will be just another psychology class and it will merely confirm what I already know” (Becca, 2014). To Becca’s surprise, she shared in the true value of these principles based on her prior life experience as a Waldorf educator. “With an interest to be a researcher myself and with a love of science, I have input to a given project” (Becca, 2014)!

According to Becca, the interview equated to a better understanding of her personal life in connection with her career path. “As a teen mom, early choices in my career were about raising my child. However, after taking this class, my natural scientist came out and helped me to
crystallize my thinking about educating a career in science” (Becca, 2014). Throughout the interview, Becca shared that at every turn into a new chapter, “I continued to find confidence in myself based on the instructional principles of the course” (Becca, 2014).

The interviewee continued to validate Becca’s value as well as the case study. She was able to share that the class had helped her to extend these featured principles into her own community of scientists. “In this way, physical activities are influential to on-going learning as we experiment and hypothesize to a result” (Becca, 2014).

“In particular, the pedagogical principles embedded in the instruction of the course offered me connection to my prior Waldorf teaching practices. This provided me with the space to give and received feedback” (Becca, 2014). Becca shared that she was able to relax and ask questions. Here, it was acceptable to dialogue and better understand how the content could or should connect with our careers. “This was good work, I progressed; this concept has provided me with the ability to learn from my own questions by simply asking them out loud and getting my answers confirmed when right and simply redirected when wrong” (Becca, 2014).

The prepared classroom environment was another area Becca felt was quite remarkable. The large group and, most important, the small group could offer feedback through building trust that could be shared participation across the group (Appendix B). This feedback to the larger group provided information which could, once again, be detected socially throughout all levels by preparing the information and presenting it in a larger way for meaningful connection to our careers. “I didn’t feel comfortable asking questions; I’m not broken and now, I can ask the questions knowing the answers are there and not necessarily mine, but based on the trust and respect of each other, how we can cumulatively allow the institution to change; basic instruction
with a more hands-on experience. It’s lacking in my career, if I were the director, I would build off respect; versus being competitive and hierarchical” (Becca, 2014).

“As a returning student and single mother, this class absolutely turned my life around. Although I was a Waldorf teacher and enjoyed my work, I had always wanted to be a scientist and conduct research. Once I finished this class, I shifted my major and am now completing my four-year degree in Biology. It was Professor Lorenz that invited me to believe in myself. I really appreciate his genuine style and interest to care for every student to want to achieve her or his best, thank you” (Becca, 2014).

“I’m very grateful for this course. It was a catalyst to realizing a better set of outcomes for my daughter and me. It’s the institution in place and to move through this class has been beneficial to realizing this development in myself” (Becca, 2014).

Cumulative Results Of Subjects

Figure 9- Cumulative Subject themes
This “Wordle” provides a cumulative illustration of the graduates combined experiences when the Montessori pedagogical, instructional principles were practiced during the student’s coursework. The teaching and learning enabled heightened the student’s academic progress regarding retention and completion showing an increased learning of the material in a group and connecting it to career and work. Furthermore, this case study validated that the methodology of Montessori pedagogical practices can offer students, who achieve their education, increases in their confidence also to connect their prior and current knowledge with their career interest. Consequently, these practices can increase success into the industries in which the graduates work.

**Summary of the Data**

Cumulatively, the data demonstrated common themes across the Montessori instructional principles and the course content. They held meaning personally and professionally. As the graduates expressed the value of respect between instruction and peer group experiences, a greater educational focus persisted in learning the material and a further in-depth importance to career implementation.

Although different major and degree aspirations to career paths existed among the subjects, in a summative way, the graduates found collective benefits when they were given the opportunity to contextualize their learning. They reported positive experiences from the courses taught and found the pedagogy used helpful, supportive, and meaningful. Interviews yielded strong correlations between the courses taught, the Montessori instructional principles used, and application of these principles further on in their lives.
Chapter 5

Discussion

According to the four planes of development within the pedagogy of Montessori’s methods, scientific factors play a vital role in the development of learning (AMI, 1971). As known, Dr. Montessori evolved this methodological system over one hundred years ago, and it still causes great confusion with regard to the concepts when compared to traditional systems of education. However, these results, as shown through the interviews, have illustrated, qualitatively through Montessori’s pedagogical instructional practices, the matrix of the mind and how it works was a phenomenal undertaking. As the system of education transforms students across the learning planes of growth, these graduates reported that they experienced both increased imagination and creative intuition. Ideally, they were very purposeful in recognizing their role in developing critical thinking, problem solving, and decision-making skills. In turn, these features became the catalyst to the demonstration of their leadership skills across the completion of their course, the remaining courses it took to graduate, and worked well into their career paths.

It is within the planes of Montessori’s absorbent mind that specific sensitive periods of development assisted the characterization of the graduates' personality and temperaments to the active and engaged learner. As the graduates moved from the stages of total dependency in the teacher to an interdependent learner, the basic ideals of the social, emotional, and physical developmental qualities were what sparked the very core of their overall development. These pedagogical principles built trust to learn, and use the tools of learning, for career development preparation. It is believed, through the methodology of Montessori’s perspective, all things must
first be true and concrete and develop to the abstract and random (Standing, 1957). Therefore, in order for the student to demonstrate a conscientious mentality toward the concepts being learned, the student had to first experience a connection with his/her own reality. The concepts stemmed from the belief that in order for the intuition to become a reality, the graduates first experienced the world through the use of the senses; in other words, the availability of the didactic material offered learners the opportunity to explore the truth about reality. “Consequently, factually and through the senses, prior knowledge and hands-on experience were what built the long standing memory and meaning for the content (Montessori, M. (Claude A. Clarement) 1967).”

The Classroom Environment and Pedagogy

As stated earlier in Chapter 3, according to Kalb (2014), “in light of the community college’s low student success,” the exploration and discovery of my training as a Montessorian led to the development of this dissertation. Could these pedagogical principles have implication on community college student success? Therefore, the data was analyzed, and the results determined that the physical classroom environment’s essential task was to create a multidimensional intellectual space for students to be offered the opportunity to explore. As claimed by Page, “The school is primarily an intellectual place. The foundation of education has to be that you try to teach people to improve their ability to think about such things as social education, and functional education, and they're all incidental” (Page, 1987). In building the foundations of human resources within the employee, the knowledge imparted around the content and material, demonstrated through instruction, now plays a vital role in the elements of the prepared classroom environment. Student perceptions of these types of environments were affirmed through ways that promote and contribute to further student engagement across classes,
which led to college completion. Equally, these attributes build skills in the practices across the industries examined in this case study. It is proposed that if the consistency of these practices is exemplified across a greater number of courses, then similar student outcomes could result.

Maintaining sensitivity in finding a balance between these skills is important among instructors. Therefore, the environment plays a valuable role in connecting the theory and student participation with the advancement of higher education and how these values translate into career paths. These instructional policies have long-lasting effects on societal participation as these subjects progress through their discovery-based environment and into career paths.

It was through these learning styles that the graduate was able to translate meaning from the theory presented to make meaning as it fit with his/her personal life. Thus, the use of these skills in strengthening the higher education classroom, implementing with such methodologies like Montessori, have determined a positive effect on discovery-based learning. According to Weaver, “Students who actively participate in the learning process learn more than those who do not” (Weaver, 2005). Based on these interviews, further use of these different styles of teaching and instruction by professors across the coursework in the community college can assist the student in graduating with a major and/or transfer to a four-year institution. The expansion of this type of instructional methodology claims that the relationship of connecting the theory with personal experience more easily connects them with a career path. Therefore, these principles, by way of policies and procedures monitored by human resources, strengthen career paths when implemented. Consequently, as the interview deepened into the questions about Montessori pedagogy, the graduates were able to link these effects with the implementation of the personnel review in a career and/or evaluation process and procedures of a certain role within a career path. As instructional quality in the interviews were validated through strong student outcomes, it
became clear that innovative instruction in higher education, using varied and proven learning styles, promoted a higher caliber of content delivery, engagement, participation, and completion for the graduates. These graduates reported that their levels of achievement were greater and more successful. This, in turn, encouraged the students to complete the course. Ideally, this information has fostered growth into the graduate’s career path as well.

The ultimate community college value given to this research asks about student engagement, retention, and student success. The relationship this research has demonstrated concerning participation and completion has proven, based on the interviews, how steadily embedded the Montessori pedagogical instructional principles were in creating a consistent environment with clear expectations. In turn, engagement and participation of the student’s ability to connect demonstrates intrinsic discipline and emotional intelligence to succeed (Goleman, 2007). As seen in the final figure illustrating the components of the Montessori pedagogy, the significant results showed that the interviews confirmed the outcomes which completion and career path success can take place when an instructor practices these types of instructional pedagogies. The research reinforced student completion and career path influences. The answers were a resounding yes. The use of the Seven Pedagogical Principles of the Montessori Philosophy Instructional qualities breed respect, and with this common agreement, the limitless potential of learning for all involved is possible (Montessori, 1967).

Chart 7

Analysis and Outcomes

| As a graduate of the community college course: | As graduates of the community college course moving on in careers: |
“When subjects completed a course at the community college wherein the Montessori pedagogical instructional practices were employed, what evidence was offered through interviews with the subjects that these Montessori principles had lasting impact as they completed their education?”

“Do community college subjects find a useful connection between experiencing the implementation of Montessori pedagogical instructional practices in a higher education classroom and their chosen career paths? If so, what is that connection?”

**Common Threads for Research Questions 9-15**

In relationship to the research questions restated above, the analysis of the common threads using the Montessori pedagogical principles reassured students in completing their college degrees and certificate programs. As an example, work and career are integrated through the course content and pedagogy employed throughout the courses. With regard to relationships and stronger identity, the use of the small group cohort model resulted in enhanced communications. Furthermore, the prepared physical environment enticed students to attend and work together collaboratively. Increased communication, leadership, and mentorship evolved from a balance of these practices used.

The use of the Montessori pedagogical principles also assisted the graduate in realizing their value to careers. The “Wordles” helped to illustrate a value of building consensus in the workplace. A further increase of leadership skills and their benefit to potential career advancement became apparent. They clearly related to communication in the workplace surrounding problem solving and decision-making connected to the organizational needs of the company.

Outlines by course are ways in which curriculum committees by department can assure teaching and learning are addressed in college coursework and instruction. Simmons (1997),
confirms that small, group work as examples, illustrated through these interviews, helped to affirm class-wide peer-tutoring peer-assisted learning strategies, in which student partners assisted each other two to four times weekly, benefited individualized learning activities. This approach has been shown to be effective in improving academic achievement in general and linking contextual learning into the graduate’s careers (Berry, 2006). As the college instructor seeks for clarity of the meaning of academic freedom and course learning objectives, one aspect is well defined: there are values of effective practice that all post-secondary and higher education models can implement and provide opportunities to meet the high-quality objectives in reaching course outcomes such as was described earlier in the areas of this case study’s interviews. According to Chickering’s work (1987), these best practices in higher education include:

**Best Practices in Higher Education**

1. **Encourages student – faculty contact**

   Frequent student-faculty contact in and out of class is a most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students’ intellectual commitment and encourages them to think about their own values and plans.

2. **Encourages cooperation among students**

   Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one’s ideas and responding to others’ improves thinking and deepens understanding.

3. **Encourages active learning**

   Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.
4. **Gives prompt feedback**

Knowing what you know, and don’t know, focuses your learning. In getting started, students need help in assessing their existing knowledge and competence. Then, in classes, students need frequent opportunities to perform and receive feedback on their performance. At various points during college, and at the end, students need chances to reflect on what they have learned, what they still need to know, and how they might assess themselves.

5. **Emphasizes time on task**

Time plus energy equals learning. Learning to use one’s time well is critical for students and professionals alike. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty.

6. **Communicates high expectations**

Expect more and you will get it. High expectations are important for everyone – for the poorly prepared, for those unwilling to exert themselves, and the bright and well motivated. Expecting students to perform well becomes self-fulfilling.

7. **Respects diverse talents and ways of knowing**

Many roads lead to learning. Different students bring different talents and styles to college. Brilliant students in a seminar might be all thumbs in a lab or studio; students rich in hands-on experience may not do so well with theory. Students need opportunities to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily. (Chickering and Ehrmann, 1987)

We can do it ourselves-with a little bit of help” (Chickering, 1987). These practices, in fact, overlap with the Seven Principles of Montessori’s Pedagogical principles of instruction. They are shown here, by the quotes from interviews that highlighted their personal connections to their achievement and outcomes in the course, how they assisted them in the completion of their education, and are using the principles in a practical way in their careers. Clearly, the value of supporting these qualities is a highly probable reason for incorporating these principles into higher education. The following chart depicts a summary of the Montessori pedagogical instructional practices as they equate to each student:
### Seven Pedagogical Principles of the Montessori Philosophy Instructional qualities

<table>
<thead>
<tr>
<th>Principle</th>
<th>Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respect for the student- The ability to balance the learning between content and trusting in the student’s prior funds of knowledge</td>
<td>“I felt so respected by my classmates. The way you encouraged open-ended dialogue allowed us to share our experiences with each other and then we connected our information to the chapter work. It was an amazing experience” (Raquel, 2014).</td>
</tr>
<tr>
<td>The absorbent mind- The ability to absorb, apply and analyze basic knowledge</td>
<td>“As a returning student, I gained back my confidence because you respected my experiences, and I could then apply them new information. This opportunity fostered my interest to seek a major in Biology” (Becca, 2014).</td>
</tr>
<tr>
<td>The Prepared Environment- The physical space is vital to student centered engagement</td>
<td>“I distinctly remember rearranging the room every class period so we could be face to face with our classmates. I met new people that I am still friends’ with today” (Carlton, 2014).</td>
</tr>
<tr>
<td>The process of Normalization- Creating a trust in building the relationship</td>
<td>“As an educator myself now, I never realized that you made us feel comfortable and not uneasy. I have taken this practice and incorporated it into my own classroom by using ice-breakers to help students become comfortable with one another. They find as they do this, friendships begin and picking on others decreases” (Shirley, 2014).</td>
</tr>
<tr>
<td>The Sensitive periods- Based on trust in the relationship, an awareness that development of knowledge increases as the student applies critical thinking such as problem solving and decision making</td>
<td>“I didn’t know what I wanted to be when I returned to college. Taking this class truly helped me decide to become a nurse. Your support of us to take the lead each week has encouraged me to become a leader in my nursing program. I truly enjoy my role with my fellow peers” (Roberta, 2014).</td>
</tr>
<tr>
<td>Role of the Teacher- The role is to come prepared with content and demonstrate flexibility regarding the needs of the students as they will build the contextual value; meaning erupts</td>
<td>“I had very low self esteem and didn’t know what I wanted to do. Once I took your class the first day, I learned by how comfortable I felt I wanted to become a psychologist to help be a role model for students. This course helped me appreciate other people’s perspective. I learned from my classmates” (Christa, 2014).</td>
</tr>
<tr>
<td>Role of the student in adult learning- defined by the ability to fulfill the role of teacher in carrying out leadership of skills learned and teaching or practicing them such as in the “learning and/or work environment”.</td>
<td>“I grew up here in this town, and this class taught me about the bio ecological model. My...”</td>
</tr>
</tbody>
</table>
As the pieces of classroom and course learning objectives were constructed together, a clearer picture of personal processes was facilitated in order to promote student learning from the higher education coursework point of completion to the subjects career path integration.

**Instructional Quality**

As the examination of the graduates learning styles were connected, regarding the course objectives and student achievement, this case study was able to demonstrate how the correlation between instructional quality and student participation became interwoven. These performances are known as “Functional controls which pertain to those measures guide the human resource function relative to the actions of employees” (Young, I.P., 2008). Particularly in relationship to the first research questions posed in this study, when subjects completed a course at the community college wherein the Montessori pedagogical instructional practices were employed by the researcher, was the evidence offered, through interviews with the subjects, that the Montessori principles had lasting impact as they completed their education? Truly, although most college teachers have been trained to be the experts in their area, and advanced degrees have denoted their authority in the classroom, specific instructional practices are lacking. “We are the decision makers for our classrooms: we create the syllabi, assignments, assessments, and we make sure the course runs on schedule” (Young, A., 2003). However, what these interviews have determined is that such examples of these aged functions is that the graduates found it hard to relate to a high degree of self-identity and worth in student achievement in more traditional
classes after they experience the Montessori pedagogical principle of instruction. Additionally, Berry's research exemplified that the following strategies could be effective in increasing students' involvement in whole-class math and literacy lessons: “modeling the particular skills being taught, posing questions encourage differing viewpoints, calling on students to answer questions or when they volunteer, restating students' contributions to make them more accessible to other students, and keeping the discussion on point” (Berry 2006). These interwoven functions and implementation of teacher strategies in the classroom truly helped students to achieve overall success, become graduates from the course specifically, and complete their degrees. Ultimately, once these interviews were transcribed, they helped the graduate recognize and unfold the organization and implementation of these skills and their own roles into the educational setting. In realizing these measures of instructional quality, they build upon the levels of functional controls.

Further features of instructional quality also derived the values characterized by Levin (2010), who states,

“Unlike many examinations that focus only on the transfer mission, this study includes other vital areas of the community college, including workforce preparation and developmental education. Study findings reveal that the practices of these programs had four common characteristics: cohesion—the ability of program personnel to operate as a unit in which behaviors and actions mesh or are rationally consistent; cooperation—the degree to which program personnel work together toward common goals and form good working relationships with each other and with students; connection—the ability of program personnel to sustain interdependent relationships with internal and external entities, such as other departments within the college and industry representatives; and consistency—the presence of a distinctive and stable pattern of program behaviors that promote program goals” (Levin, 2010).

With this example, graduates shared these aspects of the classroom involved in both formal and informal styles of instruction. The lecture form had the least purpose and smallest outcome. The interviews resulted in much agreement over how beneficial the large group exchange in information was based on the small group cohort community used as a part of the classroom
environment configuration (Appendix B). Attributes such as peer-teaching or tutoring and gender and social support blended through these instructional styles worked best. Additionally, Lillard introduces yet a different way of thinking about meaningful guidance as a part of the management of the classroom:

“It is true that the student develops in his/her environment through activity itself, but he/she needs material means, guidance, and an indispensable understanding. It is the adult who provides these necessities. If the adult does less than is necessary, the student cannot act meaningfully, and if the adult does more than is necessary, he/she imposes him/herself upon the student, extinguishing the students' creative impulse” (Lillard, 2005).

Collectively, it is through these types of experiences in classroom management which enabled the graduates to absorb the content and material that led it to coincide in ways that were meaningful and purposeful in recalling, applying, and assessing merit to as they spoke about how these principles offered success in their career path. They very much valued the student participation. It equated to a higher level of achievement. Cohesively, as they reflected upon the pedagogical principles in relation to their careers, they shared similarities about how the personnel practices in their careers offered a comparison to my approach versus the more formal stimulation, which offered less engagement. Instead, there were references to more active learning as the graduates spoke about implementing the practices into the daily operation. Ultimately, a trustworthy setting stimulates both learning and interest, which can contribute to student retention and completion from the college courses and practice into career paths.

**Montessori Pedagogical Practices:**

**Outcomes in the Community College Classroom and Careers**

The interviews qualified values about how the researcher fostered growth with connection to the student needs based on the use of the Montessori pedagogical instructional
principles practiced in the classroom-learning environment. Thus, advancement across both educational coursework and career experiences showed a strong correlation to the experiences in this research study. This “Wordle” illustrates the evaluation of the student’s implementation of the Montessori pedagogy in everyday, ordinary life as they graduated and represented the practices in their career paths.

Figure 10- Montessori Pedagogy

Overall Interview Data Results Discussed:

Clear results were authenticated from the eight interviews. The research revealed that this case study aided in validating the researchers practice in the utilization of the Montessori pedagogical principles of instruction. Based on the role participation plays on completion, connecting with students has the opportunity to advance student engagement, retention, and completion. Certainly further research considerations could approach these questions. However, presently, when the current research being used and implemented in connecting with students, stronger outcomes can exist across all planes of growth. This includes but is not limited to physical, emotional, social, and cognitive development (Montessori, 1948).
“Plainly, the environment must be a living one, directed by a higher intelligence, arranged by an adult who is prepared for this mission... developmentally across, including but not limited to the physical, emotional, social and cognitive planes of growth.”

(Dr. Maria Montessori, 1948)

The Hope in the Higher Education Environment

The results of the student achievement and instruction are connected to the classroom environment and relationships across our life span of physical, emotional, social, and cognitive growth planes. These areas set the tone and structure for how the higher education professor is going to teach or instruct the content. “Meaningful assignments involve providing students with challenging, more complex tasks. When assignments and lessons are assigned that encourage problem-solving objectives and higher-order thinking, the goals become dynamic” (Young, A., 2003). As compared with the learning objectives, through lecture, group discussion, written assignments, and student-centered and project-based experiences, the results in outcomes are demonstrated through proficient competences. “Social roles, or the gender-stereotypic beliefs of the dominant culture, hold that males are more argentic, meaning they tend to be more assertive and controlling, and females are more communal, meaning they tend to be more concerned with the welfare of others” (Canada, 1995). These values demonstrate the instructor must also be sensitive and clear about the intentions during group discussion or small/large group participation to foster and promote active involvement with sex, gender, and development so as to maximize the potential of the group in meeting the outcomes. “These requirements for the faculty have also contributed to the quality of training the students receive and have helped the program curricula stay current, ensuring program faculty members have up-to-date knowledge
and experience with industry trends and technological advances” (Levin, 2010). In doing so, training becomes mutual and not merely instructor-authored. This involvement increases the student competencies toward high quality outcomes. “Our results suggest strong policies on the equitable treatment of male and female students make a difference. Such policies, if carefully enforced and periodically monitored by observations in classrooms, are translated into gender-equitable behaviors of teachers and students in classrooms and can profoundly affect students' experiences” (Canada, 1995). The differences between male and female outcomes offer further clarification that those solid personnel policies are in place to heighten awareness and responsibility to create and build equity in the classroom ensuring an atmosphere of trust and consistency. Grunewald further states,

“The pressure of accountability and the publication of standardized test scores in the news media reinforce the assumption that student, teacher, and school achievement can be measured by classroom routines alone and that the only kind of achievement that really matters is individualistic, quantifiable, and statistically comparable. Such an assumption is misleading because it distracts attention from the larger cultural contexts of living, of which formal education is just a part, and whether or not it is representative of sex, gender, and development” (Grunewald, 2003).

It is reasonable, then, to capture beyond the classroom walls; it is more than simply accountability that fulfills the accomplishments of quality teaching and learning. Meaningful beliefs engage the student to want to achieve. Consequently, this empowers the achievement of a student’s environment strengthened by these practices as observed by their graduation and career path integration.
Consequently, as we look to incorporating a greater connection with students across the life span planes of growth, it is valuable to note Dr. Paulo Freire’s work from earlier about the cultural teacher. Additionally, given the importance of Chickering’s work in higher education teacher quality (and although Montessori can be highlighted with similar contributions,) it is important to identify that Freire’s evaluation of community-focused education within a democratic society (not just government) is a more viable solution for student success in learning. “Freire’s work makes a good source of ideas and methods of communication for educators” (Martin, 2009).

Conclusion

Acceptance of personal responsibility allows fulfillment of needs by the willingness to participate in the learning process. Through learning and development, these facets may become consequential and key to the power of our choices. The value of Montessori pedagogical principles, as they relate to broad teaching and learning practices with students and faculty, were fostered through this case study about these pedagogies and their benefits to overall higher education and success into career paths.

Not only does this provide potential validation of increased achievement, but it also sets in motion a new vision of teaching that is reflective of these more ambitious demands for the profession. This vision is one that recognizes teaching as a multi-dimensional activity, requiring a wide range of knowledge, skills, and abilities. The many dimensions of teaching are related to one another in complex ways and are responsive to the needs of diverse learners (Bartell, 1995). These increases demonstrate instructional styles in varied ways and with varied projects that help students become effective in using these tools in advancing the instructional quality for teacher
preparation as it is for the education for younger students (Hagedorn, 2003). Equally, as these styles of instruction demonstrate efficiency, we find the opportunity to create and develop partnerships among courses such as these being taught with school communities broadly. Therefore, the effect of the current school completion rate could see support offered directly in the classroom with teaching and learning opportunities. These instructional pedagogies could move through the college as they work to increase completion. In doing so, the potential to build a stronger teacher credentialing program can advance the training of these practices for higher education and higher completion.

Nature, and the policy in community college, abhors a vacuum. The absence of a strong sense of purpose in the recruitment, preparation, induction, and ongoing-development of the teaching workforce could be the undoing of years of productive, transformative work of student success and completion into careers (Sandy, 2006). This study clearly defies these apathetic perspectives. Through innovation and energy, producing high-quality results in higher education and the community college can increase graduates. The dedication must persevere (Jacobson, 2009). In fact, the goal is to become recognized as an outstanding community college as well as to offer bachelor’s degrees in related instructional fields along with some fashion of a teaching credential. With our education partners that may be local, regional, or nationwide, such as school districts and county offices, the college and university systems, and the broader higher education and vocational industries, a higher quality can evolve based on a richer personal connection to the academic rigor.

This qualitative, descriptive research design included introductions of these values to the educators teaching in the classroom based on Dr. Maria Montessori and Dr. Paulo Freire. The implications and evidence provided value to the seven principles of the Montessori pedagogy for
teacher instruction. Using observation, insight, and mentoring along with interviewing subjects, each of the seven principles were explicitly detailed based on the tools used and the skill set necessary in transforming the higher education classroom environment for producing higher quality learning experiences into career paths. The results of this qualitative data have been able (through interviews, the physical layout and design, the scope and sequence of the material in the environment taught, and the use of the pedagogical practices,) to determine effective student learning, graduation, and career path implementation. When carried out, the pedagogical tenets emit a stronger, higher education instruction and quality outcomes for students, graduates, and employees across these industries. As these values unfold with the college classroom, with very specific guidelines in the training programs of higher education instructors, the practicum occurring in these courses can further strengthen both the teacher’s growth and the college’s student graduation rates.

**Recommendations**

Ideally, as physical space and the environmental design are refined in the higher education classrooms so too are the methodologies and practices in human resources of how they are taught in the college classroom. As strategies of new visions are implemented along with the use of technological advances, the value of building upon space, materials, instruction, and activities will lend themselves to promote learners of all ages to continue developing as creative and critical thinkers and problem solvers (Resnick 2007). Items associated with the function and role of the educator are linked to recruitment, selection, orientation, hiring, and evaluation of these positions. Further study may reveal even more in-depth inquires concerning the linkage
between these positions over compensation, review, continuity, staff, and professional development when directly employed as educators in the community college system.

**Contributions this Study Provides to Higher Education**

Building and investing in faculty and staff through means of a strategic plan is a way to advance student competencies and achievement. It is evident and essential in the content-driven classroom. In order to deliver enrichment through materials, connecting and pertaining to the topic areas explored are vital along with realizing learning style differences. Grunewald states, “The political dimension of place-conscious education, therefore, demands a radical multiculturalism that continually challenges the regimes of accountability designed to move everyone toward the political center, multiculturalism embraces the spaces those differences make” (Grunewald, 2003). These values strengthen the relationship between how the theoretical content is delivered and the how learning styles of the students are practiced. As part of an everyday experience in a college class, the reality of the classroom is where we base the experiences of college students and their learning. These experiences are performed in a physical space conducive for these learning patterns to take place. The foundations of these very procedures further exemplify the role of the instructor in a college classroom. These features play roles in building and strengthening the lives of students regarding achievement in addressing instruction. Thus, meeting the course's learning objectives and student performance standards can be joined under the umbrella of professional development resources. This is where the responsibility lies in carrying out these objectives for students in a high-quality, organized classroom. The culmination of these findings for improved higher education settings, based on
college teaching and instruction, will be the antithesis to the recommendations of formulating a minimum of a master’s degree and a teaching credential for California’s community colleges.

Many researchers study issues that are close to their heart. In this case study of the Montessori pedagogical practices put into use at the community college, I looked to the DNA, if you will, of former students from several courses wherein these students experienced and learned about the seven Montessori principles. In the contribution of research these graduates provided to the community college system, based on the inquiry of instructional practices, I found traces of these ideas in their current pursuits, professions, and careers. As a knowing insider on both the topic and the instructor, what would these graduates tell me about their experiences learning in his classes and in their present career pathways regarding the ideas of Dr. Maria Montessori? As deemed, the researcher worked in teacher education for many years—identifying what’s needed is a constant challenge, both to parents and the media. Dr. Montessori had her own way of articulating best practices. Ultimately, from the interviews, students eagerly shared ideas that support both recall and deep understanding of the essence of Montessori -- such as the role of the student themselves in the learning and the importance of respect for the individual while blending the ability to work with others for a common good. The role of trust in teaching came forward as did an ability to apply what one has learned and bring it forward into new settings.

This research is important for several reasons—one, the community college student’s major, for example, administration of justice ends up as a rehabilitation counselor. The behavior and social science student works with youth. The allied health person works with a major hospital as a health technician. The graduate’s interviews shared about their practices. “Employer’s want their people to carry forward the same set of ideas about problem solving and analytical thinking” (Carlton, 2014). “This appears to be what I learned about Montessori as the
researcher shared. For this, this research provides powerful motives for improving student participation and success concerning completion across the college environment” (Becca, 2014).

**Considerations for Further Research**

Although the references of this research address and propose statistically higher achievement based on a project-based and student-centered approaches, it has not entirely answered important questions about the effects on achievement and other desirable outcomes of schooling. Other questions do exist such as student engagement, motivation, and persistence when these teachers go out into higher education environments (Nye, 2001). Consideration for further study may address these approaches by observing and assessing the role of the educator in their teaching classroom with higher-education students.

With such items as the project-based and student-centered approaches being applied, perhaps a student might be more likely to graduate from high school with college preparation, and if these attributes were incorporated across the high school and college environments, would more people end up attending college? These and other questions combined with the results prompt the author to further consider these details.
Appendix A

Instrumentation

Interview Format and Structure

1. The researcher interviewed eight individual graduates and requested the completion of the subject information sheet. The subjects were graduates from two undergraduate classes, the Sociology class and the Psychology class. These graduates were chosen based on interest to participate in the research after their graduation. It is believed in the interest of increasing student participation in higher education coursework and higher career success; the graduates participated because of their interest to contribute to improving higher education learning and not necessarily participate only to please me. Given the Internal Review Board (IRB) was accepted, the Human Subjects (graduates) were invited and Pseudonyms for the eight subjects have been used during the interview and used to analyze the information about their participation during their class and about their career paths:

2. The interview lasted approximately 60-90 minutes.

3. During the orientation process, the researcher described the recording device and the purpose of recording including the confidentiality of the information received. All data from the interviews would be transcribed and lead to information will be summarized into the conclusion of the research. The signed human subjects page stated these facts as well. The subjects were informed about consent on the form.

4. Proceeded with the individual interview with the established questions that were recorded. The researcher-defined terminology the participant needed clarified.
5. Made the information sheet available and collected this information for purposes of gathering basic career/education information about the subject prior to the interview.

6. Began the interview starting with the basic warm up questions.

7. After the fifth question was answered and recorded, the seven pedagogical principles sheet was made available and was able to proceed with the remaining questions about Montessori pedagogy.

8. Upon completion of the interview, the researcher answered any questions from the subject.

9. Collected and secured the material including the information sheet and the recording for transcription.

Script for Interview Protocol

The first four interview questions provided a warm up for the individual subjects from the courses being studied. The following general questions 5-16 required approximately 60-90 minutes for each of the eight interviews:

1. Please provide a brief introduction of yourself including where you are currently employed and/or continuing in your education.

2. Do you remember the overall course content? If so, what do you remember about the assignments and/or the instruction that may have differed from other courses and styles of instruction?

3. Based on what you recall, what did you learn? How have you applied these practices in other course work or in your career?
4. Is there any other information you wish to add to your general introduction based on where you are located now in your education or career path?

General Questions

5. Looking back at the course you took, Sociology or the Psychology course, was the course what you expected it to be? If yes, please describe. If no, what did not meet your expectations?

6. Did the course affect your personal goals? If yes, what did you learn that could be applied professionally across your career?

7. What learning came from the group work that was required in the class? Did you benefit from the peer influences?

8. Do you recall the pedagogical instructional principles that I used? What do you remember?

(At this time, the student interview handout of the seven Pedagogical Instructional Principles was offered to the subjects- found below.)

9. Based on the Montessori pedagogical instructional principles used, share one example of how “respect for the student” affected your participation throughout the course? How do you practice this in your career path?

10. With a foundational understanding of respect, has the value of the “absorbent mind” changed your mindset about learning to think about thinking in higher education and the importance of this skill in your career?
11. Describe your perception about the Montessori principle of the “prepared environment” and how do you perceive its importance now that you have been exposed to some of its value in the class? How about in your career path?

12. Based on Montessori’s concept of “normalization,” how did this process affect your learning in your small group? Has it had an effect in your practice across your career path?

13. As a result of your attendance in this class, do you believe your understanding of the Montessori pedagogical instructional principles was creating a “sensitive period” in learning, fostering a change in your role and participation in subsequent classes, and has it affected your role as an employee in your career?

14. With regard to the “role of the teacher,” do you think that you used this principle in your role as a student in other classes, and do you see your role as vital in helping others learn your career responsibilities?

15. As a result of your participation in this class, have you applied the pedagogical instructional principle of “the role of student in adult learner” as an educational tool with other fellow students and with co-workers and colleagues in your career path practice?

16. Is there anything else you would like to add about your experience in the class?
Seven Pedagogical Principles of the Montessori Philosophy used as Instructional Principles in the Community College Classroom

<table>
<thead>
<tr>
<th>Seven Pedagogical Principles of the Montessori Philosophy Instructional qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Respect for the student- The ability to balance the learning between content and trusting in the student’s prior funds of knowledge</td>
</tr>
<tr>
<td>• The absorbent mind- The ability to absorb, apply and analyze basic knowledge</td>
</tr>
<tr>
<td>• The Prepared Environment- The physical space is vital to offering student centered engagement</td>
</tr>
<tr>
<td>• The process of Normalization- Creating a trust in building the relationship</td>
</tr>
<tr>
<td>• The Sensitive periods- Based on trust in the relationship, an awareness that development of knowledge increases as the student applies critical thinking such as problem solving and decision making</td>
</tr>
<tr>
<td>• Role of the Teacher- The role is to come prepared with content and demonstrate flexibility regarding the needs of the students as they will build the contextual value; meaning erupts</td>
</tr>
<tr>
<td>• Role of the student in adult learning- defined by the ability to fulfill the role of teacher in carrying out leadership of skills learned and teaching or practicing them such as in the “learning and/or work environment”</td>
</tr>
</tbody>
</table>

(Montessori, 1967)
<table>
<thead>
<tr>
<th>The Nine Developmental Characteristic Milestones for Student Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Large and extensive work</strong></td>
</tr>
<tr>
<td>Allows concept and size to be identified by peers and instructors as an important accomplishment</td>
</tr>
<tr>
<td><strong>Heightened Sense of Justice</strong></td>
</tr>
<tr>
<td>Defining and relating interpretations of justice (fairness) along with what is equitable (what a person needs as opposed to making sure that all people receive all things which not everyone needs).</td>
</tr>
<tr>
<td>The hope and vision of the school is to create students that are self reliant, just, fair and cooperative citizens through a collaborative process.</td>
</tr>
<tr>
<td><strong>Hero Worship</strong></td>
</tr>
<tr>
<td>Admiration is ultimately organized through a level of balance across the life span. It is the classroom’s responsibility to prepare opportunities for students to become aware of hero’s outside of our societal stereotypes such as sports stars or Hollywood’s entertainers that are more superficial. Such things as classical literary works allow students to look at characteristics that are far greater in quality like humanistic qualities of true heroism. Examples may be Robin Hood, Christopher Columbus and the like.</td>
</tr>
<tr>
<td>Ultimately, it is the hope that children and students develop the perspective that the quality of life is what one puts into it as well as see the authenticity of heroism through the efforts of what ordinary every day</td>
</tr>
<tr>
<td><strong>Herding instinct</strong></td>
</tr>
<tr>
<td>The feeling to follow someone for his or her traits. Becoming the follower versus taking a leadership role. How does one take on the role of being a leader? These values will be examined across the small group learning cohorts</td>
</tr>
<tr>
<td><strong>Limitless capacity for learning</strong></td>
</tr>
<tr>
<td>Making every opportunity a learning experience. Rather than limiting by way of no, don’t, shouldn’t, can’t, won’t,” syndrome, provide a connection for the student to see freedom within limits. The syllabi are a guide.</td>
</tr>
<tr>
<td>We need to realize that students do need to time to absorb information</td>
</tr>
<tr>
<td>New information- what is the process to transform basic knowledge into what can be applied, analyzed, synthesized and evaluated with regard to what has been</td>
</tr>
<tr>
<td><strong>learned</strong></td>
</tr>
<tr>
<td><strong>Principle of rest</strong></td>
</tr>
<tr>
<td>This is an important time when observation occurs. A time to literally absorb or gain a comfort level of the particular concept.</td>
</tr>
<tr>
<td><strong>Experimentation</strong></td>
</tr>
<tr>
<td>This process becomes the point at which observation can detail or identify the appropriate needed, such as supplies, or decisions.</td>
</tr>
<tr>
<td>Research based work needs also fulfill much of the needs in these areas.</td>
</tr>
<tr>
<td><strong>Going out</strong></td>
</tr>
<tr>
<td>Empowerment is important. Given the constraints upon some of our communities, we must as educators and professionals alike, create opportunities whereby the students are able to participate in the society as independent thinkers and active life doers.</td>
</tr>
<tr>
<td><strong>Work of the student/small group cohort learning community</strong></td>
</tr>
<tr>
<td>Do not do for the student what he/she can do for him/herself</td>
</tr>
<tr>
<td>Provide initial prompts. As the facilitator or guide initiates the foundation, the more the students become actively engaged in creating his/her own educational answers. Therefore, he/she receives less as far as materials and presentations on subject matter; for the students themselves are now generating the knowledge.</td>
</tr>
</tbody>
</table>

(Montessori, 1967)
Appendix B

Individual and Group Participation Rubric Agreement

The intention of sharing this information is to heighten awareness about individual and group classroom discussion in the classroom teaching and learning communities each students become a part of. The level name introduces the area of interest as we experience a social, face-to-face interaction with one another concerning content and course materials. The “A, B, C” graded equivalent columns provide students with areas of performance with respect to reaching teaching and learning in such a way as to fully implement them across all developmental categories.

<table>
<thead>
<tr>
<th>Level Name</th>
<th>Advanced in Goals</th>
<th>Proficient in Goals</th>
<th>Basic/Not meeting Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100-90%- A</td>
<td>89-80%- B</td>
<td>79-70%- C</td>
</tr>
<tr>
<td>Prepared for Class</td>
<td>Thorough understanding</td>
<td>Information from assignment summarized and not used</td>
<td>Unclear whether and how well preparation is completed. - Assignments incomplete prior to class.</td>
</tr>
<tr>
<td>- Questions, ideas and interpretations</td>
<td>- Well formed questions - Fits with discussion - Illustrates ideas with examples - Assignments completed prior to class</td>
<td>- Assignments disconnected with discussion - Assignments partially complete prior to class</td>
<td></td>
</tr>
<tr>
<td>- Assignments are completed prior to class</td>
<td>-意图 of making points heard - Focuses on examples - Some peripheral discussion - Asks clarifying questions</td>
<td>- Emphasizes individual ideas - Monopolizes conversation at times - Interrupts or restates ideas of others - Some questions are trivial or off topic</td>
<td></td>
</tr>
<tr>
<td>Promoting Discussion</td>
<td>- Thoughtfully presents ideas - Listens intently - Works to involve others - Listens to others points of view - Relevant questions</td>
<td>- Intent of making points heard</td>
<td></td>
</tr>
<tr>
<td>- Respects class dynamics - Presents clear ideas - Listens to others - Asks relevant questions - Challenges ideas - Maintains respect for others</td>
<td>- Thoughtfully presents ideas - Listens intently - Works to involve others - Listens to others points of view - Relevant questions</td>
<td>- Intent of making points heard</td>
<td></td>
</tr>
</tbody>
</table>

89
<table>
<thead>
<tr>
<th>Progression of Growing Ideas</th>
<th>Questions, opinions in depth with topic areas</th>
<th>Follows discussion</th>
<th>- Ideas are static</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Synthesizes ideas</td>
<td>- Clarifies &amp; draws illustrated connections</td>
<td>- Summarizes ideas</td>
<td>- Often off topic</td>
</tr>
<tr>
<td>- Connects content and context within discussion</td>
<td>- Draws upon experience to highlight understanding</td>
<td>- Occasionally takes initiative to advance own &amp; others ideas &amp; thinking</td>
<td>- Individualizes statements</td>
</tr>
<tr>
<td>- Rephrases for comprehension</td>
<td></td>
<td></td>
<td>- Disconnect between share and topics.</td>
</tr>
<tr>
<td>- Fosters support in group understanding</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attending to Work</th>
<th>On time</th>
<th>Most often present and engaged</th>
<th>Significantly late or disengaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Present</td>
<td>- Prepared and ready to begin</td>
<td>- May arrive/leave late/early &amp; distracted</td>
<td>Uses technology such as texting that can disrupt the learning environment and disrupt the flow of learning</td>
</tr>
<tr>
<td>- Engaged</td>
<td>- Actively engaged</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uses technology appropriately during class that relates to the topics discussed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Bibliography


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