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The changing classroom: a thematic analysis on the impacts of the Coronavirus pandemic on children and educators of a Montessori school

Briley Holbrook
University of Tennessee at Chattanooga, gpf515@mocs.utc.edu

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Briley Holbrook

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Project Director: Dr. Bethany Womack

Examination Committee: Dr. Krysta Murillo

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Abstract

The Coronavirus pandemic of 2020 has drastically changed day-to-day functioning in American culture and the outlook of many essential institutions, specifically the education system. A halt in learning for most American school children in the spring semester of 2020, as well as necessary adaptation of the day-to-day functions of educational facilities in the fall has altered the learning environment for children and educators like never before. Research on historical disruptions in education, such as natural disasters and public health crises, provide a partial framework for federal approaches to the modern-day pandemic and their potential consequences. Modern technology has provided an array of alternatives to traditional learning and family engagement, yet barriers still exist, especially in early childhood settings. Specifically in classrooms that rely on sensorial and manipulative-based learning, historically utilized in the Montessori method, online learning is simply no substitute to the potentials of in-person instruction. The purpose of this study is to investigate the evolvement of the classroom environment in response to the pandemic through the eyes of one small Montessori school and draw conclusions on how these shifts are impacting the entire wellbeing of school children, their educators and beyond. Using a qualitative thematic analysis framework and data gathered from multiple interviews conducted with teachers and faculty, my project will develop and offer overarching axial themes that may be applicable to a larger body of modern educators.

Keywords: Coronavirus, shifts in education, Montessori method, Maria Montessori, online learning, early childhood education

The Changing Classroom: A Thematic Analysis on the Impacts of the Coronavirus Pandemic on Children and Educators of a Montessori School

In March of 2020, the spread of the novel Coronavirus (SARS-CoV-2) called for the rapid response from educational facilities around the world to consider school closures. On the 18th of March, the UN Educational, Scientific and Cultural Organization released that approximately 107 countries around the globe had made the decision to close schools, and estimated that these decisions affected 862 million children and students, impacting about 50% of the world's student population (Viner, et. al, 2020). Nationwide considerations for school closures noted the impacts of prior public health crises, like the 1918 Influenza pandemic and more recent H1N1 outbreaks in 2009, as a scope of comparison for the modern pandemic. One study analyzing the impacts of social distancing and other preventative measures on the 2009 outbreak concluded the success of school closures, stating the following, "School closure, whether proactive or reactive, appears to be moderately effective and acceptable in reducing the transmission of influenza and in delaying the peak of an epidemic, but is associated with very high secondary costs" (Rashid, et. al, 2015).

Initial responses to the Coronavirus pandemic seen across universities and K-12 institutions alike was implementation of increased cleaning protocols, cancellation of mass gatherings and sport events, and eventually sending on-campus student residents home for the foreseeable future. The quick progression of the state of the pandemic shifted schools to a position where in-person learning would not be the safest option, leaving the education sector to opt for online learning alternatives in lieu of face-to-face instruction (Liguori & Winkler, 2020). The utilization of online learning platforms, like Zoom, Google Meet and beyond gave institutions the opportunity to continue learning for students in a new way. For many institutions

and work environments, remote learning and conduction of work has shown successful results and shines a light on the accessibility and reach of technological learning systems. Yet, many barriers exist in distance learning, especially for early childhood education. These barriers can include and are not limited to: access to technological resources, problems with internet access, accessibility to a caregiver to assist in the child's learning, and for early childhood environments specifically- the infeasibility of virtual learning for preschool or toddler-aged children. It is essential to first analyze the public health response for schools in the present-day in comparison to similar closure scenarios in the past to understand the progression towards online learning and the opportunities technological advances have provided for modern education. Then, the aforementioned barriers can be considered despite the advantages online education provides, and movement towards reopening schools in alignment with CDC guidelines in the fall of 2020 can be better understood. For early childhood aged children between the ages of birth and 8 years old, in-person learning is considered essential, especially for programs whose curriculum is based in sensorial or hands-on instruction. Jean Piaget's Theory of Cognitive Development can be considered in conjunction with Montessori methodology's emphasis on sensorial learning. Piaget suggested that the first two stages of development, the sensorimotor stage from birth to 2 years, and the preoperational stage from two to six years, rely heavily on the use of the senses in building an understanding of the child's environment and developing symbolic thinking skills (McLeod, 2019). Montessori methodology builds on this foundational psychological understanding of the child's brain functioning in the early stages of learning and incorporates the use of physical objects in the classroom that support cognitive development.

For many Montessori and alternative schools, online learning simply does not equate to the in-person experience, especially for children in their earliest years of development. The

purpose of this study is to analyze the adjustment of the learning experience for preschool children and their educators as a result of COVID-19 through the eyes of one small Montessori school. Additionally, this project aims to identify overarching themes and connections that emerge from the data that may be applicable to a larger body of educational research.

It is important to address my positionality as the researcher in the context of pursuing the content of study and how my background and experiences have shaped the development of this project. I work as a Montessori teacher at the school under investigation in this project, alongside the interview participants--fellow Montessori educators and staff with whom I share a passion for Montessori curriculum as an alternative to early learning. These individuals and I have experienced a commonality with the masses of other educators and staff working to keep children learning during what is an unprecedented time in history. The research question I pursued was thus, based upon my own experience of being an educator, specifically in Montessori education, and in the interest of documenting the experiences and emotions of educators and children amidst post-Coronavirus classrooms. Upon approaching the study with the aforementioned situation in mind, I wanted to establish my position as the primary researcher in conjunction with my personal stakes in Montessori education, without asserting or influencing the data in any way or making any assumptions in terms of results. I maintained my position as the investigator in these interviews by asking questions informed by my experience as a Montessori teacher and with my prior knowledge of the participants, but without suggesting or offering coercive explanations. I relied primarily on participant feedback in response to questions in developing thematic codes. Immediately following each interview, I reflected upon moments when my position as the researcher added to, influenced or guided the conversation in some way. As I sorted through and corrected the four transcripts, I noted these inevitable influences

apparent in the data; for example, I highlighted any phrases used during the interview that expressed my placement within the school or my role as a Montessori teacher.

Historical Disruptions in Education

It is necessary to consider significant historical examples in the U.S. pertaining to school closures in order to establish an understanding of the modern framework for mitigating COVID-19 and suggestions for schools. There is a large body of research devoted to analyzing the repercussions of unanticipated school closures on children and youth in the United States. Post-disaster recovery research, as well as research on public health disasters, exemplifies the potential long-term effects prolonged school closure can have on children in terms of: academic achievement, socioemotional skills, self-concept, school adjustment and beyond (Duncan, et. al, 2007). Research on displacement scenarios, such as for natural disasters like Hurricane Katrina (Barrett, et. al, 2008), emphasize the mental toll transitions from school closures can have on impacted students.

Similarly, historical public health emergencies, such as the 1918 Influenza pandemic and later H1N1 outbreaks in 2009, utilized school closures to varying degrees in efforts to intervene in the spread of disease. A study conducted at one school in Arizona from the years 2005-2008 looked at ongoing influences of closures on students, educational staff and grander institutions; suggesting mitigation efforts for Influenza and H1N1 have had "profound legal, economic, and social implications" (Wheeler, et. al, 2010, p. 52) on these individuals and on the American education system. Although school closures as a disease-control tactic can indeed be useful and essential in many ways, these shutdowns could have subsequent negative impacts on the physical and mental health of school children (Wang, et. al, 2020). Understanding former approaches by

public health experts to alleviate the health-related consequences of the spread of disease is essential in the discussion of modern guidelines for educational facilities and movement towards online delivery methods of educational instruction.

The Influenza pandemic of 1918 and more recent outbreaks of H1N1 in 2009 are most closely analogous with modern Coronavirus public health decisions. The CDC, or Centers For Disease Control and Prevention, has emphasized the impact school closures have on slowing down exposure of airborne disease. In a document outlining specifications for school closures, the CDC states, “There is a role for school closure in response to school-based cases of COVID-19 for decontamination and contact tracing (few days of closure), in response to significant absenteeism of staff and students... or as part of a larger community mitigation strategy for jurisdictions with substantial community spread” (CDC, 2020). Much of the framework decided upon in the present-day has built off of research concerning school closures from aforementioned examples of disasters, weather-related events or public health crises. Likewise, retroactive research on the repercussions of school closures on academic achievement, reading comprehension and math skills, as well as potential social influences have been identified (Duncan, et. al, 2007). In contrast today, the outlining factor of difference in the Coronavirus pandemic is the accessibility of modern technology and opportunities for educational instruction for K-12 institutions and at the higher education level because of these technological advances. Though these advances have transformed the opportunities for learning environments and potentials for student and family engagement, obstacles still exist for many students, especially those in their early childhood years. Still, the relative recency of such advances calls for further investigation in terms of their effectiveness as educational tools for early childhood learners.

Technology Use in Education and Limitations for Preschool Aged Children

The variety of technological resources available in the modern age has changed the face of education and the potentials for virtual learning. Technology allows students the ability to access information immediately and exposes them to a wide variety of learning tools, as well as opens opportunities for self-paced learning (Zabatiero, et. al, 2018). Still, many barriers exist in online-only education, especially for early childhood classrooms with young learners. First, online learning is incredibly new to most families, and many issues could arise in availability or competency of parents to deliver this learning. One qualitative study analyzing the impacts of online learning on students with exceptionalities considered the barriers present for many families, stating, "...caregivers may have little knowledge of and experience in the delivery of educational programs. Furthermore, some caregivers' work schedules, child care responsibilities, or efforts in caring for an ill family member, may prohibit a consistent routine of educational programming" (Stenhoff, et. al, p. 212). These factors create a barrier that can greatly impact, and even hinder, a child's learning and put some children at an academic disadvantage.

Accessibility to resources is another barrier to online learning that can disproportionately impact minority communities and English learners. Research on the "digital divide" that exists especially for racial and ethnic groups in the U.S. concluded that 27% of American Indian / Alaska Native students, 19% of black students and 17% Hispanic students had no internet access; in comparison to 7% of white and 3% of Asian students (Musu, 2018). Locally, Hamilton County Schools has made an effort to combat this divide for ESL students amidst the Coronavirus pandemic and transitions to online learning. According to the Chattanooga Times Free Press, Hamilton County schools allotted $13,000 to go towards instructional learning tools for English learners in the district, and budgeted to have a total of 108 ESL specialists across the

county, which will impact a total of 3,700 ESL students currently enrolled for the 2020-2021 school year (Brand, 2020). This effort to provide needed resources to English learning students in Hamilton County contributes to closing the achievement gap, or the discrepancies in academic performance between groups of students (Ansell, 2004), experienced on a larger scale.

For early learners, limitations exist outside of those aforementioned, and the feasibility of providing adequate online education for preschool and toddler-aged students is worth considering. A limited amount of research exists on the implementation of online learning platforms for pre-kindergarten learners in the United States, as this field of research is quite new and emerging post-Coronavirus. One recent qualitative study conducted in Romania most closely equates to the surmised question on the impacts of online learning for preschool children and their educators. The researcher interviewed multiple teachers from a Romanian preschool and gathered their perspectives on barriers to online instruction that exist for early childhood learners, concluding confidence and competence in the pedagogical and technological skills, the obstacle of integrating digital media, maintaining children engagement and poor technological infrastructure to be the most prevalent (Miulescu, 2020). Additionally, the study emphasized the difficulty of translating face-to-face curriculum and lesson plans into content that could be used in an online setting, that is both engaging and appropriate for young learners (Miulescu, 2020). This is especially relevant in terms of the Montessori environment and post-Coronavirus changes, as these classrooms have historically relied on physical manipulatives and the use of the senses as foundational aspects of instruction.

Another important component to consider in the use of digital methods of learning for early childhood-aged students is suggestions for screen time limitations for these age groups. According to American Academy of Child and Adolescent Psychiatry, the screen time

recommendations for children 18 months and younger is none, besides video chatting with an adult; children between 18 and 24 months are suggested to only watch a limited amount of educational programs alongside a caregiver, and preschool-aged children 2-5 should limit non-educational screen time to 1 hour per weekday and 3 hours on the weekends (AACAP, 2020). These suggestions for more restricted screen time schedules for young children proves the process of translating early childhood classrooms into an online environment to be even more infeasible.

In the spirit of traditional Montessori methodology and in alignment with recommended screen time guidelines, Montessori preschools aim to provide a learning environment that relies on work in the physical classroom and that is mostly absent of technological components for instruction. The following section summarizes the Montessori method in relation to hands-on learning and the issues with replicating such pillars of learning in an online platform.

The Montessori Method and Hands-On Learning

The Montessori Method is an alternative approach to traditional methods of early childhood learning. The development of this approach to education was created by Dr. Maria Montessori, an Italian physician that extensively studied early childhood learning and development and emphasized the natural curiosities of the child and their innate interest in learning (Montessori, 1967). In a Montessori classroom, children utilize different manipulatives to develop and hone their sensorial skills, and learn a plethora of concepts beyond traditional core subjects, including disciplines such as: care of self, care of the environment, grace and courtesy skills, fine motor, self-expression, self-regulation, and beyond (Montessori, 1967). One crucial component of Montessori's approach to learning is the incorporation and utilization of

physical objects, like sandpaper letters to teach math or classic Montessori manipulatives like the Pink Tower and Red and Green Rods to teach spatial awareness (Lillard, et. al, 2017). Montessori classrooms also use many other physical manipulatives for water and dry transfer lessons for fine motor development, physical and realistic examples of objects in the environment, and music bells and shakers for self-expression (Montessori, 1967). Additionally, many skills teaching independence are learned in the physical classroom, such as mastery of meal cleanup, which incorporates skills such as cleaning a table, sweeping, and unpacking and repacking lunchboxes (Montessori, 1967). Vocabulary and language-development skills are embedded throughout everything used in the Montessori environment, and many Montessori classrooms label items in the environment to increase exposure to words and introduce synthetic phonics for pre-reading and writing lessons (Montessori, 1967).

Montessori method-based programs around the world have been praised for this nontraditional approach to educational instruction and the potential these programs provide for early learners. One study comparing 70 Montessori students to 71 non-Montessori students determined the discrepancy between the two methodologies, suggesting that Montessori students performed better academically and on social cognition tests, were more mastery-oriented, and expressed a greater enjoyment of school (Lillard, et. al, 2017). Furthermore, this study cited evidence suggesting that Montessori education has worked to substantially reduce the achievement gap based on income, explaining, “Whereas lower income control children were performing a full standard deviation lower than higher income control children by the end of preschool, the difference in income groups in Montessori was just a third of a standard deviation” (Lillard, et. al, 2017, p. 12). The disruption of in-person instruction in response to the Coronavirus pandemic can thus, be considered in conjunction with the Montessori experience

and if its successes or scope of instruction could be diminished by the unavailability of in-person learning during the spring semester of 2020. The following section encapsulates the research question designed to address the reality of such changes in a modern Montessori classroom.

Research Question

In the midst of an unprecedented time in the world, education systems everywhere are still doing their best to provide educational alternatives and classroom adaptations to keep students safe and learning. The primary question of interest for this project surrounded the teacher and students experiencing first-hand changes to the learning environment, and the directors and personnel working to organize and maintain these recommended adjustments.

How has the classroom evolved in response to necessary changes due to CDC recommendations for COVID-19 response? How do Montessori teachers perceive COVID-related changes to be impacting themselves, their students, educational staff and parents? Are any of these perceived changes or impacts Montessori-specific?

This study will address these questions using a qualitative interviewing method and resulting responses from teachers and administrators of a Montessori school.

Methodology

Upon deciding on a research method most applicable to the efforts of this study, I knew I was interested in an instrument of research that utilized open-ended interviewing and would allow for a natural structure of conversation to flow. Qualitative interviewing methods were most appropriate for the four interviews conducted, each ranging from 35-50 minutes in length. Qualitative interviewing, as explained in The SAGE Encyclopedia of Educational Research,

Measurement, and Evaluation, should develop "...contextualized and individualized data from interviews" and "questions should be specific to participants' experiences and responses rather than generalized" (2017). Semi-structured interviews were used to extract information from the participants in this way, considering each participant's personal experiences, as well as the background of the primary researcher, and how these experiences influence the data. Additionally, the researcher should aim to conduct qualitative interviews that highly consider the subjectivity, relationality, and contextuality of the data and should reflect both individually and with their research team on how to address such influences (SAGE, 2017). With these considerations in mind, I developed a semi-structured interview guide, which was gently utilized to guide the direction of each of the four interviews. I follow the suggestions for the semistructured protocol, including using questions on an interview guide by not always asking them in the exact same order, following the open-ended responses of the participants (SAGE, 2017). The interview guide utilized is listed here:

Semi-structured Interview Outline:

How has COVID-19 impacted your role as an educator?

How has the COVID-19 Pandemic changed the physical environment of the classroom?

How have cleaning procedures changed in the classroom?

How has COVID-19 changes impacted your methods of teaching?

How has COVID-19 impacted children working together in groups? Classroom sizes?

How has COVID-19 impacted Montessori-specific curriculum or classroom setup?

How has COVID-19 impacted teachers in terms of workload?

How have changes due to COVID-19 impacted teachers physically and emotionally?

How have changes due to COVID-19 impacted students physically and emotionally?

How has COVID-19 impacted family interaction with the classroom?

How has COVID-19 changed requirements for field trips or after-school activities for families?

How has COVID-19 changed meal preparation protocols?

Research Participants and Confidentiality:

The participants are all educators and/or personnel of a Montessori school and are work colleagues with the primary researcher. Each participant signed an Informed Consent form in alignment with the University of Tennessee at Chattanooga Institutional Review Board guidelines outlining the purpose of the study and what they will be asked to do, as well as information on anonymity and confidentiality. Contactless interviews were conducted and recorded via Zoom, which translated the conversations into transcript data. The interview transcripts were kept in Cloud protected storage and only made available to the primary researcher and the faculty director, and were then destroyed following the completion of the project.

Length:

Each interview reserved one hour of time to give plenty of room for in-depth conversation and narrative responses. Each concludingly ranged from 30-55 minutes in length.

Thematic Analysis and Coding

Thematic analysis is defined by Braun and Clark as "a method of identifying, analyzing and reporting patterns in the data" (2006) (Savin-Baden & Major, 2013, Chapter 28). Fundamentally, thematic analysis uses a process of recovering themes in gathered data, and these themes are "embodied and dramatized in the evolving meanings and imagery of work" (Savin-Baden & Major, 2013, Chapter 28). Using thematic analysis, the researcher should first familiarize themselves with the data and get comfortable with it prior to performing any sort of

editing. Then, codes can be generated from the given data and through careful analysis and review of the data, themes can be identified. Thematic analysis most closely aligned with the objectives the primary researcher had upon approaching the research question. Immediately after completing each of the four interviews, I downloaded each of the interview transcripts and edited any misinterpretations or grammatical errors. Then, I analyzed each transcript and highlighted passages or responses that stood out as significant. I coded my initial reactions to the given data and made notes on my positionality as the researcher and gradually examined its impact on the data. I broke the data down into as many themes as possible, continually sorting through and organizing the data into each theme. Then, the interview responses were organized into subthemes, and later broken down into larger organizing themes. Finally, I dedicated a considerable amount of time to consider the nuances of the highlights of the data and develop four axial themes ever-present in the data.

Figure 1 represents examples of open codes with text segments:

Text Segment	***Open Coding***
"I do a lot of phone calls" "That was the first thing we did was to reach out to our families and, let them know that we were going to do all that we could to help their children" "I don't see how we can achieve that group situation. We just can't do it"	Communication and engagement
"I've seen the kids react really well" "They are just resilient. They just go with with the flow" "They really just reach out to each other"	Resilience- children
"It's been rough, but I'll be ready for a nap after" "I am up so much work"	Teacher attitudes: workload and overwhelm
"The kids [have] already adjusted with the masks, so it seems normal" "If you are wearing a mask, you can't see how that (sound) is formed"	Physical classroom environment: masks

Figure 1

Figure 2 represents the organization of the open codes generated into grander axial themes:

Axial Theme	***Theme Description***
Physical classroom modifications	Cleaning, classroom structure, masks, Montessori-specific limitations, adjustments in pedagogy, utilization of technology
Communicative and Engagement efforts	Online instruction and packets, parental engagement (via phone or Zoom calls, email and text) teacher-parent communication, outings/family event restrictions and outreach efforts
Impacts on Mental Health	Teacher emotions/attitudes, workload/overwhelm, parent emotions and adjustment, risk considerations, support
Resilience	Children resilience, normalization, children emotions and socialization change

Figure 2

The following section breaks down each of these themes in depth in parallel to evidence from the transcript data.

Axial Themes

Physical Classroom Modifications

Description: cleaning, classroom structure, masks, Montessori-specific limitations, adjustments in pedagogy, utilization of technology

Cleaning, Classroom Structure and Montessori-specific Limitations

From the study, the data shows that teachers all agreed on the increase in the amount of cleaning designated in post-COVID classrooms. Participants expressed that the cleaning process increased from 20-30 minutes to 45 minutes to 1 hour each day, and that cleaning procedures were much more in depth and extensive. One participant noted that they also used a special disinfectant designed for Montessori materials, which are “primarily wood-based materials". Participants also expressed the need to hire an additional staff member in order to keep up with the increased cleaning procedures and vigilant efforts to avoid cross-exposure.

In terms of the physical makeup of the classroom, participants all suggested that both the preschool and toddler classrooms underwent some organizational change to better accommodate CDC guidelines for social distancing. This included overall group sizes, and in-classroom distancing and reorganization measures. One quote from a participant exemplifies this change,

“The challenge was that, now we've got to set up a different environment. Instead of having one big classroom with all the children, we decided to divide them into two pods. So no more than 10 kids in each pod.”

All four participants mentioned acts of vigilance undertaken in the classroom, including immediately removing and sanitizing any lessons that a child sneezes or coughs on, and making sure the child washes their hands if they sneeze, cough or put their hands in their mouth. Two participants mentioned that children sanitize their hands in between every lesson they use, and make sure to do group handwashing before and after lunch. Participants all mentioned in some way that this vigilance has called for educators and staff to be more alert and observant about monitoring the classroom and ensuring cleanliness.

A quote from one teacher embodies teachers' attitudes towards vigilance in health and safety:

"I think the biggest impact is the need to be aware of the health and safety of all the students while teaching during this pandemic. That's number one."

Another Montesorri-specific limitation expressed by all four participants was the change in the children's snack routine. One participant summarized the distinctive routine and the independence skills involved for the child:

"It was unique, and it was beautiful. That's one of the things that when we did school tours that parents always appreciated. We have had a snack table setup and the children take turns bringing in snack. And it's always healthy and nutritious like fruits, vegetables, cheese and crackers. And it was set up so the child could, after they had sanitized their hands, go up to the snack table, get a plate and then serve themselves. They serve their snack and then they go to the snack table and two children could have snack together. They could have snack anytime they wanted." "Now, we can't do that."

Masks

Another significant theme repeatedly discussed in every interview was the use of masks and face shields in the classroom, both by staff and students.

Participants had varying attitudes towards wearing masks and the limitations accompanied. Two participants stated that daily mask wearing can be *"hard",* others said it was *"normal"* or non-hindering. All participants expressed that mask wearing was necessary for keeping students safe. One participant stated that teachers wearing and encouraging masks was essentially a traditional Montessori lesson in Grace and Courtesy, and taught students about respect, a quality at the centerstone of the Montessori method (Montessori, 1967). This participant elegantly stated:

"We're living an example of being respectful to other people. That's why you wear the mask."

Another participant communicated similar thoughts in regards to the children's attitudes towards mask wearing and the role of the teacher in being a example:

"I do think it is a lot of Montessori (concepts) because at the base of Montessori is respect. We show it. We are examples, the teachers are examples. We're respectful to the children, we're respectful to the environment, respectful to the lessons, so that so much is a part of Montessori."

All participants suggested that children have dealt with mask wearing with ease, one stating they've done a "*great job"* with adapting to masks, and attributed this to Montessori structure and the encouragement of classroom normalization. One teacher stated:

“I think the kids have really adapted really well to wearing masks. We say in Montessori terms that a kid has “normalized” to the classroom. It's kind of like they've normalized to the mask wearing."

Participants said that some children as young as toddler-aged wore masks in the classroom, too. One participant shared a sweet story about a preschooler who chose to wear a mask throughout the school day:

"I had a little girl tell me today that her mommy told her she had to keep her mask on today because she can't get Coronavirus because they're gonna go see family for Thanksgiving. She said, "I want to see my family and I love to see my grandma. So I'm going to keep my mask on today.”

Pedagogy and Instruction

Each participant discussed changes in pedagogy and limitations to instruction and lesson planning in consequence of the current pandemic. Many of these included changes in the makeup of lessons and removal of lessons that were not in alignment with health guidelines. These included food preparation lessons and some lessons that utilized felt or cloth-based materials. One participant expressed that these changes call for teachers to think outside the box when preparing lessons:

“Just when you get ready to do a lot of lessons, you just have to rethink. Now, we did it this way last year, but now we can't do it that way because of COVID. So rethinking how you present lessons has been different."

Participants all suggested that these physical classroom changes were all necessary for implementing and maintaining a traditional Montessori environment in the midst of pandemic-related school closures and shifts to online learning. All four participants expressed the variation in a Montessori classroom in comparison to traditional classrooms, stating:

“Montessori is very hands on." “Montessori is a different curriculum. It's a different kind of learning for the kids, it's hands on."

Another theme in regards to pedagogical efforts expressed by one participant was communication barriers experienced by the use of masks. Especially in communication with English as a second language students, masks were prohibiting for teaching phonetic sounds. One participant explained that:

“If you are wearing a mask, you can't see how that (sound) is formed”.

A sufficient alternative to this barrier expressed by participants was the use of face shields in place of masks for teaching language lessons or when reading to students.

Communicative and Engagement efforts

Description: online instruction and packets, parental engagement (via phone or Zoom calls, email and text) teacher-parent communication, outings/family event restrictions and outreach efforts

Online instruction and packets

One topic of significance discussed frequently throughout all four interviews was the school's experience with transitioning to online learning in the earliest months of the pandemic. Participants explained that online Zoom meetings were offered for both toddler and preschool students, and were formatted to include group lessons, book readings and opportunities for socialization between the students and teachers. One participant explained that scheduled Zoom meetings were essential for providing a space for students to interact with their friends and teachers, and said that:

"It was really endearing how the students really loved to talk to each other. It was more about just keeping them connected to each other. And to the teacher- that was important. Letting them see the teacher and see each other was very important."

Thoughts on the success of online instruction in lieu of in-person options varied. Some participants suggested that preschool-aged children were able to engage in an online learning setting to some degree:

"They did seem attentive. They didn't seem restless. They listened."

Other participants expressed that children, especially those toddler-aged, had a hard time paying attention in online sessions.

"[The toddlers] had a really hard time paying attention." "[The toddlers] were not really engaged."

One participant also pointed out that some children were hesitant to engage in the online setting, stating that:

"[The children] were a little shy about participating."

Additionally, teachers sent home packets with preschool students that included materials that could be used to make Montessori lessons at home. These packets included crafts and materials like tweezers or scooping tools for fine motor skills for toddler children and more advanced language development, math, and cultural lessons for preschool children. Participants articulated that the packets were *"very valuable"* and *"worked much more than online learning".*
Teachers utilized a number of alternative resources in place of traditional Montessori manipulatives to create packets that were accessible, portable and easy-to-use. A quote from one participant embodies the beauty of the sensorial, hands-on aspect of Montessori curriculum and how transitioning to online learning called for creativity in lesson preparation and created some barriers in providing this environment:

"Our wheels just started spinning-- how can we reach out to our families, how can we still teach our children and not be in a Montessori environment because Montessori is all about hands on. That's how the children learn. But Montessori is not about all this paperwork. It's about using up all those wonderful manipulatives will have in the classroom. And that's the great thing about it."

Classroom Engagement and Outings

Communication and engagement with parents was another sub-theme discussed continuously across all four interviews. Participants expressed that opportunities for parents to engage in the classroom, as well as outings and social activities have been incredibly limited following Coronavirus-related restrictions. One participant explained:

"We can't have the parents at school like we did before. We had many programs where the parents come, like when we had the fall festival, it would be filled with parents. We would have open houses where the parents would come and watch their children do lessons and we had a Christmas party. So not only has the socialization for the children been limited, now it's limited to the parents too. The parents can't gather and get to see their child interact with other children and meet the other parents. And that was one of the things that the [school families] were so excited about being involved in the school was getting to know the other families and build those kinds of relationships. But right now with COVID. We can't do that."

There are less school-sponsored outings post-Coronavirus, participants explained. But outdoor alternatives that allowed for social distancing, like visiting the zoo or a local park, provided

opportunities for families to engage outside the classroom in alignment with heath guidelines. One participant said about outdoor meetings:

"I think meeting outside has been like an alternative that has been helpful."

Another added,

"We still have field trips and observe the standard requirements such as wearing masks and social distancing."

Parent-teacher communication

Participants expressed that parent-teacher communication has changed as well, and that teachers are more heavily relying on digital alternatives for communicating with parents than ever before. Participants explained that they utilized phone calls, Zoom meetings, email and text messaging as their main sources of communication. Also, participants explained that they utilized a digital platform for parents to track their child's progress in mastering different disciplines and skills, and where teachers can post photos of the child working on lessons. One participant stated that this way of communication has been *"just as effective"* as in-person discussion.

A barrier presented by participants was in outreach with Spanish-speaking families, and in how digital communication options were not always optimal. One participant explained:

"When you're communicating to a population that English is their second language, verbal communication is very important. And that's something we just can't do right now."

A participant also said that it feels "*less personal"* to meet digitally in comparison to face-to-face meetings.

Impacts on Mental Health

Description: teacher emotions/attitudes, workload/overwhelm, parent emotions and adjustment, risk considerations, support

Workload and Overwhelm

The most significant phrase mentioned across all four interviews was the word "overwhelming". Participants consistently expressed the challenges they faced and their feelings of overload throughout the conversations. The following quotations personify teachers' attitudes towards their increased workload:

""It's been a challenge." "It was overwhelming to begin with." "We just weren't prepared for it. I don't think we saw it coming. I don't guess anyone did." "It was overwhelming." "It was really a challenge." "That word overwhelming just totally explains it." "I am up so much work" "This school year is really added to our workload, because of the cleaning. Cleaning and lots of protocol."

Teacher emotions and attitudes

One of the most significant attitudes noted by participants was the drive to persevere for the sake of the students and a motivation to keep children happy and learning. All four participants expressed similar viewpoints surrounding this claim:

> *"At the end of the day, we did our best (to ensure) that the kids will be happy and learn something. You see that in the development of the kids, you know, the improvement."*

> *"The children are happy, the parents are happy, and they're learning. So it's working."*

> *"It's all about making sure the children are happy and the parents are happy too. That's important."*

> *"We just have to do what we can to make sure that our children stay safe and that we all stay safe and healthy."*

Risk Considerations for Teachers

Some participants communicated the risk factor involved in returning to in-person learning in the Fall of 2020 and how some teachers had to make the difficult decision of stepping out of the classroom due to health concerns. One participant explained teachers' decisions to leave the classroom and the concluding impact:

“Two teachers had to step down because of health issues and then coverage exposure risk, so that came about very quickly."

Teachers expressed that this decision is something all educators alike have had to make during this time. One participant expressed this decision and their own motivation behind choosing to stay in the classroom:

“I think every teacher just has to say to themselves: am I willing to risk it? And some teachers have had to say “No, I can’t risk it, and that’s totally understandable and I’m sorry for that. I just resigned myself to the fact that I love these kids so much that it's going to be okay"

Support from Parents and Staff

Participants expressed their gratitude towards fellow staff members for being willing to fill in the gaps when needed and persevering despite the mayhem. One quote from a participant exemplifies this appreciation felt:

"If somebody sees something that needs to be done. They do it. Everybody just jumps in and supports and helps each other."

Participants also made a point to express their thankfulness towards parents and families of the school in being understanding and vigilant amidst the chaos:

"I really thank God for the parents" "I've been very appreciative [of parents]”

"The parents are mindful and respectful of others enough to notify us [if their child exhibits symptoms]."

Resilience

Description: children resilience, normalization, children emotions and socialization change

Child resilience and classroom normalization

The normalization to the classroom environment and overall resilience of the child were sub-themes commonly discussed throughout the interviews. Some of the most common remarks regarding children and their resilience follow:

"The kids already have adjusted." "The kids already adapted." "They are just resilient. They just go with the flow." "They didn't miss a beat." "That was the biggest surprise that they just came in, happy, and were always excited about anything you show them or did with them."

All four participants expressed in some way that the environment was the children's *"new normal".* One participant regarded that the children were able to adjust with ease, stating:

"*It's kind of amazing how quickly they rebounded into the new normal."*

Another participant discussed how easily the children were able to normalize to the new world and changing classroom:

“They really understood it. By the time they came back in August, they were already pretty used to this new world that we're living in of masks and social distancing and they accepted that. Even the sanitizing their hands, which I thought would be hard, because they had to sanitize between every lesson. They did it. They were great. They just did it. They didn't complain about it. They didn't fuss."

Child emotions and adaptation to socialization changes

Participants shared that many of their students are very aware, and some even sensitive to, the changes they are experiencing in the classroom due to the pandemic. Participants said:

“I definitely have kids that are very aware of what's going on."

"They're definitely very aware of it"

“We have some that are very sensitive to it. They remember, and if they sneeze they're immediately like: "Wash my hands".”

One participant shared a story of a preschooler concerned about a friend touching him on the playground:

"I have one little boy outside saying like "He's touching me. We're not supposed to be touching because of COVID."

The participants all experienced that the children were joyful and happy being in the classroom, despite all the changes in their worlds. Participants shared the following anecdotes regarding children's cheerfulness in the classroom:

"The children were so excited to be back. They wanted to be at school. They wanted to be in their classroom doing their lessons being with their friends and their teachers. So they were very, very excited to be back."

""I see happy little children when I'm at school."

"I think the biggest blessing to me is that these children would come in every morning just happy to be there."

"And they're happy. They're very happy. It's an accomplishment."

One participant beautifully explained the intrinsic joy that the children expressed when working in the classroom. The participant said**:**

"That was the biggest surprise, that they just came in, happy, and were always excited about anything you showed them or did with them. It was their joy. Their joy is always there."

Discussion

A number of insights and observations can be drawn from the conclusions of the interview data. First, it can be surmised that the physical environment of the classroom has, in fact, changed following the impacts of the Coronavirus pandemic. Cleaning procedures, protocols and hyper-vigilance surrounding hygiene has increased and added to teachers' workloads, and has required the traditional Montessori environment to shift in alignment with health guidelines. Classroom sizes have decreased, shifting from a framework with two co-teachers and up to 20 students to minimized classroom pods consisting of one teacher and up to 10 students. Masks were significantly discussed across all four interviews, and teacher attitudes towards mask-wearing seemed to suggest that both educators and students have adapted to a post-Coronavirus world, which participants dubbed the "*new normal*". Although masks have created some barriers in terms of teaching language and phonetic sounds, the use of face shields have helped to address this barrier and can be used as an adequate substitute.

Opportunities for parents and families inside of the classroom have certainly been limited, and similarly, engagement and socialization events have decreased dramatically. The way teachers communicate with parents has changed, too, and teachers have become increasingly more reliant on digital technology for communicating with their families. Teachers expressed that although communication efforts may have changed in lieu of face-to-face interactions, these alternatives have sufficed, and some participants suggested that online communication may have even been more effective than former modes of communication. Additionally, participants conveyed that support from parents during this time was pivotal to the program's success, and families' patience and willingness to adapt to the adjustments required

contributed tremendously to the ease of the transitions from in-person learning to online instruction.

The interview data suggests that online modes of instruction for preschool and toddler-aged children seemed to be ineffective in comparison to in-person instruction, especially for Montessori classrooms. In conjunction with Miulescu's 2020 study, some participants expressed that children, specifically those toddler-aged, had a hard time engaging and participating in an online platform. This digital method of learning was unfortunately no substitute for the traditional Montessori method and its hands-on environment for either age group. The participants stressed the importance of the physical manipulatives utilized in the Montessori classroom and how incorporation of the five senses is essential in this methodology. Dr. Maria Montessori calls this incorporation "sensorial learning" (Montessori, 1967), and continuously points to the use of the senses in helping the child make connections between themselves and their environments. Participants suggested that this type of learning is much different and more hands on than traditional methods, making the application of methodology in an online setting rather difficult, if not impossible, to replicate.

Teachers expressed that their approach towards lesson planning and general pedagogical choices have changed as a result of the pandemic and subsequent protocols. Teachers must think outside the box to create lessons that engage the senses and teach fundamental Montessori skills without compromising students' health to create the safest work environment possible for both learners and educators. This has resulted in a change in what lessons can be utilized and which ones need to be pulled from the shelves. Primarily food preparation and lessons using absorbent fabrics have been removed for the time being.

Teachers also highlighted the overwhelm and increased workload collectively experienced in the classroom succeeding COVID-19 guidelines and necessary procedures. Although the entirety of the participant pool expressed their sense of overwhelm and heightened work-burden, teachers also expressed that their motivation to keep their students healthy and learning in a Montessori environment encouraged them to persevere past the flood of work. Some participants expressed the risk each teacher had to face before returning to the classroom, and how unfortunately, some teachers were not able to face this risk due to personal health concerns. Teachers explained that at the end of the day, seeing happy children in the classroom made the ever-present changes and risks considerably worthwhile. Dr. Montessori characterizes the qualities and traits unique to a Montessori educator and how these characteristics contribute to their attitudes towards the classroom and their students. She explains that the educator, "must acquire a moral alertness which has not hitherto been demanded by any other system, and this is revealed in her tranquility, patience, charity and humility" (Montessori, 1967, p. 150). The interview data seems to embody Dr. Montessori's personation of the educator beautifully and exhibiting this felt sense among Montessori educators of a moral and selfless obligation to the young learner.

The data suggests that students are adapting with ease to the adjustments in the classroom environment, and have exhibited a great amount of resilience in response to these changes. Dr. Montessori terms this adjustment "normalization" (Montessori, 1967), a fundamental in Montessori education that explains a child's adjustment to the predictable and consistent environment prepared by the teacher. Author Katherine Futrell writes about the essentiality of normalization in the Montessori classroom in *The Normalized Child:*

"This normalized child is the image which Montessori teachers keep uppermost in their minds. This is what we are striving for, what we hope to achieve. However, this child will appear only if we conscientiously prepare ourselves and our classrooms" (1998, p. 93).

This concept of normalization may speak to the assertion that the students of the Montessori school of study expressed resilience and were well-adjusted to the disruptions in their classroom environment.

In the same vein, not only had children normalized to their changing classroom, children were happy and excited to be back to the in-person learning environment. The interview data suggests that although students were aware and conscious of the ever-present transformations in the classroom due to COVID, they were not emotionally hindered by these facets of change. Children were excited and hopeful in the classroom, were able to make new friends amidst their classroom roster disruptions, and overall seemed content. Dr. Maria Montessori suggests the child's joy and desire to learn in the classroom may be specific to Montessori methodology, as it creates a predictable environment that encourages the child to learn naturally and discover their independent interests, which creates something she refers to as "spontaneous joy" (Montessori, 1967). This sense of joy was certainly observed by the participants throughout their experiences working with Montessori children in a post-Coronavirus classroom. One participant gracefully conveyed their experience working closely with children in a Montessori classroom and how their natural interest in learning and the inherent glee they expressed as a result sets an example that we could all gain something from. The participant delightfully stated:

"That's the beauty of children. Children show you the way and if we will just step back and watch them, they will. You'll learn something from them every day."

It is evident from the conclusions of this research project that although the modern-day classroom is changing as a result of necessary guidelines in alignment with the Coronavirus pandemic, children are irrepressible and have the same desire to learn and socialize, regardless of the barriers and discrepancies presented to them. Likewise, Montessori educators and educational staff are acquiescent in their desires to keep children learning in the physical classroom by whatever means necessary, and have taken on a subsequent increase in workload and responsibility with pride. It stands to reason that some of the components of children's resilience may be attributed to the structured and peace-oriented environment provided by Montessori methodology, and how these aspects of respect and peace are reinforced in the home and by their educators. The results of this study may be applicable to a larger body of educational research concerning classroom and pedagogical practices in or out of the Montessori environment, as well as expressed student resilience and the role of the modern educator.

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