Volume 3, Issue 2
Fall 2017

Journal of Montessori Research

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A Publication of the American Montessori Society

Journal of Montessori Research

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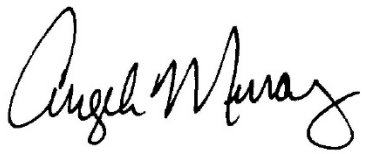
November 2017

From the editor:

I am pleased to report that the *Journal of Montessori Research* has received well-deserved recognition from two important sources. First, the publication was selected to be indexed in ERIC (Educational Resources Information Center), the most widely used index of education-related literature. ERIC is supported by the U.S. Department of Education's Office of Educational Research and Improvement and contains journal articles, research reports, curriculum and teaching guides, conference papers, dissertations and theses, and books. Second, the *Journal of Montessori Research* is now included in the Directory of Open Access Journals (DOAJ), a community-curated, online directory that provides access to and indexes high-quality, open-access, peer-reviewed journals. The *Journal* also received the DOAJ Seal of Approval, which is a "mark of certification for open-access journals, awarded by DOAJ to journals that achieve a high level of openness, adhere to Best Practice and high publishing standards" (https://doaj.org/faq#seal). This recognition would not have been possible without the hard work and dedication of everyone involved.

I am also happy to introduce the second issue of the *Journal of Montessori Research* for 2017, which includes three articles representing diverse research approaches and topics. The first is an investigation of the implementation of a homework policy in a charter school through student work samples, student interviews, a teacher focus group, and observations. The second article is an action research project examining the impact of reading choice on student engagement and comprehension. The last article is an analysis of archival documents related to Montessori education's introduction and growth in Rhode Island from 1913 to 1940, illustrating a historical perspective that can inform current Montessori initiatives working within complex education and policy contexts.

Sincerely,



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A publication of the American Montessori Society
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Journal of Montessori Research
2017, Volume 3, Issue 2

Homework Policy and Student Choice: Findings From a Montessori Charter School

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Keywords: *charter, elementary, homework, Montessori*

Abstract. The use of homework has been a controversial topic in education for many years: what types of homework to give, how much, and how often. In previous years, Ocean Montessori School (a pseudonym), the site of this study, offered homework like that of traditional public schools, such as worksheets and rote skill practice. Feeling conflicted about the misalignment between traditional homework and Montessori practices, the school administration changed the homework policy for the 2016–2017 academic year. The new policy encouraged students to choose what they wanted to do each night for homework. This study examines the views and practices of the teachers, students, and parents involved in the new homework policy. Data were collected from parent surveys, teacher focus groups, student interviews, observations, and student work samples. The findings indicate that, although students enjoyed the proposed homework change, it lacked sufficient structure for parents, and students needed support from teachers and parents to engage in meaningful homework tasks.

The use of homework has been a controversial topic in education for many years: What types of homework to give, how much, and how often? Currently, it is up to individual Montessori schools to make decisions on homework assignments, as no guidelines or suggestions are provided by the American Montessori Society (AMS), the Montessori Accreditation Council of Teacher Education (MACTE), the Montessori Educational Programs International, or the Association of Montessori Internationale/USA (AMI/USA). The Montessori Foundation (2017), however, advises that Montessori homework should be "meaningful, interesting assignments that expand on the topics that they are pursuing in class" ("Is Montessori Opposed to Homework Section," para. 1), but it does not provide guidelines for teachers or families on how to implement these assignments.

Previously, Ocean Montessori School ([OMS]; a pseudonym), the site of this study, offered homework like that of traditional public schools, such as worksheets and rote skill practice. Dissatisfied with how this kind of homework failed to align with Montessori practices, the school administration decided to abandon traditional homework for the 2016–2017 academic year. Under the new policy, students were given a choice in what types of work to do. As researchers, we wanted to know what happened when such a policy was enacted and what challenges teachers faced when implementing the new policy. As such, this study followed the students in one classroom to see what types of work students selected and how and why they chose to present the homework to the class. In addition, OMS teachers participated in a focus group to share their homework practices and their thoughts about homework assignments and the new policy.

Published online November 2017

Literature Review

Because our research focused on homework, Montessori curriculum, and student choice, we provide a literature review of each of these topics, examining previous research on homework, particularly in the Montessori curriculum. It was important to determine how the new homework policy may align with key features of Montessori theory. Given the encouragement of student choice, an important factor in Montessori practices, we also looked for literature that discussed how student choice in homework affects student performance and engagement.

Homework

Much like other education-related topics, the reactions to homework have swung from one extreme to the other, particularly since the enactment of the No Child Left Behind Act (2002). Researchers found that homework has little impact on the academic performance of elementary-aged children (i.e., kindergarten through grade 5) but increases as students enter middle school (Cooper, 2001; 2006; Cooper, Robinson, & Patall, 2006; DeNisco, 2013). Other researchers, however, recognized that homework can be appropriate in moderation for younger students, helping them develop self-regulation strategies (Ramdass & Zimmerman, 2011).

Early research on homework suggests that, while homework does not significantly affect elementary-aged children's performance on assessments, it does affect student attitudes (Cooper, Lindsay, Nye, & Greathouse, 1998). Researchers found that homework was associated with negative student attitudes at the second- and fourth-grade levels (Cooper et al., 1998). Similarly, Galloway, Conner, and Pope's (2013) regression analysis found that students at the high school level reported increased stress and lower rates of well-being when the quantity of homework increased. However, research also showed that most parents (60%–75%) thought their child received an appropriate amount of homework each day; 55% of parents reported that their child had an hour or less of daily homework to complete (Brown Center on Education Policy, 2014; Noel, Stark, & Redford, 2016).

The focus of research on homework has shifted from student attitudes and appropriateness of homework in the late 1990s and early 2000s to the use of technology and differentiation strategies in completing homework assignments. In the last 5 years, research on homework practices at the elementary level focused primarily on three areas: technology, special education, and parent involvement. Studies focusing on technology examined the use of flipped classrooms (i.e., in which students learn content at home and online and complete corresponding activities in class) and student access to technology when completing assignments; they found that the use of technology and flipped classrooms increased student engagement and enjoyment of the learning experience (Gecer & Dag, 2012; Jeong, González-Gómez, & Cañada-Cañada, 2016; Schmidt & Ralph, 2016). The studies that focused on special education attended to student needs in completing homework, particularly for those with learning disabilities (Blicha & Belfiore, 2013; Little, Hart, & Schatschneider, 2016; Mautone, Marshall, & Costigan, 2012). These researchers noted that the challenges students experienced with homework varied depending on disability, medication, family support, and other factors.

The third area of homework research focused on parent involvement in homework. Studies such as that by Núñez, Suárez, Rosário, Vallejo, Valle, and Epstein (2015) found that parental involvement with homework had a greater effect on academic achievement in the middle and high school levels than in elementary school. Ndebele (2015) found that parents of higher socioeconomic status were more active in their children's homework completion than those of lower socioeconomic status were. Finally, the ways in which parents were involved in homework had a direct effect on student performance; autonomous support (e.g., scaffolding the experience without doing the child's work or using punitive measures) led to greater academic success for students than other methods of parental assistance (Gonida & Cortina, 2014; Silinskas, Kiuru, & Aunola, 2015). Interestingly, most homework-related studies occurred outside of the United States, leaving a gap in the literature.

It should be noted that only one study in the last 10 years investigated homework in a Montessori context. The authors, Bagby and Sulak (2014), provided a synopsis of educational research on the effectiveness of homework or any assignment completed outside of school hours. The authors noted that AMS has not set a standard regarding homework in the Montessori classroom, nor does it include homework in its curricula. Bagby and Sulak (2014) shared in their analysis that, similar to children in non-Montessori classrooms, Montessori children can benefit from homework that focuses on mathematics, that is task oriented, and that reinforces skills taught in the classroom (Maltese, Tai, & Fan, 2012; Trautwein, Köller, Schmitz, & Baumert, 2002). Their analysis is largely grounded in the seminal work of Cooper and colleagues (2006).

The lack of research in Montessori homework practices, and in homework in the United States in general, presents a significant gap in the literature. We assume that, without a policy to guide homework practices, homework will vary from classroom to classroom (or school to school) and will be influenced by teachers' perceptions and views of what is considered necessary for homework or not, and that our findings will add to the literature base on these topics.

Montessori Curriculum

In the Montessori classroom, children work together in multiage groups. Primary classes consist of children aged 3 through 6 years, Lower Elementary children are in grades 1 through 3, and Upper Elementary children are in grades 4 through 6. These age groups align with what Maria Montessori deemed *sensitive periods*, or opportunities for significant growth and development. These growth periods affect not only children's academic understanding but also their social growth, ability to cooperate with peers, and sense of community responsibility (Lillard, 2016; Zimmerman & Schunk, 2014).

Montessori teaching methods focus on a triad: the teacher, the learner, and the environment. The classroom allows opportunities for long periods of uninterrupted work and choice in work activities. Many of the lessons and student-centered activities emphasize students' ability to manipulate concrete Montessori materials that enhance their understanding of abstract concepts. This environment provides access to needed Montessori work materials and an open space for work completion, as well as the opportunity to work with others. The teacher serves as a guide for the child by assisting in developing work plans, teaching lessons, and overseeing each child's progress (Lillard, 2016).

Over the last 5 years, Montessori research has focused primarily on teacher autonomy in the classroom, examining how Montessori teachers use Montessori methods to meet the needs of diverse students (Ansari & Winsler, 2014; Carver-Akers, 2013; Danner & Fowler, 2015; Debs & Brown, 2017; Donne & Briley, 2015; Lillard & Heise, 2016; Peng & Md-Yunus, 2014; Steiner, 2016; Tobin, Boulmier, & Zhu, 2015). A second research focus emerges from the use of Montessori methods to develop play and physical motor skills in young students (Bhatia, Davis, & Shamas-Brandt, 2015; Lillard, 2013; Pate, O'Neill, & Byun, 2014). As stated earlier, only one study has examined the links between Montessori methods and homework (Bagby & Sulak, 2014).

Neither AMS (2016) nor the Montessori Foundation (2017) has established formal homework guidelines for the Montessori program, leaving teachers to determine what will work for their students and school. Challenges to determining appropriate homework include limited access to Montessori materials at home—one of the foundations of the curriculum—and determining ways to allow student choice in homework tasks that meet students at the appropriate developmental level.

Student Choice

Vatterot (2010) noted that allowing ownership and competence in assignments are two hallmarks of good homework for any school setting, not just the Montessori classroom. Students have different interests and academic needs, and assignment of inappropriate homework tasks may rob the task of pleasure if requirements are too strict or if the student is unable to complete the task (Vatterot, 2010). Similarly,

Patall, Cooper, and Wynn (2010) suggested that when students are provided choice in homework, they feel a greater sense of competence and intrinsic motivation, and they perform better on related tests. Patall et al. also concluded that a choice in homework did not affect the time individual students spent on the assignments (2010).

Wharton (2001) concluded that, although homework is developed and assigned by adults, it is little studied from students' perspective, leaving a gap in recent homework-related literature. Research into the role of homework in a Montessori curriculum and the effects of homework choice on student interest is valuable to schools and teachers considering implementing homework practices in classrooms, as well as to teacher education programs that prepare future Montessori instructors. According to Montessori philosophy, allowing students to choose their work enables them to find their own motivation to learn and discover (AMI/USA, n.d.).

With this information, we were curious: If homework is not critical for the Lower Elementary grades, can it be used in the Montessori curriculum as a tool to encourage choice and sustain student interest in learning? How can students use homework as a tool to stimulate their interest in learning, and what challenges will teachers face as they attempt to facilitate these opportunities for students in a Montessori classroom?

The current case study examines the ways in which OMS modified homework practices and shares the challenges faced by teachers as they adjusted to a new homework policy. Based on the findings, we outline considerations for Montessori schools contemplating new homework policies based on the lived experiences of the students and teachers at OMS

Methods

Context

Ocean Montessori School (OMS) is a public charter school in the southeastern United States. The school district has 10 elementary schools and serves 9,721 pre-K–12 students. The only charter school in the district is OMS, which opened in 2012 and serves 216 students in grades 1 through 7; grade 8 was added in 2017. Parents founded the school, and, although it is held to the same accountability standards as public schools in the district, OMS allows teacher autonomy in classroom structure and planning, provided they follow the Montessori principles and learning cycle. OMS follows a 3-year learning cycle with its students; students remain in the same classroom for 3 years, with the goal of mastery of the Montessori curriculum materials at the end of the cycle.

OMS is located in an affluent town with a median annual income of $100,000, more than double the state median. The unemployment rate is below the national average, and the median home price is approximately $300,000. OMS is a non-Title 1 school, and 24% of students receive free or reduced lunch, differing significantly from that of the overall district, where nearly 80% of students receive free or reduced lunch[1].

In the 2016–2017 academic year, OMS changed its homework policy; prior to that year, teachers had sent home math and language worksheets for students to complete each night. The new homework policy, begun in August 2016, discontinued the use of worksheets, instead allowing students to self-select a homework activity for each evening. Students were expected to select activities that enabled them to try new things, help their families, or benefit the community. Teachers determined if and when students would present their work in their classrooms (e.g., daily, once per week). The homework policy provided to parents requested that parents provide their child with opportunities for self-discovery and learning that continued from the school into the home, rather than traditional worksheets or rote skills practice (OMS 2016–2017 Parent Handbook). Parent guidelines also recommended that children participate in physical activity,

[1] It should be noted that the school has addressed and continues to work on its lack of diversity, as compared to the local district, through both charter goals and outreach efforts.

community service, reading, household responsibilities, and other similar Montessori-based activities, and that they keep a record of their at-home activities and experiences in a journal or other approved medium (OMS 2016–2017 Parent Handbook).

The new policy was implemented in a top-down manner: teachers were not asked for their input or feedback at the time the policy was written, and they did not see the policy until they reviewed the new parent handbook, thereby limiting their opportunities to revise the policy or express concerns. Neither were teachers provided any training in the policy; as a result, some teachers opted to look online for sample homework ideas to share with their students, and others provided no guidance for parents. An electronic newsletter informed parents of the new homework policy, but there were no parent trainings or family nights to discuss the new homework policy or to share examples of appropriate work.

Participants

We surveyed all lead teachers in the Lower Elementary (grades 1 through 3) and Upper Elementary (grades 4 through 6) classrooms at OMS ($N = 8$) about the changes in homework and the implications for their students. From the lead teacher group, we examined the types of homework brought in by the students at each grade level and the ways in which they chose to share their homework with others. In this paper, we share our findings from the Lower Elementary class of "Shana" (a pseudonym). We collected student data from Shana's class because we could visit her classroom regularly during homework-sharing sessions and because the homework in her class was similar to the homework completed by students in other classes. Shana was in her fourth year of teaching in the Montessori Method at the time of the study; she had become certified in Montessori teaching through an MACTE-accredited and AMS-affiliated teacher education program after volunteering in her son's Montessori class. Her class was composed of 25 students: eight in first grade, seven in second grade, and 10 in third grade. Table 1 describes the teachers and their grade levels.

Table 1

Characteristics of Teachers at Ocean Montessori School

Teacher pseudonym	Elementary level taught	Experience (years)
Shana	Lower	4
Patricia	Lower	21
Anne	Lower	18
Julie	Lower	14
Susan	Upper	22
Alisa	Upper	3
Hannah	Upper	8
Meghan	Upper	16

Data Sources

The following methods were used to collect data on Montessori homework practices and student choice in homework.

Parent Survey. A survey was developed in SurveyMonkey and sent to the families of all OMS students (see Appendix A). Parents completed a survey regarding the homework practices of the school. The survey questions used a Likert-type scale for parents to rate the frequency of homework-related behaviors and their perceptions of the homework policy from 1 (*strongly disagree)* to 5 (*strongly agree*).

An open-response option was also available for parents to share additional thoughts about homework. The survey was distributed via the school's weekly electronic newsletter from January through February, and the link was also shared on the school's Facebook page.

Student Work Samples. Students presented or turned in their homework weekly. Samples from Shana's class were collected monthly from August 2016 through March 2017; samples were not collected from November through January because of school holidays. We analyzed student work to see what types of homework were completed and how students chose to share their work (e.g., journal, blog, video), as well as what students self-reported—in both journals and interviews—about what they had learned through their homework assignments.

Student Interviews. We interviewed eight students from Shana's classroom about their homework practices (see Appendix B). Because only second and third graders in her class were required to complete a homework journal, we interviewed only students from those grade levels. There were 15 second- and third-grade students in Shana's class. Eight of those students returned the informed consent form, and those students were interviewed. We made copies of the eight students' homework journals and interviewed the students during the school day. Interview questions pertained to the completion of journals and student reports of what they learned from completing their homework. All interviews were completed in the third and fourth months of the school year and were audio recorded for accuracy.

Teacher Focus Group. The teachers were interviewed midway through the school year (i.e., January) to gain a sense of their perspectives on the school's new homework policy. The interview questions for the teachers (see Appendix C) focused on four aspects: their thoughts about changes to the homework policy, the homework they assigned, student completion of the homework, and students' responses in their homework journals. The focus-group interview lasted approximately one hour and was audio recorded.

Observations. We observed students' homework presentations to examine (a) what students chose for homework topics, (b) how they presented these topics, and (c) what they learned through completing their chosen work. Observations included detailed field notes (Spradley, 1980/2016) and a contact summary sheet (Miles & Huberman, 1994). Observations occurred at the end of each month from August 2016 through March 2017 (excluding November through January because of school holidays).

Data from each source were triangulated to verify accuracy of interpretations; for instance, to confirm validity across sources, teacher comments from the focus-group interview were compared with student work samples and the parent-survey data. In addition, member checking was used to ensure that participants' comments were accurately represented.

Results

Teacher Views on Homework: Ocean Montessori School

Teachers started the academic year with anticipation of the new homework policy, noting that it better aligned, in their views, to the Montessori philosophy of following the child. However, when sharing in the focus-group interview at the midpoint of the school year, many teachers' perspectives on the new homework policy and its effects on their students had changed.

All four teachers in the Upper Elementary classrooms noted that they had reverted back from the new homework policy to traditional homework practices. Rather than allow student choice on the homework, they were using state test-practice books for homework. One teacher switched to traditional homework 2 weeks into the school year, while the other teachers made the switch right after the winter break. When asked why, teachers said they were getting "laundry lists" from students of assignments and after-school activities, rather than activities that encouraged writing and thinking. "Susan," an Upper Elementary teacher, said, "What they were doing wasn't of quality. It was 'I woke up. I helped mom peel a carrot.'" Another Upper Elementary teacher, "Alisa," said that "for two or three kids, they had the same activities every day after school. Even if we told them that, it was all they did: dance, youth group, dance."

Similarly, "Hannah" felt that after the novelty of choosing homework wore off for students, the quality of their work declined, in both selected tasks and written reflections.

In the Lower Elementary classrooms, teachers' views on the new homework policy varied. "Patricia" expressed concern that children were not doing enough math and that she was spending excessive amounts of time creating individual plans for student homework. As she stated:

> So I realized right away, because of my own kids and classroom, no one was doing any math. What I would do weekly is suggest things for each kid. It took most of Tuesday to write out my suggestions. I was interjecting the math [assigning math homework] because it wasn't being chosen naturally unless you have a mathematician at home. I introduced the change after two to three weeks [from when school started] because I knew right away kids weren't getting it. We wanted that reinforcement at home that I wanted to do as a parent…. But the point was that I was having to direct all of it, and I could not physically keep up.

Patricia opted to send traditional workbooks home with students to ensure that parents and students knew how to complete the assignments, although this practice (and her decision to "direct all of it") did not align with student choice, as the new policy intended. Similarly, Shana found that while some students completed new homework options with success, others had a difficult time:

> We started with the plan, and I wasn't getting back consistent responses. Parents would say we already do this—how to do laundry, fold, he helps in the kitchen every night. That's what I was finding—that wasn't consistent enough. A small group would try new things and reflect, but that was a very small number.

Like Patricia, Shana chose to send home workbook activities focused on word recognition and math facts.

Interestingly, two other Lower Elementary teachers tried to balance old homework expectations with new homework expectations, rather than abandon one for the other. One teacher, "Anne," said,

> I started the year with just the new homework. At first I was getting this whole calendar laundry list of things. I asked that the kids do a reflection instead—What did they do, what did they learn, in what ways did this have a positive impact? We got away from the calendars and the parent-created work. It was like the same eight kids, consistently, week after week, would share really cool things, like sock puppets. And then the whole class was like, "I want to do that," and two days later, five more kids would come in with sock puppets.

In Anne's class, some students still participated in the homework choices, as they were opting to try new activities and share these with their classmates. Others, however, did not understand that completing these new activities was their actual homework, so Anne provided these students with more structured homework, sending home traditional math worksheets. Similarly, "Julie" preferred the new homework policy but recognized that some parents needed more support:

> I love the homework policy, and maybe I'm in the minority, but it's working great for us. Every Tuesday, before morning meeting, we'd split into groups. I have those kids that did impressive, meaningful things, and I take pictures of them and send them to the parents for inspiration. I take notes beside those two to three kids doing laundry lists and would say, I want you to do this again, but add these things…. Fortunately they tend to do it once I say that. Every week on my parent update is what I am teaching. Third years are working on this—here are some websites to help you. I'm giving some suggestions because I've found my parents are on two different extremes. Some loved doing something cool every week; others freaked out, saying "I don't know what to do…."

Most notable from the focus-group discussion was the lack of consistency in homework implementation, not just between Lower and Upper Elementary but also among teachers at the same grade

level. Some teachers sent home weekly packets for students to complete, some sent work home daily, and some expected students to prepare homework to share each Tuesday in the classroom. Other teachers opted to send home a list of suggested starter activities for students to complete as homework; for instance, one list included suggestions such as "Try a new chore at home," "Go outside on a nature walk and write about your observations," and "Cook dinner with your parents." The school director, who observed the focus-group interview, had not realized how differently teachers implemented homework practices.

Given the teachers' concerns about homework in each classroom, we asked teachers whether they noticed any changes in student performance on standardized measures of assessment (e.g., the Measures of Academic Progress) that could be attributed to the policy change. Not one teacher saw any effects on student performance—positive or negative—after the transition. When asked why she continued to assign homework, "Allyson" was succinct in her response:

> I don't see how I can achieve the goals put on me by the parents and the state without sending [traditional] work home. I would do it [stop assigning homework] in a minute. No homework, no grading. I have to send it home so I can be accountable.

Other teachers, both those using choice homework and those using traditional homework, felt that assigning homework helped students practice skills and develop a sense of responsibility.

Parent Perceptions of the Homework Policy

A total of 46 (22%) parents and guardians responded to the survey; 22 (47.8%) respondents had children in the Lower Elementary classes, and the rest had children in the Upper Elementary classes (52.8%). Nearly half of respondents (44%) noted that their child received a combination of assigned homework and choice homework, while 35% stated that their child received only assigned homework (see Table 2).

Table 2

Parent Responses to Homework Survey Questions

	Response (%)						
Question	1	2	3	4	5	*M*	*SD*
I am pleased with the new homework policy.	10.26	17.95	28.21	30.77	12.82	3.18	1.19
The new homework policy better suits my child's needs.	17.95	15.38	20.51	33.33	12.82	3.08	1.33
I prefer the old homework policy.	31.71	17.07	34.15	12.20	4.88	2.41	1.19
My child spends an excessive amount of time on homework each day.	22.50	45.00	15.00	2.50	15.00	2.42	1.30
My child has enjoyed the new homework opportunities.	17.95	7.69	33.33	28.21	12.82	3.10	1.11
My family enjoys working on new homework projects together.	13.95	18.60	25.58	34.88	6.98	3.02	1.18

Note. 1 = strongly disagree, 5 = strongly agree. Total of percentages is not always 100 because of rounding.

Parent reactions were generally favorable to the new homework policy. Almost half of respondents (48%) preferred the new homework policy to the old policy, and 30% expressed no preference. As one parent shared, "Our new homework policy has been wonderful for our child. She helps with our pet's care, preparing meals for the week, laundry, caring for grandparents, cleaning, budgets for our household and daily exercise." On the other hand, other parents were concerned that the new plan hindered their child. A parent noted that the new plan "lacked the structure and routine that my child needs for success. We worked out a plan with my child's teacher to provide structure and routine similar to the old policy. My child has been successful with our plan."

Over two thirds (67%) of parents believed that their child had a reasonable amount of homework each day; 39% noted that their child completed 15 to 30 minutes of homework each day. However, parents' greatest concern about the discontinuation of nightly homework, which they believed reinforced what their child learned at school, was that it prevented them from tracking their child's academic progress. Parents repeatedly reported being uncertain of their child's progress; one parent said:

> I feel that, on paper, the new homework policy sounds great, but after a month of doing it, I did not feel that my child was getting anything out of it, and it gave me no indication of how or what my child was doing in class weekly.

Some parents preferred teacher-assigned homework, believing it allowed them to better help their child and to "see what and how [my] child is doing with their classwork."

Student Views of Homework at Ocean Montessori School

Shana's Class. While student views of the new homework policy were generally positive, it should be noted that some students did not complete any homework at all, which is not atypical of K–12 classrooms in general (MetLife, 2007). A parent's handwriting could be spotted in several parts of one student's journal. At least two students were told by their parents what to do for homework, undermining student choice in activities. Half of the students interviewed reported participating in approximately the same activities every week, such as completing chores and participating in extracurricular activities; all students said they would have taken part in these activities even if they had not been required to complete a homework journal.

While the homework led five of the eight students to try at least one new activity, these new activities were mostly additions to their preexisting chores, such as simply increasing responsibility for the care of pets. Students wrote about their chores, clubs, and sports, but their entries were repetitive. For example, a third grader stated that he liked to have a choice in his homework because "you can do your chores and your homework at the same time"; however, his journal looked almost the same every week, and he wrote only about learning responsibility from these chores. A second grader noted her struggle with traditional homework from previous years, saying "it was kind of boring because we had to do all of these math problems, and a lot of them I didn't really understand."

These results depart from the Montessori view that, for the development of a child's sense of pride and accomplishment, work at home should be self-driven (Lillard, 2016). The few students who had tried new activities and actively reflected on their experiences demonstrated an increased interest in learning and trying new activities that interested them and their families.

Discussion

The move to a nontraditional homework plan was fraught with challenges for OMS. In their attempts to balance Montessori principles with the mandates of public-school accountability, teachers struggled to simultaneously achieve two goals: follow the child and facilitate student success. This endeavor was not unlike the school's challenges in juggling the demands of being a Montessori school, a charter school, and a member of the public school system (see Scott, 2017). As a result, homework shifted—predominantly in the upper grades—from student-selected work to rote skills practice. Because teachers

had little to no opportunity to provide feedback on the new policy or to receive training in its implementation, there was little consistency among classroom practices. Teachers were concerned about students' lack of creativity in completing nontraditional homework, yet parents struggled with loose interpretations of what constituted an appropriate homework assignment.

Although many parents appreciated the freedom of the new homework policy, they also struggled. Many were unsure of what was expected of their child, and some expressed concern about not knowing how their child was performing in school. Several factors contributed to this uncertainty: (a) a lack of communication from the school, (b) differing opinions among teachers regarding what constitutes acceptable homework (e.g., Do after-school activities count?), (c) a lack of communication from teachers regarding overall student progress, and (d) a change from the structured work of the traditional public-school setting. The uncertainty was evidenced by the disparate homework practices: some students repeated weekly activities, some students' parents completed student work, and other students turned in no work at all. This lack of consistency across grade levels and classes was problematic for families, as with children in the Lower Elementary classes were generally allowed more choice in the work they completed, while siblings in the Upper Elementary classes completed more-traditional homework. Parents were provided little guidance in helping their child, instead relying on teachers to communicate what needed to be done each week for homework. This lack of guidance was complicated by some teachers' reversion, in their attempts to meet state accountability guidelines, to traditional homework methods.

Despite the challenges, there were benefits to the new homework policy. Many parents noted that the new policy inspired their child to provide more help at home with chores, which was confirmed in student journal responses. The concept of children completing chores for personal enjoyment and a sense of purpose is not unusual; Dr. Montessori herself noted that providing children with these opportunities at home encourages responsibility and self-pride (Lillard, 2016). Children who had previously had a difficult time completing work enjoyed the flexibility of the new policy, and their parents appreciated the opportunities to try new activities as a family. Additionally, most parents indicated that their child received an appropriate amount of homework each night.

Implications

Many factors should be considered when implementing a homework policy in the Montessori classroom. Dr. Montessori advocated that work at home, like work at school, be child driven, noting that work loses value when its goals are no longer pride and accomplishment (Lillard, 2016).As witnessed at OMS, a clear and consistent set of expectations is needed across classrooms, as well as more parent education about how to provide support at home. To better understand what is expected of their child, parents need schools to provide suggestions for student activities. Moreover, while the notion of student choice in homework may align with Montessori ideals, the practice can be challenging when parents struggle with helping their child decide what to do for homework. To promote student choice, teachers should consider providing parameters for homework completion. For example, students could complete a Daily Life assignment one day and focus on botany or nature studies another day. Teachers and schools must also share Dr. Montessori's philosophy with families, so that parents can continue to follow the child's lead at home by encouraging them to further their interests. While parameters may limit choice, they also help parents better support their child at home and establish a foundation upon which to start selecting appropriate homework activities.

When modifying homework practices, teachers also should develop methods to communicate clearly with parents about their child's progress in the classroom. The greatest concern of parents in this study was the lack of knowledge about their child's performance. There are times when homework allows a parent to see the areas in which their child is successful or struggling, and less-restrictive homework may diminish these opportunities.

Finally, one must question the benefits of homework at the elementary level. It may be that teachers, while attempting to align homework choice with Montessori principles, inadvertently create more work for

themselves. Further, schools should engage teachers in the development and execution of any homework policy from its inception. Future research on these changes, including more consistent structure and teacher expectations across classrooms, will help determine whether Montessori principles and homework practices can be designed to benefit learners across both similar and diverse settings.

Limitations

Several limitations are associated with the use of OMS as a study site. The small sample size limits this study's findings: they may not be generalizable to the Montessori classroom at large. As was previously noted, the demographics of wealthy OMS families are very different from those of the surrounding district. The demographics of the student population itself also limit the findings; results may differ at larger schools with more diverse student populations. The lack of consistency in homework requirements across classrooms presented another limitation, making the collection of data more difficult. Finally, although parents were asked to complete a survey for each child, some parents may have completed only one survey for the whole family, thereby affecting survey results.

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Appendix A
Parent Homework Survey

For parents/ guardians with more than one child: please fill out the survey separately for each child. Therefore, if you have two children, please complete the form twice while thinking of a specific child during each completion if you are willing and able to do so. This will ensure a more accurate collection of data from our parents about our homework.

1. Please check the most appropriate description of your child's homework.

- ◯ My child does not have homework
- ◯ My child is given assigned homework by the teacher (e.g., worksheets, reading passages)
- ◯ My child chooses what to do for homework
- ◯ My child has a combination of free choice and assigned homework

2. How many days per week do you:

	0	1	2	3	4	5	N/A
Remind your child that (s)he has homework	◯	◯	◯	◯	◯	◯	◯
Help your child with homework	◯	◯	◯	◯	◯	◯	◯
Tell your child what to write for homework	◯	◯	◯	◯	◯	◯	◯
Complete, or write, your child's homework for her/him	◯	◯	◯	◯	◯	◯	◯
Tell your child that (s)he does not have time to complete homework that day due to other factors (i.e. sports, music lessons, etc.)	◯	◯	◯	◯	◯	◯	◯
Have your child participate in a new activity for homework	◯	◯	◯	◯	◯	◯	◯

3. On average, how much time does your child spend on homework activities each night?

- ◯ 0-15 minutes
- ◯ 15-30 minutes
- ◯ 30-45 minutes
- ◯ 45-60 minutes
- ◯ 60-90 minutes
- ◯ 90-120 minutes
- ◯ more than 120 minutes

4. Please select the most appropriate response.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am pleased with the new homework policy.	○	○	○	○	○
The new homework policy better suits my child's needs.	○	○	○	○	○
I prefer the old homework policy.	○	○	○	○	○
I have seen no change in the type of homework required from last year to this year.	○	○	○	○	○
I have a clear understanding of the homework expectations for my child's class.	○	○	○	○	○
The teacher communicates with us regarding homework expectations for our child.	○	○	○	○	○
My child spends an excessive amount of time on homework each day.	○	○	○	○	○
My child has enjoyed the new homework opportunities.	○	○	○	○	○
My family enjoys working on new homework projects together.	○	○	○	○	○

5. Is there anything else you would like to share regarding the school's homework policy and your child?

6. For demographic purposes, please share the grade level of your child:

- ○ Lower Elementary
- ○ Upper Elementary
- ○ Middle School

Appendix B
Student Interview Questions[2]

Can you tell me a little about what you've been doing for homework?

How do you pick what to do for homework?

Does your teacher assign certain homework for you to do?

Does anyone at home help you with your homework? (If so, how do they help you?)

Do you enjoy doing your homework? Why or why not?

What is your favorite homework that you've done so far? Why is it your favorite?

How does your homework this year compare with your homework from last year?

Do you do homework every day? How long do you think it takes you to do it?

What have you learned from doing your homework? Can you share an example?

[2] Additional questions were asked, as needed, based on student responses.

Appendix C
Teacher Interview Questions[3]

Do your students have certain guidelines or schedule that they must follow for their homework? If so, describe them.

How many of your students complete homework, and how often?

What types of homework do your students complete?

What made you decide to require X for homework?

How many of your students are reflecting on their homework activities?
- What types of reflections do they complete?
- Are the reflections up to your standards? Why or why not?

How often do your check your students' homework?

How often do you provide your students with feedback on their homework?

How has the new homework policy worked/not worked in your class?
- What are the benefits of the policy?
- What are the challenges of the policy?
- What might you change about the policy, and why?

Is there anything else you would like to add?

[3] Additional questions were asked, as needed, based on student responses.

Journal of Montessori Research
2017, Volume 3, Issue 2

The Effects of Choice on Reading Engagement and Comprehension for Second- and Third-Grade Students: An Action Research Report

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Keywords: literacy, literacy acquisition, reading, reading comprehension, choice, silent reading, aloud reading, Montessori

Abstract. Poor literacy rates contribute to low school performance for children across America. In particular, low-income schools continue to struggle with declining literacy rates. Issues with literacy are often attributed to lack of reading comprehension. This study tested the effects of choice on reading comprehension in second- and third-grade students at a high-income school and a low-income school. Students were observed while reading silently and aloud to see if either method affected reading comprehension. Data were collected from 32 students before, during, and after reading to determine whether students' comprehension levels were higher when given opportunities to choose their own books or when they read assigned books. Trials were performed while students read silently and then aloud. Results indicated that students had higher comprehension levels both when they could choose their own books and when they read silently.

Children in the United States usually begin public school in kindergarten at age 5 or 6. In low-income areas in Chicago, publicly funded preschool programs are available to families whose income falls at or below the poverty line. Many children from low socioeconomic backgrounds struggle in early childhood education; this struggle is often attributed to difficulty with literacy and reading (Snow, Burns, & Griffin, 1998; Dearing, Kreider, Simpkins, & Weiss, 2006). Reading in the first years of early childhood education is often the most important predictor of success in the elementary curriculum (Strickland & Riley-Ayers, 2006). If children are unable to read by elementary school, their performance in school is often negatively affected (Entwisle & Alexander, 1998). Practitioners teach children reading in accordance with the latest research; however, literacy rates remain stagnant (Murnane, Sawhill, & Snow, 2012). Further research is needed to establish which current methods of reading instruction best improve literacy and to discover additional knowledge that will improve outcomes (Sénéchal & Young, 2008). This review of the literature focuses on second and third grades. In the present study, children were either given a choice of reading material or assigned a reading. They also were monitored while they read silently or aloud. Choice is presumably an effective component of improving academic outcomes (Iyengar & Lepper, 2000). Children who are given a choice in reading may develop a sense of ownership and may have higher comprehension rates compared to those assigned a reading. Maria Montessori contended that choice within limits is crucial to a child's enjoyment of and engagement in learning. In Montessori classrooms, children have choice and freedom within limits in all subject areas of the classroom, allowing them to take ownership

Published online November 2017

and initiative in their learning (Lillard, 2005). The Montessori education system implements choice as an essential component of children's learning. The current study implies that the Montessori component of choice may also be effective in a non-Montessori setting.

Background

Poor literacy rates are attributed to various factors such as income level, one of several factors that cannot adequately be addressed by a school's curriculum (Barnett, 1995). The mechanisms that enable a child to read successfully best indicate where a curriculum should focus. Research presents an array of valuable insights dissecting the important components of reading instruction so that children are able to progress toward literacy. Barriers to literacy were outlined by Stanovich (1986). In his seminal review of the literature, he stated that children who read more slowly and with little enjoyment tend to read less frequently than those who read more fluidly and with more enjoyment, resulting in delayed vocabulary development and stunting their ability to read. According to Gardiner (2005), reading is a skill that students must come to enjoy; otherwise, it can impede their overall education. Children's enjoyment of reading affects their reading success through all grade levels and into adulthood. For this reason, it is important to focus on how schools can improve children's reading enjoyment levels in elementary school. This focus could improve literacy acquisition, and more specifically, reading comprehension. This research assessed the effect of choice on children's reading comprehension and enjoyment. In a review of the literature, the author examined studies related to choice, silent reading versus reading aloud, and measurements of reading comprehension.

Choice and Satisfaction

Several notable studies discuss choice and satisfaction. Iyengar and Lepper (2000) revealed that people are more likely to make a choice when offered six or fewer choices, rather than 24 or 30. Participants were given a choice of topics for a college essay. One group was given a large number of choices (i.e., 30), while another group was offered a small number of choices (i.e., six). Participants reported greater satisfaction with their selections when their original set of options had been limited. Although this study was conducted using college students, similar results may be found among other age groups. This research supports the idea that a reasonable number of choices improves the likelihood that participants associate enjoyment with their decisions. Choice creates a feeling of ownership; however, limits need to be considered when administering choice for optimal outcomes (Iyengar & Lepper, 2000).

According to Campbell and Donahue (1997), teachers reported student interest and choice to be factors in test performance. Eighth and twelfth graders who were given a choice in reading more positively perceived those readings. Despite these positive perceptions, statistically significant results were not seen when twelfth-grade students were given a reading comprehension test for the choice reading, while slightly statistically significant negative results were seen among eighth graders. Although these results showed that students did not score better on reading assessments when given the opportunity to choose their books, the findings did show that student perceptions of the assignments were more positive.

A study by Reibstein, Youngblood, and Fromkin (1975) suggested similar results to those found by Iyengar and Lepper (2000). Those who had been given a greater selection expressed higher levels of satisfaction with their choices compared to those with no choice. The study suggests that choice increases perceived freedom, thereby increasing satisfaction with one's choice. Choice is an important factor in individual satisfaction. Student choice in learning enhances determination, ownership, motivation, and involvement (Vitto, 2003).

Lewis, Alessandri, and Sullivan (1990) studied infants aged 2 to 8 months. While monitored, infants moved their arms to control stimuli and then underwent randomized stimuli.. Study results revealed that infants who had control over stimuli were more interested in their environments. Similarly, Deci, Schwartz,

Sheinman, and Ryan (1981) included observation reports from teachers of fourth- through sixth-grade students. Teachers reported that when students had more autonomy, they were more intrinsically motivated to learn and displayed higher levels of independence and confidence. Students' perceived level of control improved their academic performance.

Reading Silently Versus Aloud

Studies have shown that favorable results exist in both silent and aloud reading. Wiesendanger and Birlem (1984) revealed that, in nine of 11 research studies of elementary-aged children, students' positive attitude toward reading increased in schools whose curriculum included Sustained Silent Reading (SSR). Takeuchi, Ikeda, and Mizumoto (2012) used imaging techniques to monitor brain activity while subjects read aloud. Results showed that brain activity increased, suggesting a cognitive explanation for the effectiveness of reading aloud. Chow and Chou (2000) found that providing choice in combination with SSR resulted in increased reading comprehension outcomes.

According to Krashen (as cited in Sanden, 2014), silent reading improves the skills needed for comprehension. The study showed that elementary-aged students in SSR programs performed as well as or better in reading comprehension measures than did students in traditional reading comprehension programs. Because the results did not display statistically significant outcomes, more research is needed to determine if the increased comprehension was caused by the SSR program. The National Reading Panel (Hasbrouck, 2006) stated that there is not enough empirical research to support the idea that silent reading results in increased reading comprehension.

The outcomes of studies of both SSR and reading aloud are conflicting or neutral (Hawkins, Hale, Sheeley, & Ling, 2011; McCallum, Sharp, Bell, & George, 2004). Because it is not clear which type of reading has a more positive effect on children's reading comprehension, both variables need further study.

Measures of Comprehension

Reading is an important part of early childhood curriculum and education. The purpose of reading is to create meaning, while the overall goal of literacy is comprehension. According to Burns, Griffin, and Snow (1999), comprehension refers to the understanding of spoken and written language. Language comprehension skills are the foundation of reading comprehension. As early as kindergarten, teachers monitor students' oral language comprehension skills (Storch & Whitehurst, 2002). It is important to check comprehension both during and after reading to determine if children are developing these skills (Olofsson & Niedersøe, 1999). Two broad classes of skills are important for later reading performance: code-related skills and oral language skills (Storch & Whitehurst, 2002; NICHD Early Child Care Research Network [NICHD Early Child Care], 2005; Whitehurst & Lonigan, 1998). Because preschool children are beginning to learn these skills, it is important for instructors to focus on teaching oral language and comprehension at the beginning stages of reading to supply students with the fundamental skills necessary to achieve appropriate and expected comprehension levels. Oral language skills include "receptive and expressive vocabulary, syntactic and semantic knowledge, and narrative discourse processes such as memory, comprehension and storytelling" (NICHD Early Child Care, 2005, p. 428). The critical skills of oral language are vocabulary and comprehension; for students to develop strong oral language skills, they need to develop proficient comprehension. According to Epstein (2007), as oral language improves, so does reading comprehension. Hohmann (2005) stated, "Comprehension is the process of deriving meaning from action, speech, and text by connecting what you are learning to what you already know…. Children make meaning by assimilating new information into previous understanding" (p. 2). Burns et al. (1999) claimed that comprehension during the preschool years allows children to better understand spoken language and what is read to them; comprehension begins in their everyday conversations as they show understanding of speech through engagement and conversation with their parents, teachers, and peers. To gauge

comprehension, teachers need to know how to measure it. Comprehension can be measured by monitoring children's reactions to reading materials. As children ask questions and make comments while they read, they should be able to relate information from the book to their own experiences, evidenced in comments made during reading or in responses to the reading (Burns et al., 1999).

Methodology

This study was conducted at two schools in Chicago: a low-income school and a high-income school. The low-income school's public report showed that 97.4% of its students came from families that lived below the national poverty level. The high-income school included participants from a private school in which most of the families were categorized in the middle to upper socioeconomic class. While the high-income school's public report does not provide specific information about the incomes of its families, individual tuition costs between $15,000 and $23,000 per year, with limited scholarship availability, making this school available exclusively to students from higher-income households. Thirty-two students participated over a period of 6 weeks. In each school, teachers randomly selected 8- and 9-year-old students for participation: 10 boys and 11 girls from the high-income school and four boys and seven girls from the low-income school. Because many students did not have reliable transportation to school, their attendance was unpredictable. To maintain consistency in the evaluation process, only those with consistent transportation to school were allowed to participate.

The literature review outlined findings that support the major components of this research study. Choice was identified as an important variable that may predict students' enjoyment and increase their reading comprehension (Iyengar & Lepper, 2000). The researcher of the current study concluded that monitoring children while reading silently and then aloud would help to analyze the impact that reading silently versus aloud has on reading enjoyment (National Institute of Child Health and Human Development, 2000). The current study used four measures to gauge reading comprehension: (a) self-assessment (see Appendix A), (b) researcher observation sheet for questions and comments made by each child throughout reading (see Appendix B), (c) researcher observation scale for recording children's interest during reading (see Appendix C), and (d) reading quiz administered upon completion of the reading (see Appendix D). The four comprehension measures were derived from the previously discussed research to more accurately assess student comprehension of the reading (Burns et al., 1999). Since enjoyment was projected to be the root cause of higher comprehension levels, the variable that instigated this change was choice, which is associated with greater enjoyment and satisfaction (Iyengar & Lepper, 2000; Reibstein et al., 1975). To eliminate bias, different sample groups read aloud and silently. It was predicted that reading choice would increase reading enjoyment, thereby increasing comprehension. Research suggests that choice is an important factor in reading comprehension, but more information is needed. The current study attempted to discover whether choice positively affects comprehension in second- and third-grade children in high- and low-income schools.

Participants were individually assessed in a quiet room outside of the classroom over the 6-week period. Students were first assigned a grade-appropriate (i.e., second or third grade) reading from the *Reading A–Z* series, and then were given four evaluations (see Appendices A–D) to measure comprehension. After completing the assigned reading and evaluations, students chose one of three books to read (also from the *Reading A–Z* series). The same evaluations were conducted after choice reading. For the first three trials, students read both the assigned and chosen readings aloud; in the last three trials of the study, children read assigned and chosen readings silently. Each child participated in one segment of assigned and choice readings per trial. The children completed 12 readings over the course of the study, six assigned and six chosen. In each trial, students first read the assigned reading, followed by evaluation and a quiz measuring comprehension (see Appendices A–D). After completing the assigned segment, students completed the choice segment, in which they were presented with three reading options, followed by evaluation and a quiz measuring comprehension (see Appendices A–D). At the end of each segment,

students were asked which reading they preferred, assigned or chosen. Because all participants read the assigned reading first, it is possible that maturity explained the improvement seen in reading comprehension or reading preference.

For the assigned readings, children were given books and instructed to read them silently or aloud. They were told they could ask questions or make comments before, during, and after reading. As they read, the researcher used a 10-point scale to evaluate their perceived levels of interest, focus, enjoyment, and comprehension, with 1 being the lowest level and 10 being the highest level (see Appendix C). To gauge students' interest, the researcher observed and coded their facial expressions (e.g., smiling, gasping, or any change in expression). To measure focus, the researcher observed and coded students' reading intensity (e.g., appearance of distraction, looking away from the book, pausing randomly, sluggishness, slouching, or appearance of engagement). To measure enjoyment, the researcher observed and coded students' positive facial expressions while reading. Enjoyment overlapped somewhat with interest, although enjoyment focused on students' overall appearance of relaxation and ease in reading. To measure students' perceived comprehension, the researcher observed and coded gestures, intensity of focus, and appearance of engagement (i.e., Did the reader express enjoyment, focus, and interest?) Participant questions and comments from before, during, and after the readings were recorded on an observation sheet (see Appendix B).

Researcher observations were used to compare researcher perception of child's comprehension levels to actual quiz results that gauged reading comprehension. Researcher observations of perceived focus, enjoyment, interest, and engagement were not definitive measures yet provided insight about signs children may display during reading that can be compared to actual test results. After completing the reading, participants were given a reading comprehension quiz; these quizzes were created by the *Reading A–Z* series for each reading (see Appendix D). After students took the quiz, they read several statements and were asked to use a 5-point scale to describe how often the statements were true for them, with 1 meaning *not at all* and 5 meaning *all the time* (see Appendix A). Afterward, they were asked to choose from among three books, and the same process of evaluating comprehension was repeated. As part of the data collection, after completing the assigned and chosen readings and the assessment, children were asked which reading they preferred. Each child completed this process once per week over a period of 6 weeks (i.e., each child completed one cycle each of assigned and choice trials per week). The following books were used for the readings:

- Trial 1: *Healthy Me*; *Math Test Mix-Up*; *Winter Vacation*; *Monsters on Wheels*
- Trial 2: *Thank You, Everyone!*; *Caretakers*; *Carlos and His Teacher*; *The Mitten*
- Trial 3: *I'd Like to Be*; *At the Library*; *What Has This Tail?*; *Winter Fun*
- Trial 4: *I Need an Eraser*; *Josh Gets Glasses*; *Stone Soup*; *A Cold Day*
- Trial 5: *The Magic Bike*; *Darby's Birthday Party*; *Firefighters*; *Extreme Insects*
- Trial 6: *Bats Day and Night*; *Hugs to Daddy*; *Spring Is Here*; *Goats Are Great*

Analysis of Data

The data were collected using test scores, researcher observations, self-assessments, and an end-of-study survey (see appendices). Comprehension and engagement were based on a six-question quiz, provided by the *Reading A–Z* series, administered at the end of each reading selection (see Appendix D). Researcher observations, based on perceived student focus, interest, and enjoyment, were recorded before, during, and after reading. The researcher used a 10-point scale to record perceived focus, interest, appearance of comprehension and enjoyment levels for each area, with 1 being the lowest score and 10 being the highest score (see Appendix C). The researcher also noted any questions or comments made before, during, and after reading (see Appendix B). Students completed self-assessments after each reading (see Appendix A), rating themselves on a 5-point scale in response to statements about their interest in reading and school, with 1 meaning *not at all* and 5 meaning *all the time*. Students also were asked whether they preferred the assigned or chosen reading; their responses were used in conjunction with the other assessments to gauge whether choice had an effect on reading comprehension, meaning that the child's preferred reading may influence comprehension and performance on evaluations. After completing the 6-week trials, students were asked questions about reading. These questions pertained to their interest in reading silently or aloud and to the factors that help them to read at home, such as parent encouragement or number of books at home.

Comparisons between the significance of the regression coefficients of the dummy code treatment condition were made. Figure 1 and Table 1 compare average responses for students who chose their books and for those who were assigned a reading. Similarly, Figure 2 and Table 2 compare the average responses for students who read aloud and those who read silently. These tests were performed using regression analysis, displaying a 95% confidence interval (CI). Figure 3 and Table 3 compare average responses for students who preferred or did not prefer the reading. Figure 4 provides an overview of the effect on test scores of chosen versus assigned reading, aloud versus silent reading, and preferred versus not-preferred reading.

Conclusions and Implications for Future Research

This study's data show that children who were given a choice in reading scored higher in reading comprehension than when they were assigned a reading; likewise, children who read silently scored higher on comprehension measures than when they read aloud. Previous studies showed neutral results in testing the variability between reading silently versus aloud (Hawkins et al., 2011; McCallum et al., 2004); however, this study's findings also suggest that silent reading is optimal (Sanden, 2014). Data collected from students from both high- and low-income schools were used, and the results regarding the effects of choice and silent reading on reading comprehension were the same. As corroborated by other studies (Deci et al., 1981; Iyengar & Lepper, 2000; Lewis et al., 1990; Reibstein et al., 1975), this study demonstrates that choice positively affects learning. Current practices in school literacy programs focus on assigned readings and often require children to read aloud. This study indicates that choice and silent reading are significant factors in improving reading comprehension scores. Because a major component of early elementary education is reading comprehension, children should be given the opportunity to enjoy reading and take ownership of their own learning. These goals can be accomplished by offering students a limited variety of reading options and by providing time to read independently. Future research is needed on direct practices that may improve phonics instruction and other mechanical aspects of literacy; however, results strongly indicate that comprehension is greatly influenced by choice and by opportunities to read silently.

While this study presents broad implications, limitations include research design (i.e., small sample size, specific location); further research with larger sample sizes in different geographical areas may strengthen findings. Various components of reading comprehension that are important for literacy acquisition need to be considered, including formal assessments that measure comprehension within the context of choice (Pressley, Mohan, Raphael, & Fingeret, 2007).

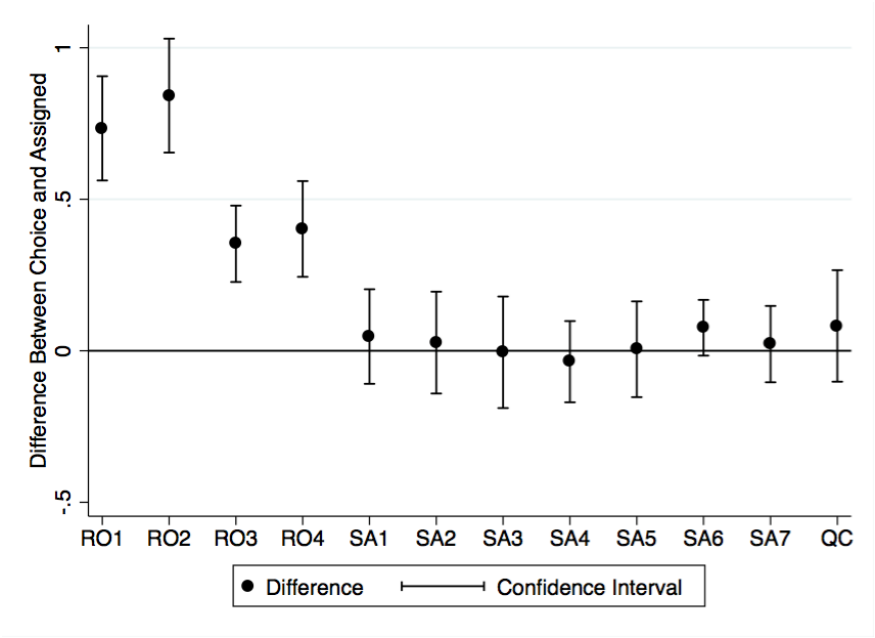

Figure 1. Difference in means between chosen and assigned readings. The *x*-axis shows the variables of interest. The *y*-axis shows the difference on each measure between chosen and assigned readings. The points on the graph plot the differences in means between chosen readings and assigned readings for each of the variables. The differences in means between chosen and assigned readings for RO1, RO2, RO3, and RO4 are statistically significant. For SA1, the difference is not statistically significant. RO1 = researcher observation of child's interest level, 95% CI [0.56, 0.91]; RO2 = researcher observation of child's enjoyment level, 95% CI [0.65, 1.03]; RO3 = researcher observation of child's comprehension level, 95% CI [0.23, 0.48]; RO4 = researcher observation of child's focus during reading, 95% CI [0.24, 0.56]; SA1 = child self-assessment (*I enjoy reading*), 95% CI [-0.11, 0.20]; SA2 = child self-assessment (*I enjoy reading aloud*), 95% CI [-0.14, 0.20]; SA3 = child self-assessment (*I enjoy reading silently*), 95% CI [-0.19, 0.18]; SA4 = child self-assessment (*It's hard for me to understand what is going on when I read*), 95% CI [-0.17, 0.10]; SA5: child self-assessment (*I am interested in the books that I am assigned to read*), 95% CI [-0.15, 0.16]; SA6 = child self-assessment (*I can read well*), 95% CI [-0.02, 0.17]; SA7 = child self-assessment (*I enjoy going to school*), 95% CI [-0.10, 0.15]; QC = number of questions or comments student made before, during, or after reading, 95% CI [-0.10, 0.27]. RO1, RO2, RO3, and RO4 are scored on a 10-point Likert scale ranging from 1 (*not at all*) to 10 (*all the time*). SA1, SA2, SA3, SA4, SA5, SA6, and SA7 are scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*all the time*). $p < .05$ for RO1, RO2, RO3, and RO4. The remaining variables are not statistically significant.

Table 1

Effects of Chosen vs. Assigned Reading for Students

	Reading type			
Variable	Chosen (*M*)	Assigned (*M*)	Difference	p^*
Test score	90.386	86.060	4.326	.009
RO1	7.739	7.005	0.734	.000
RO2	7.489	6.647	0.842	.000
RO3	8.283	7.929	0.353	.000
RO4	8.543	8.141	0.402	.000
SA1	4.506	4.459	0.047	.553
SA2	3.250	3.223	0.027	.747
SA3	4.239	4.245	-0.005	.953
SA4	2.276	2.312	-0.036	.601
SA5	3.897	3.891	0.005	.946
SA6	4.647	4.571	0.076	.109
SA7	4.234	4.212	0.022	.733
QC	0.228	0.147	0.082	.381
Number of observations	184	184		

Note. RO1 = researcher observation of child's interest level; RO2 = researcher observation of child's enjoyment level; RO3 = researcher observation of child's comprehension level; RO4 = researcher observation of child's focus during reading; SA1 = child self-assessment (*I enjoy reading*); SA2 = child self-assessment (*I enjoy reading aloud*); SA3 = child self-assessment (*I enjoy reading silently*); SA4 = child self-assessment (*It's hard for me to understand what is going on when I read*); SA5: child self-assessment (*I am interested in the books that I am assigned to read*); SA6 = child self-assessment (*I can read well*); SA7 = child self-assessment (*I enjoy going to school*); QC = number of questions or comments student made before, during, or after reading. RO1, RO2, RO3, and RO4 are scored on a 10-point Likert scale ranging from 1 (*not at all*) to 10 (*all the time*). SA1, SA2, SA3, SA4, SA5, SA6, and SA7 are scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*all the time*).
$^*p < .05$

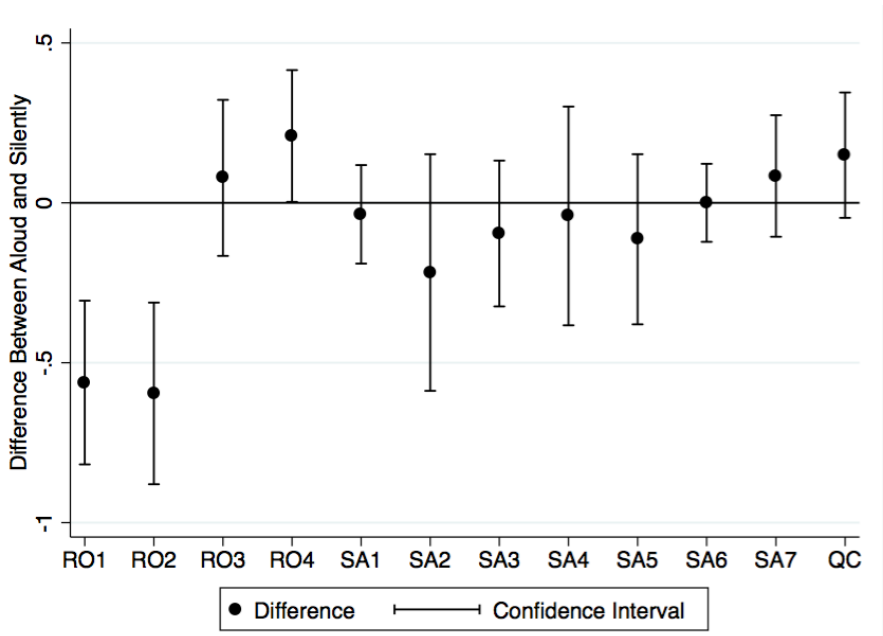

Figure 2. Difference in mean scores between students reading aloud and silently. The *x*-axis shows the variables of interest. The *y*-axis shows the difference in means on each measure between students reading aloud and reading silently. Therefore, the differences in means between reading aloud and silently for RO1, RO2, and RO4 are statistically significant. For RO3 and SA1 through QC, the difference is not statistically significant. RO1 = researcher observation of child's interest level, 95% CI [-0.82, -0.31]; RO2 = researcher observation of child's enjoyment level, 95% CI [-0.88, -0.31]; RO3 = researcher observation of child's comprehension level, 95% CI [-0.17, 0.32]; RO4 = researcher observation of child's focus during reading, 95% CI [0.00, 0.42]; SA1 = child self-assessment (*I enjoy reading*), 95% CI [-0.19, 0.12]; SA2 = child self-assessment (*I enjoy reading aloud*), 95% CI [-0.59, 0.15]; SA3 = child self-assessment (*I enjoy reading silently*), 95% CI [-0.32, 0.13]; SA4 = child self-assessment (*It's hard for me to understand what is going on when I read),* 95% CI [-0.38, 0.30]; SA5: child self-assessment (*I am interested in the books that I am assigned to read),* 95% CI [-0.38, 0.15]; SA6 = child self-assessment (*I can read well*), 95% CI [-0.12, 0.12]; SA7 = child self-assessment (*I enjoy going to school*), 95% CI [-0.11, 0.27]; QC = number of questions or comments student made before, during, or after reading, 95% CI [-0.05, 0.35]. RO1, RO2, RO3, and RO4 are scored on a 10-point Likert scale ranging from 1 (*not at all*) to 10 (*all the time*). SA1, SA2, SA3, SA4, SA5, SA6, and SA7 are scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*all the time*). $p < .05$ for RO1, RO2, and RO4. The remaining variables are not statistically significant.

Table 2

Effects of Silent vs. Aloud Reading for Students

	Reading type			
Variable	Aloud (*M*)	Silent (*M*)	Difference	p^*
Test score	88.490	87.955	0.535	.685
RO1	7.091	7.653	-0.562	.000
RO2	6.770	7.366	-0.596	.000
RO3	8.145	8.067	0.078	.528
RO4	8.447	8.238	0.209	.050
SA1	4.464	4.500	-0.036	.644
SA2	3.127	3.345	-0.218	.249
SA3	4.194	4.290	-0.096	.406
SA4	2.274	2.315	-0.041	.811
SA5	3.837	3.951	-0.114	.396
SA6	4.609	4.609	0.000	1.000
SA7	4.265	4.181	0.084	.387
QC	0.262	0.113	0.149	.140
Number of observations	184	184		

Note. RO1 = researcher observation of child's interest level; RO2 = researcher observation of child's enjoyment level; RO3 = researcher observation of child's comprehension level; RO4 = researcher observation of child's focus during reading; SA1 = child self-assessment (*I enjoy reading*); SA2 = child self-assessment (*I enjoy reading aloud*); SA3 = child self-assessment (*I enjoy reading silently*); SA4 = child self-assessment (*It's hard for me to understand what is going on when I read*); SA5: child self-assessment (*I am interested in the books that I am assigned to read*); SA6 = child self-assessment (*I can read well*); SA7 = child self-assessment (*I enjoy going to school*); QC = number of questions or comments student made before, during, or after reading. RO1, RO2, RO3, and RO4 are scored on a 10-point Likert scale ranging from 1 (*not at all*) to 10 (*all the time*). SA1, SA2, SA3, SA4, SA5, SA6, and SA7 are scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*all the time*).
$^*p < .05$

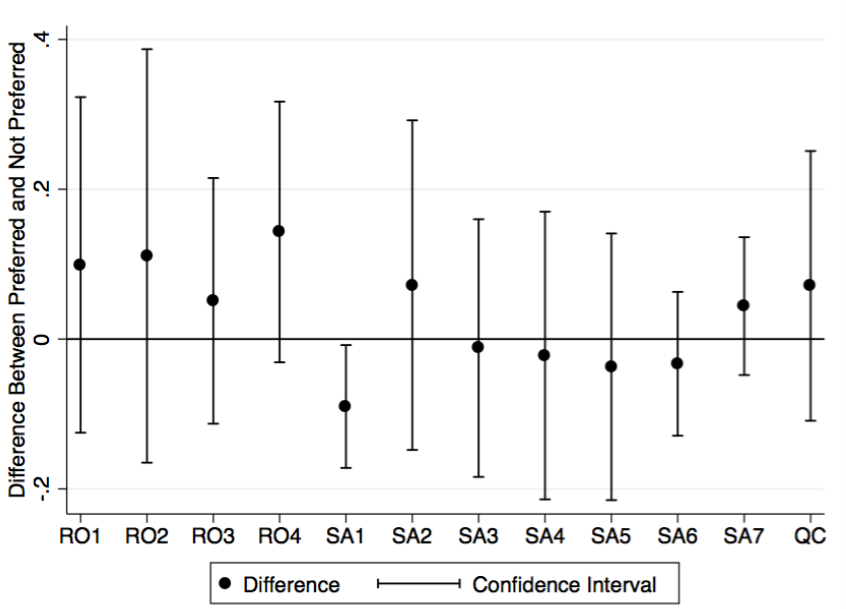

Figure 3. Difference in means between preferred and not-preferred readings. RO1 = researcher observation of child's interest level, 95% CI [-0.13, 0.32]; RO2 = researcher observation of child's enjoyment level, 95% CI [-0.17, 0.39]; RO3 = researcher observation of child's comprehension level, 95% CI [-0.11, 0.22]; RO4 = researcher observation of child's focus during reading, 95% CI [-0.03, 0.32]; SA1 = child self-assessment (*I enjoy reading)*, 95% CI [-0.17, -0.01]; SA2 = child self-assessment (*I enjoy reading aloud*), 95% CI [-0.15, 0.29]; SA3 = child self-assessment (*I enjoy reading silently*), 95% CI [-0.18, 0.16]; SA4 = child self-assessment (*It's hard for me to understand what is going on when I read*), 95% CI [-0.21, 0.17]; SA5: child self-assessment (*I am interested in the books that I am assigned to read*), 95% CI [-0.22, 0.14]; SA6 = child self-assessment (*I can read well*), 95% CI [-0.13, 0.06]; SA7 = child self-assessment (*I enjoy going to school*), 95% CI [-0.05, 0.14]; QC = number of questions or comments student made before, during, or after reading, 95% CI [-0.11, 0.25]. RO1, RO2, RO3, and RO4 are scored on a 10-point Likert scale ranging from 1 (*not at all*) to 10 (*all the time*). SA1, SA2, SA3, SA4, SA5, SA6, and SA7 are scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*all the time*). $p < .05$ for SA1. The remaining variables are not statistically significant.

Table 3

Effect of Student Preferences

	Reading type			
Variable	Preferred (*M*)	Not preferred (*M*)	Difference	p^*
Test score	88.766	87.685	1.081	.429
RO1	7.422	7.323	0.099	.386
RO2	7.124	7.013	0.111	.430
RO3	8.132	8.081	0.051	.538
RO4	8.414	8.271	0.143	.109
SA1	4.437	4.527	-0.090	.035
SA2	3.272	3.201	0.072	.520
SA3	4.236	4.248	-0.012	.891
SA4	2.283	2.305	-0.022	.820
SA5	3.875	3.913	-0.037	-.678
SA6	4.592	4.625	-0.033	.497
SA7	4.245	4.201	0.044	.348
QC	0.223	0.152	0.071	.437
Number of observations	183	185		

Note. RO1 = researcher observation of child's interest level; RO2 = researcher observation of child's enjoyment level; RO3 = researcher observation of child's comprehension level; RO4 = researcher observation of child's focus during reading; SA1 = child self-assessment (*I enjoy reading*); SA2 = child self-assessment (*I enjoy reading aloud*); SA3 = child self-assessment (*I enjoy reading silently*); SA4 = child self-assessment (*It's hard for me to understand what is going on when I read*); SA5: child self-assessment (*I am interested in the books that I am assigned to read*); SA6 = child self-assessment (*I can read well*); SA7 = child self-assessment (*I enjoy going to school*); QC = number of questions or comments student made before, during, or after reading. RO1, RO2, RO3, and RO4 are scored on a 10-point Likert scale ranging from 1 (*not at all*) to 10 (*all the time*). SA1, SA2, SA3, SA4, SA5, SA6, and SA7 are scored on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*all the time*).
$^*p < .05$

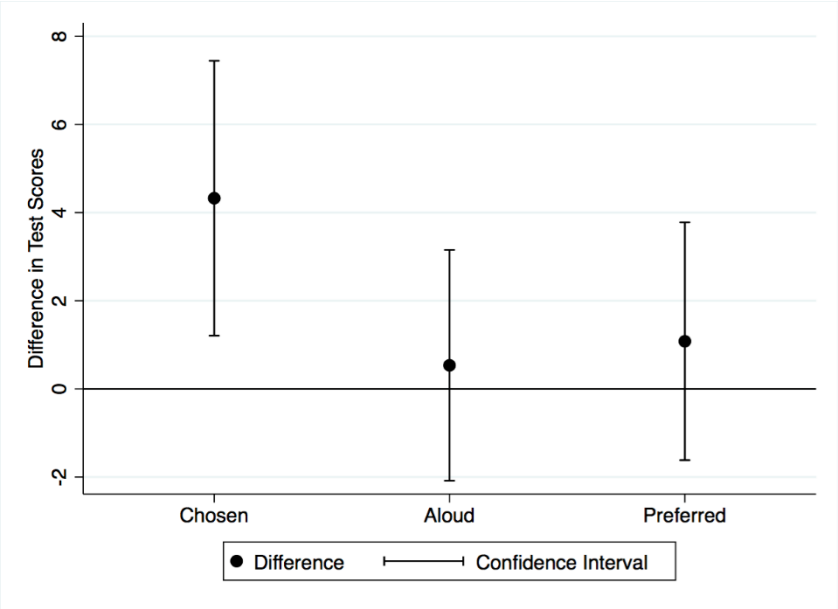

Figure 4. Effect on test scores (%) of chosen versus assigned, aloud versus silent, and preferred versus not-preferred readings. 95% CIs [1.21, 7.44], [-2.08, 3.15], [-1.62, 3.78], respectively.

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Appendix A:

Enjoyment of reading self-assessment

Students, please complete this assessment discussing your enjoyment of reading. Please make sure to answer each question by circling your choice from the scale. Please be honest—answers will not affect your grade in any way.

Participant: _____

Not at all | A little | Some of the time | Most of the time | All the time

I enjoy reading.	**1 2 3 4 5**
I enjoy reading aloud.	**1 2 3 4 5**
I enjoy reading silently.	**1 2 3 4 5**
It's hard for me to understand what is going on when I read.	**1 2 3 4 5**
I am interested in the books that I am assigned to read.	**1 2 3 4 5**
I can read well.	**1 2 3 4 5**
I enjoy going to school.	**1 2 3 4 5**

Appendix B:

Questions and comments made by child while reading

Book choices presented:

Book selection:

Participant:

	Silent Reading	**Reading Aloud**
Before		
During		
After		

Researcher comments:

Appendix C:

Researcher observation/journal of child's interest level during reading session

Participant:

Silent Reading	**Reading Aloud**
Child's interest level 1 2 3 4 5 6 7 8 9 10	Child's interest level 1 2 3 4 5 6 7 8 9 10
Child's enjoyment level 1 2 3 4 5 6 7 8 9 10	Child's enjoyment level 1 2 3 4 5 6 7 8 9 10
Perception of child's comprehension level 1 2 3 4 5 6 7 8 9 10	Perception of child's comprehension level 1 2 3 4 5 6 7 8 9 10
Child's focus during reading 1 2 3 4 5 6 7 8 9 10	Child's focus during reading 1 2 3 4 5 6 7 8 9 10
Comments:	Comments:

Appendix D:

Sample reading quiz

Book title: *A Cold Day*

1. The story is mostly about…
   A. a snowstorm.
   B. cold weather.
2. What does the boy do after he feels the tree?
   A. He feels the fence.
   B. He feels the car.
3. Which of the following words tells the setting?
   A. *today*
   B. *feels*
4. How does the tree feel?
   A. warm
   B. cold
5. Listen to this sentence: *The door handle is cold*. What is another word for *handle*?
   A. knob
   B. window

Appendix E:

Descriptions of measures used in figures

RO1: Researcher Observation 1
Researcher-recorded perception of child's interest level (10-point scale)

RO2: Researcher Observation 2
Researcher-recorded perception of child's enjoyment level (10-point scale)

RO3: Researcher Observation 3
Researcher-recorded perception of child's comprehension level (10-point scale)

RO4: Researcher Observation 4
Researcher-recorded perception of child's focus during reading (10-point scale)

SA1: Self-Assessment 1
Child self-assessed statement: *I enjoy reading.* (5-point scale)

SA2: Self-Assessment 2
Child self-assessed statement: *I enjoy reading aloud.* (5-point scale)

SA3: Self-Assessment 3
Child self-assessed statement: *I enjoy reading silently.* (5-point scale)

SA4: Self-Assessment 4
Child self-assessed statement: *It's hard for me to understand what is going on when I read.* (5-point scale)

SA5: Self-Assessment 5
Child self-assessed statement: *I am interested in the books that I am assigned to read*. (5-point scale)

SA6: Self-Assessment 6
Child self-assessed statement: *I can read well*. (5-point scale)

SA7: Self-Assessment 7
Child self-assessed statement: *I enjoy going to school.* (5-point scale)

Q/C: Questions and Comments
Number of questions or comments made before, during, and after reading.

Journal of Montessori Research
2017, Volume 3, Issue 2

The Montessori Experiment in Rhode Island (1913–1940): Tracing Theory to Implementation Over 25 Years

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Keywords*: Clara Craig, Montessori Method, Rhode Island Normal School, first-wave Montessori, first international Montessori training course*

Acknowledgments

A special thank you to Marlene Lopes, Special Collections Librarian, Adams Library at Rhode Island College, for her guidance in accessing primary source documents related to the Rhode Island Normal School and Clara Craig.

Abstract. This article highlights archived documents pertaining to a 25-year experimental classroom implemented by Clara Craig, then supervisor of training at the Rhode Island Normal School. Craig is notable as she was the only participant in the first International Montessori Training Course in Rome, Italy, in 1913, to gain approval from the Rhode Island Board of Education to study the Montessori Method. Her administrative position at the Rhode Island Normal School provided her with a rare opportunity to influence both teacher preparation and classroom curriculum upon her return. The article traces implementation of the Montessori Method and its Americanized revision, serving as one of the earliest longitudinal examples (1913–1940) of a state-sanctioned Montessori classroom, well beyond the acknowledged first-wave era (1911–1917). Craig's experience provides a historical perspective that can inform current Montessori initiatives working within complex education and policy contexts.

In the current policy landscape, Montessori programs across the country are working toward recognition from state departments of education (American Montessori Society, 2008; Montessori Public Policy Initiative [MPPI], 2015). This is not a recent trend, but one with deep historical roots, beginning with Maria Montessori's first International Training Course in 1913. Clara Craig, one of 67 Americans enrolled in the inaugural training, served as the only official representative charged by the Rhode Island Board of Education with investigating the Montessori Method. Over the next 25 years, Craig's experimental classrooms situated within the observation school at the Rhode Island Normal School (1913–1940) existed well beyond the historical first-wave period of Montessori growth in America.

The National Center for Montessori in the Public Sector (2014) charts four distinct periods of growth in Montessori education in the United States over the last century. The first surge occurred between 1911 and 1917 with Dr. Montessori's first International Training Course and the subsequent development of more than 100 Montessori schools across the country. The second wave occurred between 1960 and 1975, with a Montessori revival generated by Nancy Rambusch in an era of alternative education, President Johnson's War on Poverty, and the creation of the federal Head Start movement to promote equity in education. The third wave (1975–1989) continued to focus on education as a tool to mitigate the effects of

poverty and the development of Montessori magnet schools. The fourth wave, (1990–present) has prompted a Montessori renaissance as the philosophy expands into public schools (Whitescarver, 2017), charter initiatives (Ayer, 2017), and new Montessori delivery and research models, such as Wildflower Schools. And there remains the ever-expanding growth of private nonprofit and for-profit Montessori programs established across the nation.

Implementation challenges occurred with each resurgence of the philosophy in the United States. Researchers cite shifts in education policy, failed professional relationships, politics, and funding issues as challenges influencing Montessori education's lack of acceptance in mainstream education (Whitescarver & Cossentino, 2008; Debs, 2016; Gutek & Gutek, 2016). Given today's growing diversity in Montessori delivery models, along with increased access to private foundation and public funding sources, and emerging intersections with state and federal educational policy, it will be imperative that educators and administrators remain vigilant about implementation practices to sustain alignment with Dr. Montessori's principles (Lillard, 2012; Lillard & Heise, 2016). As Whitescarver and Cossentino (2008) stated, "If the current trend of growth and diffusion into the public sector continues, Montessorians may find remaining pure to their tradition becoming much more difficult" (p. 2594).

To demonstrate how changes can occur between knowledge of educational theory and actual classroom implementation, this article provides a historical overview of research into the Montessori Method in Rhode Island immediately after Dr. Montessori's first International Training Course in Rome. Using primary source documents to map the pedagogy's evolution over 25 years, I examined training notes from the 1913 Montessori training, annual reports to the Rhode Island Board of Education, newspaper accounts, journal articles, and research reports between 1913 and 1940. The materials provide rare insight regarding revisions made as a result of the Rhode Island experiment, with a particular focus on language and literacy practices. Understanding how Craig created and institutionalized state-level reform, and learning more about the trajectory of her own research of the Montessori Method, has vital significance to understanding why the pedagogy died out by the early 1920s in America and why it may still struggle in the public sector today.

The purpose of this article is to expand our historical perspective related to first-wave Montessori implementation. It also raises questions related to fidelity of implementation and evaluation outcomes introduced by Lillard and Heise (2016), framing how we measure what works in Montessori education, in what contexts, and with what results.

The Rhode Island Normal School, the Board of Education, and Clara Craig

Teacher preparation in the early 1900s depended on trainings offered by high schools and school districts. Individuals willing to relocate to Rhode Island, Vermont, Connecticut, or Massachusetts could complete their studies through certificate-granting institutions identified as normal schools, a term derived from the French phrase *école normale*, representing teacher preparation schools that standardized teaching methods and curriculum (Christiansen, 2016).

As a tribute to the Rhode Island Normal School's 40th anniversary, Thomas Bicknell (1911) provided one of the most thorough historical accounts of the institution. He traced the inception of the normal school idea to a 1789 reference in *Massachusetts Magazine*, which cited a need to prepare teachers for their work in classrooms. Massachusetts was an education pioneer, creating its state board of education in 1837 and opening the first publicly funded state normal school in Lexington in 1839 (Bicknell, 1911).

Rhode Island opened its first private teacher training school in 1852 and, after an initial failed attempt, opened the Rhode Island Normal School in 1871. Students were required to pass an entrance exam, tuition was free for Rhode Island residents, and travel stipends were offered to students who traveled more than 5 miles to school. By 1911, there were approximately 260 normal schools in the United States, graduating over 15,000 newly trained teachers annually (Bicknell, 1911). The Rhode Island Normal School gained national attention for the quality of its programming (Christiansen, 2016) and attracted recognized

educators such as John Dewey, Alice Freeman Palmer (then the president of Wellesley College), Julia Ward Howe, and Dr. Montessori (Marzzacco, 1994).

Four departments coordinated teacher preparation at the Rhode Island Normal School, now known as Rhode Island College: (a) the Normal Department, where students studied educational theory and subject matter taught in public elementary schools; (b) the Observation Department, which provided opportunities for students to observe experienced teachers and practice teaching in classrooms under teacher supervision; (c) the Training Department, where students deepened their instructional experience by teaching in classrooms under the guidance of college supervisors; and (d) the Extension Department, which provided the teacher workforce with relevant professional development, through weekend classes, to improve teaching practice and school conditions (Rhode Island Normal School, 1914).

In addition to the four departments of teacher preparation, the Rhode Island Normal School also housed a public school, the Henry Barnard School, with some 400 students assigned to classrooms in the basement and first floor of the building (Carbone, 1971; Rhode Island College, 1921). These classrooms worked in tandem with instructors in the Observation and Training Departments to create a model of teacher preparation embedded in classroom practice. The combination of theory and practice allowed student teachers authentic opportunities to observe teachers' instruction, work directly with children, and receive valuable feedback from faculty as part of their development as educators.

Oversight of educational programming throughout the state was the responsibility of the Rhode Island Board of Education. Reports from school districts were submitted to the board of education each year cataloging rich descriptions of school events, including the opening of new school buildings, lists of teachers and school administrators by town, professional development offered to teachers during the previous year, instructional curricula, and projected fiscal needs. The 1911 annual report of the Rhode Island Board of Education addressed the importance of education:

> Educational development is a related part of American history, a vital element in American civilization. The American school system is of the people, a product of social and economic life…. We have cause to look upon our vast system of public education as one of the great American achievements. We regard it as the truest product of American democracy…. (Rhode Island Board of Education, 1911, p. 13)

The same report also addressed the importance of education being responsive to community needs and open to exploring new models of teaching, stating "new ideas in education are to be welcomed, improvements in means and methods are to be sought; but *all radical proposals must be tested* [emphasis added] by the governing purpose of public education" (Rhode Island Board of Education, 1911, p. 13). The following year, the Rhode Island Board of Education granted Craig permission to travel to Rome to learn about the highly popular Montessori Method directly from Dr. Montessori.

Craig served as supervisor of teacher training at the Rhode Island Normal School, working directly with teacher candidates on classroom instructional practices. Craig was a deeply respected educator and administrator, committed to the mission of the Rhode Island Normal School to prepare highly qualified teachers for Rhode Island's children (Rhode Island Normal School, 1914). Craig's greatest legacies are her role as a teacher educator and her influence on teaching practice through the Rhode Island Normal School's Montessori experiment. Over the course of her 47-year career, Craig served in multiple positions related to teacher preparation: principal of the Henry Barnard School, director of teacher training, professor of practice, and dean at the Rhode Island College of Education (Lopes, 2007; Warburton, 2012; Carbone, 1971). The following section provides some insight into Craig's experience during Montessori's first International Training Course.

Report of the 1913 International Montessori Training Course

It is noteworthy how Montessori's work with children in small, disadvantaged communities in Italy became a global sensation. Many in the United States first learned about the new pedagogy through a series of articles published in the then-popular *McClure Magazine* (Gutek & Gutek, 2016). These articles, along

with accounts from a handful of early adopters of the pedagogy, generated an interest in individuals from diverse educational experiences, including faculty members from higher education and teacher preparation programs, as well as educators and administrators from schools for the deaf and schools for girls (Kramer, 1976). All had an interest in learning more about the child-centered philosophy and its possible influence on educational practices.

Upon her return to Rhode Island, Craig provided the board of education with a thorough account of her training, followed by a series of recommendations (Craig, 1913). Details of the course from January 15 through May 15, 1913, included lectures and lessons from Dr. Montessori and her associates as well as opportunities for observations and practice work in Montessori classrooms (Rhode Island Board of Education, 1914). Craig's (1913) report included a list of the weekly theoretical lecture topics and technical lessons, which are listed in Appendices A and B, respectively.

Craig warned the Rhode Island Board of Education about "so-called Montessori teachers [who] attempt direction of a Montessori class without careful study as to the integrity of Montessori doctrine and clear comprehension of Montessori purposes," comparing it to a "criminal act toward children who may be victimized" (Craig, 1913, p. 8). Recognizing a need to understand the pedagogy in practice, Craig offered to study the Montessori Method further by implementing it, under her supervision, in an experimental classroom in the Rhode Island Normal School. She predicted Montessori autoeducation would radically alter the role of the teacher and transform the classroom into a laboratory in which to study and meet the learning and development needs of children ("Inventor of child training system and R.I. woman who studied it," 1916).

After reviewing Craig's report, the Rhode Island Board of Education agreed there was more to learn about Dr. Montessori's method and approved Craig's request to implement it in a classroom in the Henry Barnard School, housed in the Rhode Island Normal School, for the purpose of evaluating the viability of the Montessori pedagogy in Rhode Island classrooms (Rhode Island Board of Education, 1914).

During Dr. Montessori's first trip to America at the end of 1913, she made a quick stop to Providence between speaking engagements in New York and Boston ("Dr. Montessori visits this city," 1913). A reception was held in her honor at the Rhode Island Normal School and more than 100 guests attended, including the governor, members of the Rhode Island Board of Education, and faculty of the Rhode Island Normal School (see Figure 1). The *Providence Daily Journal* reported Dr. Montessori would return to Rhode Island the following summer to deliver training at the state normal school ("Dr. Montessori visits this city," 1913). Dr. Montessori was grateful to Craig for representing the state to which Craig had brought the Montessori pedagogy, saying she was "a woman with a great mind and a fine spirit [and] I have come to appreciate her dearly. If she had not been a representative of Rhode Island I should still have been drawn to her by her exceptionally fine character" ("Dr. Montessori visits this city," 1913, p. 4).

Outcomes of the Montessori Experiment in Rhode Island

Two years after receiving approval from the Rhode Island Board of Education to develop a Montessori classroom, Craig shared outcomes of the experiment:

> Observations of the work of this group of children are a source of professional joy…. Some really remarkable results have been attained. It is a tribute to the pedagogical foresight of the Normal School authorities that this class of children ranging from three to six years of age should exemplify, as it does, the wholesomeness and feasibility of certain Montessori practices hitherto doubtfully regarded. It has been the care of those directing the Montessori experiment to maintain as practicable and as democratic a school as possible, the equipment being simple and the membership limited only by lack of space. It is an apparently justifiable anticipation that from this modest little classroom will issue an inspirational help both to the school with which it is incorporated and to Rhode Island schools at large. (Rhode Island Board of Education, 1916, p. d3)

Figure 1. Photograph taken at a reception in honor of Maria Montessori on December 13, 1913, at the Rhode Island Normal School. From left to right, Theresa Barone (Henry Barnard teacher), Rhode Island Governor Aram J. Pothier, Dr. Montessori, and Clara Craig. From the Special Collections Department of the James P. Adams Library, Rhode Island College. Reprinted with permission.

The children's progress was notable, and the Montessori experiment in Rhode Island successfully replicated many of the same child outcomes Craig had observed during her training in Rome. Word of this success attracted increasingly larger numbers of observers interested in witnessing the classroom application of the Montessori principles. In fact, interest in the program was so great that observers needed to schedule appointments, both to limit the number of observations from those curious about the philosophy and to protect the students' uninterrupted work time, a key Montessori principle (Rhode Island Board of Education, 1916).

The following year's annual report to the Rhode Island Board of Education (1917) continued to highlight the children's continued progress in the Montessori program. Requests were made to the board of education for additional classrooms and a new school building to enroll more children and expand the methodology into the elementary grades, where Craig could make a "more careful determination of the

adaptability of the methods to be used in the public schools in general" (Rhode Island Board of Education, 1917, p. a22). In this report, Craig offered her support of the expansion of the Montessori pedagogy.

> Several children, having been trained in this school and having attained the age of six years, are now candidates for the primary department. These children, even now, excel, by far, the prescribed attainment of children who have progressed beyond regular first grade work. They are attracting the curious interest of expert educators. (Rhode Island Board of Education, 1917, p. a23)

The general public's sustained interest in the Montessori Method led Craig to conduct lectures and special methods courses, across Rhode Island and New England, for teachers interested in learning more about classroom application of the Montessori pedagogy (Christiansen, 2016). Craig also wrote books and a manual about Montessori language materials (Craig, 1919). A review of Craig's manual is discussed in the next section, providing the reader with variations in the Montessori Method developed by Craig in her experimental classroom.

From the Montessori Method to the Rhode Island Normal School Method to the Henry Barnard Method of Reading and Writing

During the early years of Montessori pedagogy in Rhode Island, Craig was already developing her own innovations and adaptations to Dr. Montessori's curriculum, eventually creating a method that combined core Montessori ideas with a different set of materials. In *The Beginnings of Reading and Writing*, Craig (1919) revealed that her experiment had grown beyond a single classroom of 3- to 6-year-olds, approved in 1913, to include an additional first- and second-grade classroom in 1919, with a plan to create a third-grade Montessori classroom the following school year (Craig, 1919). Craig articulated her adherence to the Montessori philosophy, but her observations eventually led her to Americanize the Montessori Method.

> The experiment was inaugurated on a strictly Montessori basis, in thorough accordance with Montessori theory, and with true respect for equipment, apparatus, and program so far as these factors had been personally observed and studied by the writer in the schools of Italy. Gradually, however, although adhering to the many essentials of Dr. Montessori's theory of free education, the practices of the school have been modified and adapted to meet the obviously different reactions of American children…. Some of the Montessori materials, which in the observation of the writer had made potent appeal to Italian children, failed to arouse and hold the spontaneous attention of American children. (Craig, 1919, p. 6)

Craig (1919) described how her sequence supported children's writing, including a shift from Montessori Metal Insets to the Rhode Island Normal School wooden models. Every month, different wooden shapes were offered to the children, reflecting seasonal holidays and depicting relevant areas of study (e.g., birds, homes, dogs). Over time, as children traced around the wooden shapes, Craig (1919) noted that children developed a *graphic vocabulary* that allowed them to draw the shape without the use of the model, using solely muscular memory (see Figure 2).

Next, students were introduced to emery cloth letters, a Craig-developed adaptation of the Sandpaper Letters. (Craig, 1919). She quickly moved children from lessons in isolated letter sounds to constructing words and sentences using a unique Movable Alphabet table that she had also designed tracing emery word cards (e.g., baby, dog), which Craig identified as the *Rhode Island Normal School Alphabet Table* and *Rhode Island Normal School Cards* (Craig, 1919), respectively. The alphabet table replaced the Movable Alphabet. It was designed on a 6-foot-long, child-sized table covered with green felt. Letters were arranged alphabetically on the felt, and a piece of glass rested on the table to protect the materials. The table version of the Movable Alphabet allowed children to move while they retrieved the letters placed on top of the glass that were aligned to the corresponding letter on the green felt underneath (Craig, 1919).

Figure 2. Wooden shapes developed by Clara Craig for children to trace. From the Special Collections Department of the James P. Adams Library, Rhode Island College. Reprinted with permission.

Craig (1919) described how teachers supported children's early writing attempts through individualized learning opportunities that included phonetic dictation of words children were interested in writing, a strategy used in many preschool classrooms today. By 1919, the curriculum was referred to as the Rhode Island Normal School's method of teaching reading and writing (Craig, 1919).

In 1920, the Rhode Island Normal School became the Rhode Island College of Education (RICE). In the college's catalog the following year, Craig was listed as the instructor for a summer session course, The Teaching of Reading and Writing by a Socialized Method. A brief description of the experimental classroom within the Children's School is provided.

> The Children's School is the result of several years of first-hand educational experimentation with children from three to six years of age. It is, moreover, an educational experiment in process. The group concerned, at present, represents primarily the amalgamation of the Kindergarten and Americanized Montessori groups of last year, but no estimable contribution from any worthy educational source or system is excluded. The school purposes real education from the sincere study of young children. It is coming to be recognized more and more that children under the usual school age have intellectual needs that are greatly and generally overlooked. The children's school is really a laboratory where it is possible to observe pedagogy in the making. (Rhode Island College, 1920, p. 23)

The 1921 Rhode Island College Bulletin described the popularity of the experimental classrooms in the Henry Barnard School at RICE, which noted that close to 1,000 visitors representing educational administrators and educators had conducted observations at the school, with nearly 600 of the visitors traveling from outside of Rhode Island. (Rhode Island College, 1921, p. 19).

Long-Term Impact of Craig's Montessori Experiment

Although contemporary research identifies Rhode Island as having formally adopted the Montessori curriculum, no Rhode Island Normal School or Department of Education primary source documents corroborate this statement. Rather, all documents reviewed for this paper referred to the Montessori classrooms as "experimental," even two decades after Craig's training in Rome. Three additional publications provide longitudinal evidence of the Montessori philosophy continuing under Craig's research until her retirement from RICE in 1941 (Bird, 1930; O'Neil, 1937; and Browne, 1939).

Grace Bird, a teacher in the experimental classroom, published "A Successful Experiment in Child Education" in 1930. A decade after Craig's 1919 report, Bird's description of classroom materials mirrors Craig's adaptations of Dr. Montessori's materials, including "emery cloth letters" (Craig, 1919, p. 12) now referred to in Bird's 1930 article as "carborundum letters" (p. 539). Bird's description of the development and use of carborundum letters sounds very similar to today's Montessori Sandpaper Letters.

> Pupils may enter the kindergarten of the Henry Barnard School at the age of three, four, or five. They find the schoolrooms equipped with many attractive incentives to work. Among these are large script letter and word forms made by the teachers by dusting carborundum powder on melted glue applied to cardboard with a brush. These forms and other materials are conspicuously placed within the children's reach to invite the children to use them spontaneously…. The children are then taught how to move the first two fingers lightly over the carborundum letters and words. By this means, they gain a tactual-kinaesthetic-visual-auditory impression of the symbols. They are taught to look intently, trace precisely, and at the same time say the sound distinctly. The one-letter stage is a simple and brief entrance into a procedure which begins almost immediately to deal with larger units. The progressive sounding, seeing, and tracing of word forms carry over to the construction of words and sentences with a large movable alphabet, even before the pupils have learned all the individual sounds. (Bird, 1930, pp. 539–540)

Bird's insight highlights teachers' ingenuity in replicating sandpaper letters conceptually, but developing materials different from Montessori's design with adherence to the philosophy of learning through kinesthetic development. Bird also described the use of the wooden shapes Craig had designed in 1919—which mimicked the purpose of Metal Insets—still in use in the classroom in 1930.

> To gain the necessary motor control for writing, the children trace around patterns in the form of flat models of such common and interesting objects as birds, animals, and candlesticks or other household articles. Then, with colored pencils, they fill in the spaces with orderly strokes. Their own outlines furnish the limits beyond which they must not go. The tracing models are large in size, appropriate in form, and graded in difficulty. They lead the children to the easy, fluent, sidewise movement across the page characteristic of legible handwriting. The random use of the pencil—in other words, the scribbling tendency—is directed and controlled. (Bird, 1930, p. 540)

Bird (1930) referenced individualized learning as a strength of the classrooms, where students advanced in their learning as they were ready, and not according to their age or grade. And when children transferred to new schools, they were often "placed in grades higher than those they left" (Bird, 1930, p. 544).

What is missing from Bird's (1930) article is any reference to Dr. Montessori as the originator of many of the materials and philosophical approach to instruction used to establish these outcomes. The experiment, I believe, referred to the school's process of studying and reflecting on its own teaching practices as a way to refine its instructional methods

Two additional documents—Father John O'Neil's master's thesis, *C.E. Craig's Adaptation of the Montessori Method in the Rhode Island College of Education* (1937), and Rose Butler Browne's doctoral dissertation, *A Critical Evaluation of Experimental Studies of Remedial Reading* (1939)—provide evidence of Craig's work more than two decades after the experimental classroom began.

O'Neil was a Catholic priest at St. Sebastian's Parish in Providence. Interestingly, this is the same parish to which Craig's brother, Fr. James Aloysius Craig, was also assigned. While O'Neil was completing his studies at the Catholic University of America in Washington, DC, O'Neil met Craig through a family member, which likely afforded him the opportunity to work closely with her and provide a careful account of her work. Much of O'Neil's thesis reviewed previously shared highlights of Craig's work, but his introduction suggested Craig's experiment was not without challenges.

> In this search for a more natural approach to education, there have been many to criticize and condemn the work of the experimenters as an aimless quest for entertaining novelties, and to denounce the departures of progressive educators from the venerable practices of the past, in order to adopt what is fallaciously described as an inconsequential series of worthless fads. (O'Neil, 1937, p. 1)

Criticism of the pedagogy was as much a part of the early Montessori experience as was its celebrity. Prior to Dr. Montessori's arrival in New York in December 1913, at least a dozen articles had been published in both professional journals and popular periodicals that minimized and even attacked the Montessori Method of education (Wilcott, 1968). William Kilpatrick of Teachers College, Columbia University, was one of the strongest critics of the Montessori pedagogy (Wilcott, 1968). When he spoke to the Connecticut Valley Kindergarten Association in 1912, Kilpatrick compared Dr. Montessori's work to educational theory from the 1880s, saying it trailed 30 years behind the then-acceptable views of education (Wilcott, 1968). Elizabeth Ross Shaw, presenting at the prestigious National Educational Association 1913 Annual Meeting, stated that the Montessori Method would "produce a generation of tea-tasters, piano-tuners, perfumers, dry-good experts and other sensory specialists" (Wilcott, 1968, p. 149). In this context, O'Neil's (1937) statement suggests that Craig endured similar criticism, despite her successful work over the previous 25 years that had been fully endorsed by the Rhode Island Board of Education.

Despite these criticisms, Craig's influence on the young teachers she trained is undeniable and most visible in the work of Rose Butler Browne, a particularly accomplished student of Craig's. Browne completed the Rhode Island Normal School program in 1919 and became the first African-American woman to obtain a doctorate in education from Harvard University (Browne & English, 1969).

Browne's dissertation included remedial reading strategies focused on kinesthetic surfaces (e.g., emery cloth letters) as a way to dramatically increase reading proficiency (Browne, 1939; Tsering, 2010). In her autobiography, Browne referred to the ingenious Montessori tools she learned about as a student at the Rhode Island Normal School. She believed they introduced children living in poverty to materials that supported their development and encouraged their curiosity, characteristics that are foundational to later reading success (Lopes, 2003). Browne's experience with Montessori materials influenced her own research, as well as her work over the course of her 47-year teaching career in historically black colleges (Lopes, 2003).

O'Neil's (1937) and Browne's (1939) theses were published near the end of Craig's career at RICE, 25 years after Craig began the Montessori experimental classroom. Both documents offered similar analyses of the materials and teaching methods Craig herself had documented in her earlier reports. These respected external publications probably confirmed to Craig her own professional success. At a minimum, they offered longitudinal evidence of Dr. Montessori's enduring influence on one participant in her inaugural 1913 training institute—a participant approved by the Rhode Island Board of Education who administered a teacher preparation program, in turn influencing countless other educators over the course of her career.

Limitations

Reliance on existing archival documents leaves many unanswered questions. Though there is some evidence of how Craig revised Montessori materials, it is not clear to what extent the pedagogy itself was modified. Neither do the documents provide a clear rationale for why Craig felt compelled to Americanize the curriculum, beyond her statement that American children did not appear as interested in some of the materials as Italian children did (Craig, 1919).

Craig's work began in an era before women had the right to vote, when history was "deeply gendered" (Wagner-Martin, 1994, p. 175) and, unlike today, when women were largely absent from state-level educational documents. So it is of particular note that Craig held the respect of state educational leadership, offering her financial and administrative support. Craig, in return, provided annual updates highlighting outcomes of the classroom experiment. Though these archived documents do not tell the entire

story, they do provide rare insight from a woman who planned, implemented, and evaluated an educational initiative early in the 20th century.

Conclusions

Building on previous research, I provide three suppositions about why Craig and the Rhode Island Board of Education might have wanted to Americanize the Montessori Method: (a) lack of access to approved Montessori materials, (b) fear of the possible consequences of unauthorized claims to Montessori training, and (c) a shift in educational goals toward nationalism during World War I.

Lack of Access to Approved Montessori Materials

One logical reason for the revisions Craig implemented could be simply a lack of access to approved materials. Photographs in the Rhode Island Normal School Catalog (1916) show that the classroom had some basic Montessori materials, such as Number Rods, the Brown Stairs, and the Pink Tower; perhaps Craig brought these materials back from her training in Rome. It was difficult to import materials from England or Italy, but by 1929, Dr. Montessori had collaborated with Albert Nienhuis to offer her classroom materials worldwide (Nienhuis Montessori, 2017).

It is reasonable to assume that, without proper resources, Craig and her colleagues were compelled to develop their own Montessori materials (e.g., emery cloth letters), using supplies readily available to them.

Fear of the Possible Consequences of Unauthorized Claims to Montessori Training

Kramer (1976), Standing (1998), and Coleman (2011) reported on Dr. Montessori's August 1913 letter to the editor of *The New York Times*. The purpose of the letter was to tell the public who had been officially trained during the 1913 International Training Course. Dr. Montessori stated that, because the training lasted only 4 months and she believed her method was not yet fully developed, she did not grant her approval for any training courses "not under my direct supervision, so that for the present no training courses for the preparation of teachers, except those held here in Rome, will be authorized by me" (Montessori, 1913, p. 10).

Since Craig was the administrator of a teacher preparation institution, she would have been in direct conflict with Dr. Montessori's edict prohibiting newly trained individuals from developing training courses without her direct approval. This alone seems a compelling reason for Craig to refer to her work as an "experiment" and not a Montessori training program. The desire to comply with Dr. Montessori's request may also explain Craig's revisions to materials and the name change from the *Montessori Method* to the *Craig Method* and eventually to the *Henry Barnard Method of Reading and Writing*.

Shift Toward Nationalism in Educational Goals During World War I

Both Kramer (1976) and Standing (1998) suggested the impact of World War I as a possible reason for the demise of the first-wave Montessori Method in the United States. It is also possible that World War I radically shifted the country's educational goals toward a nationalist curriculum.

Unlike earlier annual reports to the Rhode Island Board of Education that focused on the number of teachers employed in schools and the requests for funding to expand classrooms, the opening paragraph of the 1917 Rhode Island Board of Education report notable shifts in language and tone:

> In reviewing a state system of public schools when the nation is at war, it is hardly possible to ignore the relation of public education to civic devotion and sacrifice, and the civic obligations of the public school in the great national endeavor that engages all. Public education in the past has been national preparation for the crisis of the present…it also shows the true function of the school in a democracy and teaches the imperative duty of

> the school not only to train its pupils in loyal citizenship but also to participate actively in our national life. (Rhode Island Board of Education, 1917, p. 3)

The following year's board of education report pointed to a concern that certain school curricula were politically subversive: "to a limited extent our schools and school books had been used for purposes of disseminating anti-American and undemocratic propaganda…but no public school teacher was found guilty of teaching doctrines opposed to Americanism" (Rhode Island Board of Education, 1918, p. 5).

According to the Rhode Island Historical Society (RIHS), World War I prompted a statewide American citizenship campaign. Through the efforts of local community organizations, such as the Providence Chamber of Commerce and the Providence YMCA, almost 20,000 new citizens were naturalized in Rhode Island between January 1917 and July 1918 (RIHS, 1991).

This historical context may provide a rationale for Craig's Americanization of the Montessori curriculum. Craig's focus was to "testify as to what has lived and developed out of the experiment that may be of new service to the American school, the American teacher, and the American child" (Craig, 1919, p. 8).

Within this timeframe, the first-wave Montessori movement began to die out. The language and tone of the annual Rhode Island Board of Education reports from 1917 through 1919 provide some insight into the degree to which nationalism and xenophobia affected educational goals in Rhode Island. Whatever momentum first-wave Montessori programs experienced prior to the outbreak of World War I, it is reasonable to imagine the focus on war efforts far outweighed the needs of an experimental classroom for young children in a teacher preparation program. Despite these policy and political barriers, aspects of the Montessori philosophy continued under Craig's supervision.

Contemporary Policy Implications

Gaining a greater understanding of an American educator who implemented the Montessori philosophy early in the 20th century leads to the question: What relationship, if any, exists between a first-wave Montessori initiative and contemporary education policy issues? I close by linking Craig's century-old experiences to policy implications currently facing a rapidly diversifying Montessori field. By broadening the topics to include access to materials, organizational growth, and educational policy, it becomes clear that the issues are as relevant today as they were for Clara Craig in 1913.

First, as Lillard and Heise (2016) reminded us, Montessori materials are an integral component of the pedagogy. Their data suggested that child outcomes were stronger when children had access to Montessori materials versus supplementary or non-Montessori materials. As new models of Montessori education evolve, funding must be allocated to equip classrooms with a full complement of Montessori materials. Similarly, it is crucial to heed Craig's recommendation to train teachers well so that they possess a deep understanding of the Montessori pedagogy and its materials (Craig, 1913).

Second, the range of available funding sources in traditional education both expands and diversifies programming, but it also creates unintended consequences. Across educational settings, federally funded Head Start programs, state-funded public schools, and community and faith-based programs all respond to mandates set by their funding sources, creating a specific culture of curricula, instruction, and assessment requirements. The variety tends to highlight differences in approaches, rather than build unity or create a shared language about work with children and families.

The current organizational growth in Montessori programs mirrors some of the same issues affecting traditional education (Ayer, 2017; MPPI, 2015). As Whitescarver and Cossentino (2008) warned, with the current growth of Montessori delivery systems, Montessorians may find it difficult to remain true to the philosophy. To avoid this outcome, national and international Montessori organizations must continue to build partnerships that unite the expanding Montessori community. For example, the National Association for the Education of Young Children (NAEYC) recently announced its Power to the Profession initiative to unify the highly diverse field of early childhood education through a shared framework of

career pathways, knowledge and competencies, qualifications, standards, and compensation (NAEYC, n.d.).

Third, as state and national educational policies continue to mandate requirements (e.g., assessments, quality-rating systems, curricula, standards), the Montessori community should develop its own understanding of how Montessori education fits within the greater education context. By evaluating our programs and using assessment tools and language common to the greater education community—without surrendering core beliefs and practices—we can build a more global understanding of the impact of Dr. Montessori's philosophy on children's learning and development. Craig adapted to the education policy of her era while maintaining core Montessori beliefs, such as children's need for freedom in learning. Children's freedom to select topics of interest and remain engaged in activities for extended periods of time remained embedded in Craig's experimental classrooms and must remain foundational to all Montessori classrooms today.

The research offered in this paper highlights events from the past as a means of informing contemporary issues. The American Historical Association suggested that "only through studying history can we grasp how things change; only through history can we begin to comprehend the factors that cause change; and only through history can we understand what elements of an institution…persist despite change" (Stearns, 1998).

Historically, each Montessori wave was affected by outside influences (e.g., policy, politics, funding), which in turn created variations in program delivery. As new Montessori initiatives increase across the United States, Craig's sense of experimentation encourages us to evaluate how programs implement the Montessori Method, as well as to identify (a) the essential components of the pedagogy and (b) the depth, dosage, and duration required to ensure children's learning and development. If our collective goal is to preserve Montessori pedagogy, we should know and reflect on previous experiences and outcomes related to implementing the Montessori Method.

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Appendix A
Theoretical Lectures from Dr. Montessori's 1913 International Training Course

Provided are the dates and topics of Dr. Montessori's theoretical lectures between January and April 1913 during the first International Montessori Training Course, as recorded by Clara Craig.

Date	Topic
January 23	The social conditions of the child
January 30	The biological concept of liberty
February 7	The environment, didactic materials, and the teacher
February 13	The independence of the child
February 20	Prizes and punishments
February 27	The liberty of the child in the family / Social study of the family
March 6	The method of giving a lesson and a comparison with other methods
March 13	Muscular education
March 27	Nature in education
April 3	Attention
April 12	Imagination
April 17–18	Education of the senses and intellect
April 24–25	Spoken and written language / Will
April 30	Moral education

Appendix B
Technical Lessons from Dr. Montessori's 1913 International Training Course

Provided are the dates and topics of Dr. Montessori's technical lessons between January and April 1913 during the first International Montessori Training Course, as recorded by Clara Craig.

Date	Topic
January 28	The biographical chart and anthropological observation
January 31	Stature and weight
February 6	Causes influencing weight and stature
February 11	The head
February 18	The analysis of the average / Theory of the average man
February 25, March 4 and 11	Presentation of the didactic materials / Practical life
April 1	Solid insets
April 8	Limits of the didactic materials
April 14	Cutaneous senses
April 15	Taste, smell, and hearing
April 22	Writing
April 23	Reading
April 28	Arithmetic
April 29	Summary of the biological chart