



Montessori Education and a Neighborhood School: A Case Study of Two Early Childhood Education Classrooms

Mary D. Burbank, University of Utah
Melissa M. Goldsmith, University of Utah
Jennifer Spikner, Chicago, IL
Koeun Park, University of Utah

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Abstract: Project SYNC (Systems, Yoked through Nuanced Collaboration) details perspectives of a community of stakeholders committed to the enhancement of early childhood (i.e., prekindergarten through grade 3) education. Although there is a growing number of public-school programs informed by the Montessori philosophy, Montessori educational experiences often take place within affluent communities. SYNC aimed to enhance the prekindergarten through grade 3 educational experiences for traditionally underserved students by transforming two traditional early childhood classrooms to Montessori settings within a diverse, Title I school. Montessori pedagogy, curricula, and materials aligned with the school's dedicated commitment to social justice. The study, one in a series, explored the impact of Montessori education on a neighborhood school community as evidenced through stakeholder opinions, project implementation, and teacher attitudes. Project data illustrate that a Montessori educational experience created learning opportunities that supported children from culturally and ethnically diverse communities in a traditional, Title I elementary school.

Project SYNC (Systems, Yoked through Nuanced Collaboration, a pseudonym) details perspectives of a community of stakeholders committed to strengthening prekindergarten through grade 3 education. Historically, Montessori educational experiences take place in private, more affluent communities, despite an early presence within lower socioeconomic communities in Italy in the early 1900s. SYNC aimed to enhance the educational

experiences for traditionally underserved students in early childhood classrooms as reported by educators committed to this work.

SYNC emerged by transforming two mainstream early childhood classrooms for 3- to 5-year-olds within a diverse, Title I school. Montessori curricula, pedagogy, and materials were the centerpiece of the classrooms and

aligned with the school's dedicated commitment to social justice. Through one in a series of research studies, project researchers evaluated impact through (a) stakeholders' opinions of Montessori education and early childhood education, (b) classroom observations, and (c) attitudes of teacher participants on the ways in which a Montessori curriculum extended student learning.

Literature Review

Montessori Education in Settings with Diverse Students

Montessori education emerged in the early 1900s with the work of Dr. Maria Montessori and her teaching of young children (Tozier, 1911). Dr. Montessori's model requires teacher training and credentialing (American Montessori Society [AMS], n.d.). As an educational model within American schools, the Montessori philosophy includes a unique presence in ethnically diverse communities, particularly among communities of color where Montessori schools have served as an alternative to traditional public schools (Mathews, 2007). In fact, public Montessori schools emerged in the 1960s and 1970s as part of desegregation initiatives in many communities.

In their work, Brown and Steele (2015) highlighted unique features of Montessori education, such as ongoing contact between teachers and students (i.e., spending 3 years together) and as a platform designed to develop "deep knowledge, mutual respect, and trust with their students of color" (p. 23). Montessori education offers an educational experience that creates opportunities for students to engage in learning opportunities that are self-directed, exploratory, and based upon individual learners. As such, Montessori education may be thought of as culturally responsive, as it is based upon classroom learners (Schonleber, 2011). Extended time together for teachers and students may reduce the misinterpretation of students' behaviors when their cultural backgrounds differ from their teachers. Further, the flexibility of Montessori experiences allows students, particularly students of color, to express and be themselves without assimilating to the norm within more-typical classroom settings. Montessori schools have created opportunities that provide students of color with education experiences that are quite different from typical learning experiences within many settings (Debs, 2016).

Because contemporary classrooms and schools include an increasingly diverse student population (Musu-Gillette et al., 2017), researchers and policy makers are in the position to consider whether and how past patterns of segregation related to resources and educational experiences are evident today (Orfield, Kucsera, & Siegel-Hawley, 2012). As a result, Debs (2016) argued for additional research to determine the role of public Montessori education as an alternative to traditional teaching settings with racially diverse students.

Put simply, research on Montessori education is complex, varied, and limited in some cases (Lillard, 2012; Lillard & Heise, 2016; Marshall, 2017). Lillard (2012) reasoned that inconsistent research findings on the effectiveness of Montessori education may be caused, in part, by the extent to which Montessori pedagogy is implemented within a classroom. Specifically, students enrolled in higher-fidelity Montessori programs had greater gains on executive functioning, social problem-solving, and academic achievement measures (e.g., reading, math, vocabulary) when compared to individuals enrolled in lower-fidelity Montessori programs.

The impact of Montessori education varies with factors such as teacher ethnicity, the integration of a culturally responsive setting, and overall enrollment of a diverse student body (Ansari & Winsler, 2014; Banks & Maixner, 2016; Brown & Lewis, 2017; Debs & Brown, 2017; Rodriguez, Irby, Brown, Lara-Alecio, & Galoway, 2005; Schonleber, 2011). The research of Ansari and Winsler (2014) and Rodriguez et al. (2005) addressed program impact based on factors such as the length of evaluations and research that disaggregates Montessori classroom experiences by race and prompts consideration of impact in new ways (e.g., Brown & Lewis, 2017; Debs & Brown, 2017; Moody & Riga, 2011). For instance, Brown and Lewis (2017) found that Montessori education could be an effective pedagogy for Black students, particularly in the area of reading, where Montessori classroom students scored higher on state assessments when compared to students in other programs.

Debs and Brown (2017) and others (e.g., Debs, 2016; Wohlstetter, 2016) offered insights into the dimensions of Montessori settings that affect programs and student success. Within their work, *success* includes both academic and nonacademic success (e.g., efficacy,

leadership, engagement with topics of race). Debs and Brown (2017) also referenced outcomes of a Montessori experience in the executive functions typically experienced by students (e.g., leadership, self-regulation) and their linkages to long-term independence and conflict resolution. Finally, learning outcomes when the Montessori model is in place revealed that traditional standardized assessments failed to address the whole child and might not best indicate impact on student learning beyond focal areas within the assessment (e.g., social skills, independence, ability to choose; Manner, 2007). These findings mirrored critiques of the limitations of common standardized assessments of learning, particularly for children of color (Crocco & Costigan, 2007; Solórzano, 2008).

Lillard et al. (2017) investigated the impact of Montessori preschool education on student learning and longer-term performance. They compared two groups of children who participated in a random lottery that assigned some students to a Montessori program and others to traditional settings. They analyzed children's performance on a series of assessments linked to academic achievement, theory of mind, mastery orientation, enjoyment of school, and executive functioning. Over the course of the study, the children who experienced the Montessori preschool performed better than did their traditionally educated peers on measures including achievement, social understanding, mastery orientation, and related scholastic tasks. The researchers demonstrated that the differences over time between children from traditional programs and those in the Montessori program decreased, despite the income differences between the groups. Their findings indicated the impact of the early childhood Montessori experiences for young children.

A larger study in South Carolina, using a quasi-experimental design conducted by the Riley Institute at Furman University and funded by the Self Foundation (i.e., Culclasure, Fleming, Riga, & Sprogis, 2018), represents one of the most comprehensive studies on Montessori education. This multiyear examination included 45 programs and evaluated features of schools, demographics, and the impact of Montessori education on academics, behavior, creativity, executive functions, and social skills. Researchers found that Montessori students were able to meet or exceed state standards in math, science, social studies, and English language arts.

Further, the authors found growth in students' long-term performance in math and social studies, as well as mixed results in science. Students within the Montessori settings met or exceeded their traditionally prepared peers in executive functioning, creativity, attendance, and discipline. Though positive, executive-functioning results were somewhat mixed.

Data gathered from teachers in the South Carolina schools highlighted teacher perceptions of the fundamental classroom elements, including use of materials, assessment, and curriculum integration (Culclasure et al., 2018). Teachers cited the opportunities and some of the challenges faced in their work as Montessori teachers (e.g., standards compliance). Similar to the findings in South Carolina, SYNC offers a review of two Montessori Early Childhood education classrooms within a racially diverse, Title I school.

Systems, Yoked through Nuanced Collaboration (SYNC)

SYNC is a unique educational program that began when teachers and administrators, who had been partners in the local educational community, collaborated to influence early childhood education at Dahlia Elementary (a pseudonym). The primary goal of SYNC was to provide an educational experience for children in a Title I school under school improvement linked to state evaluation criteria in new ways within this educational setting.

Methods

Key SYNC stakeholders included State University, City School District, Dahlia Elementary School, and Conservatory (all pseudonyms).

State University

State University is a highly ranked institution within the city of Lake Town (a pseudonym). It is a doctorate-granting, research university with significant research activity. State University facilitated the partnerships and resources where SYNC aligned with the diversity focus of State University's teacher preparation mission and its connection to urban classrooms and schools. State University invited relationships with stakeholders, secured funding, navigated district requirements in concert with their Dahlia colleagues, and conducted program-evaluation efforts.

City School District

City School District is an urban school district with a diverse student body, representing more than 100 languages. Over half of the students come from ethnically and religiously diverse backgrounds. The district consists of a majority of students who are low income, and about 15% of the district's students receive special education services. Publicly available district data identify that approximately one-third of the elementary student body, nearly four in 10 of the middle-school student body, and just over one-quarter of the high-school student body are English learners.

The district provided administrative oversight on the curriculum and compliance requirements for early childhood education at Dahlia, including enrollment numbers and general assessments of student growth for 5-year-olds (e.g., Dynamic Indicators of Basic Early Literacy Skills [DIBELS]).

Dahlia Elementary School

Dahlia is a long-standing public, Title I neighborhood school. It supports approximately 550 students. Prekindergarten through eighth grade are represented at Dahlia, with multiple single-aged classrooms at each grade level. The school offers full-day kindergarten and prekindergarten. The school consists of a minority-majority student population; just over half are English learners, and nearly nine in 10 receive free or reduced lunch. Dahlia incorporates a social-justice curriculum and implements trauma-informed practices, supporting students, families, and teachers. Identification for special education services in the district typically takes place in first grade. Children in need of speech/language services are identified as early as age 3. Recent district policy changes have allowed for dedicated assessments for special education services for those in early childhood classrooms. Dahlia faculty members and the school-improvement council approved SYNC in full compliance with program operations and building policies.

Conservatory

SYNC teachers received support from Montessori education experts from Conservatory, a private, nonprofit Montessori school in Lake Town. Conservatory offers an authentic Montessori education to children, representing infants through sixth graders. Classrooms adhere to traditional Montessori multiage groupings. The student body at Conservatory is composed of 81% White

children and 19% children of color. Ten percent of families receive tuition assistance. Conservatory provided the model, curricular choice, pedagogy, and professional development for in-service teachers. Conservatory employs teachers with Montessori credentials in each classroom. The teachers at Dahlia were prepared through the same Montessori teacher-education program as the teachers at Conservatory. This teacher-education program is housed within a local institution of higher education.

Project Funding

State University received a grant from a foundation linked to a private donor. The funds covered all costs for staffing, mentoring, materials, and evaluations. State University and the foundation grant funded 3 years of salary and benefits for the focal teachers and an additional 5 to 7 hours per week for each paraeducator who provided support in the Montessori classrooms. Since the beginning of the project, the district assumed full funding for paraprofessional base salaries. The foundation also supported the Montessori education classrooms by providing materials and curriculum. Because the classrooms were an addition to the extant classrooms, external funding was required for the program. If the program discontinues, teachers will resume their non-Montessori positions at the school, and the district will continue to pay their salaries.

Project Teachers

Two teachers working at Dahlia Elementary as traditional early childhood educators, teaching 3- to 5-year-olds, participated as focal teachers. Each teacher opted to participate in SYNC and understood that funding for the project would span 3 years. For existing teachers at Dahlia Elementary, the move to the Montessori classrooms for the SYNC teachers reflected a change in their assignments.

Each classroom of 3- to 5-year-olds consisted of one teacher and one paraeducator (i.e., an assistant). The first teacher was an existing Dahlia Elementary faculty member in her early thirties and a 7-year veteran of this school with a master's degree. The veteran teacher identified as Italian American and knew some Spanish. The second teacher was a first-year teacher in her midtwenties hired to work at the school during the year of project. The beginning teacher was bilingual in Spanish and identified as Mexican American.

The first paraeducator, a bilingual (i.e., Spanish and English) man in his early twenties, worked with the veteran teacher. The second paraeducator was a native Spanish speaker in her late forties who had worked in early childhood education in the past.

The teachers completed Montessori certification through an accredited, college-based, 50-credit program that they took from a local 4-year college. Coursework took place during the summer prior to program implementation. Continuing education units for course work, teaching practica, and ongoing supervision rounded out the program criteria. The specific credential was part of a Montessori Early Childhood credential from AMS.

Program coursework aligned with the college's Montessori credentialing program, and the bulk of the coursework occurred during a summer semester. Teachers also participated in biweekly seminars during the school year. Full-time teaching within their classrooms met the student-teaching requirement for the Montessori credentials. There were supervisory visits by college Montessori specialists and by supplemental support from an outside Montessori consultant.

Teachers received supervisory support as part of the practicum experiences linked to the Montessori credentialing program. Montessori-credentialed supervisors observed each SYNC teacher during practicum teaching. To provide additional support, the external consultant from out of state visited the classrooms of the SYNC teachers three to five times during the year.

In addition to the Montessori education mentoring, standard support was offered to all Dahlia educators through training designed to enhance their abilities to prepare students to meet the student-performance requirements. Specifically, SYNC students were required to complete all mandated assessments. SYNC teachers understood that the DIBELS assessment would be required of their students.

Project Students

Each Dahlia classroom included 17 to 20 students. The majority of students were Latino, comprising both immigrants and students born in the United States. American Indian, Somali, multiracial, and White students were also part of the classroom community. As a Title

I school in an ethnically and culturally diverse school and district, the population of children within SYNC mirrored the school's demographics, where the majority of students were from culturally and linguistically diverse backgrounds.

Children were assigned to the Montessori classrooms, with parental approval, as an alternative early childhood education classroom within Dahlia. Deliberate recruiting efforts included invitations to neighborhood families to participate in the SYNC classrooms. Families were within the school's boundaries, so any neighborhood student had the opportunity to enroll. During the first year, the number of families interested in the program matched the capacity for enrollments. Over time, the waiting lists grew as the program's reputation expanded. Priority for enrollment within the SYNC classrooms went to siblings of current students, with second priority to neighborhood children. Overall, enrollment numbers ensured the demographics matched the community and other early childhood classrooms at the school.

The opportunity to be part of a specialized program, within the context of a traditional public school in the neighborhood of participants, was particularly appealing to families whose finances did not typically allow for private-school tuition. The SYNC families mirrored those of Dahlia in every other way.

Project Classrooms

Dahlia Elementary has four early childhood classrooms. Two of the four classrooms became comprehensive Montessori experiences for young learners (i.e., prekindergarten). The remaining two classrooms remained traditional early childhood settings. Embedded within Dahlia Elementary, focal classrooms featured a fully integrated Montessori program. All Dahlia classrooms offered full-day classes for early childhood students.

Both classrooms were fully equipped with Montessori education Early Childhood materials and curricula. The 2.5-hour uninterrupted morning work cycle, individualized lessons, materials implementation, and daily teacher observations authentically reflected Montessori principles and pedagogy. Students worked at their own pace, and teachers engaged with students one-on-one and in groups. Because of the independence and self-direction required of them, students learned

to navigate conflicts without adult assistance and understood the expectations for patience and turn-taking when materials were being used by classmates.

Table 1 summarizes the program-evaluation efforts of SYNC, which is supporting evidence for this case study (Merriam, 1988). The evaluation captured investigations of SYNC classrooms through the views and experiences of stakeholders and teachers and through classroom observations of students. Enhancing the internal validity of the research, case-study data consisted of multiple data sources (Bouck, 2011), using the classroom observations to support or contest teachers' explanations of classroom experiences, for example. To enhance the internal validity of our findings, SYNC researchers documented the case and methods so that an audit trail could build confidence in the results (Merriam & Tisdell, 2016). Case studies connect the microlevel (i.e., students, teachers) to the macrolevel (i.e., curricular choice) by offering a detailed account of the case (Vaughan, 1992).

Planning for SYNC occurred during the 2015–2016 school year, and the first year of implementation occurred during 2016–2017. Evaluation data capture key findings from the project planning stage (i.e., planning year) and the first year of implementation, when the traditional classrooms became Montessori classrooms (i.e., implementation year). Data allowed a comparison between stakeholder attitudes before and after implementation, isolating the role that Montessori education played in teaching and learning, the school community, and early childhood education at a neighborhood school. Classroom observations and teacher interviews demonstrated the actual Montessori classroom experience for teachers and students.

Attitudinal data during the planning year were generated from in-depth, in-person interviews with administrators and early childhood education specialists from State University, Conservatory, School District, and Dahlia.

Forty-five-minute interviews were conducted with six stakeholders and included a series of questions (see Appendix A). Some questions were static among all stakeholders, and other questions were crafted to be particular to each stakeholder (Johnson & Christensen, 2014).

Attitudinal data were collected during the implementation phase and included electronic-survey data from six team members following 1 year of implementation (e.g., Dahlia in-service teachers, a Dahlia administrator, a Conservatory administrator). Most stakeholders remained in their positions in the planning year, allowing for re-interviews. The survey included four closed-ended questions and 10 open-ended questions. Questions addressed student-learning impact, teacher impacts, perceived effects of the Montessori curriculum on the school, and attitudes toward the collaboration fostered by SYNC (see Appendix B). The survey received an 86% response rate. SYNC researchers examined survey data using frequency distributions (Neuman, 2003), data segmentation, and coding into themes (Miles & Huberman, 1994).

To further probe the Montessori methods and outcomes with implementation, emails from the project leader to the focal teachers prompted teacher feedback immediately after the 2017–2018 school year. These follow-up questions documented narratives from teacher participants. The data highlight teachers' impressions of the impact over the 2-year Montessori model implementation. Questions addressed the Montessori model's impact on learning in the classroom and the importance of this Method and pedagogy to children in their classrooms (Appendix C). Email responses served as open-ended comments, which SYNC researchers processed and analyzed through data segmentation and coding into themes (Miles & Huberman, 1994).

Table 1
Program Evaluation for Project SYNC

Method	Timing	Participants	Sample size
In-depth interviews	Planning year	Stakeholders	6
Survey	Implementation year	Stakeholders	6
Open-ended responses	Implementation year	Dahlia teachers	2
Classroom observations	Implementation year	Dahlia students	34–40

A participant–observer conducted 120 hours of observations of student learning and teaching practices. The observer was a graduate teaching assistant whose doctoral emphases included sociocultural dimensions of education. She completed a descriptive narrative on the classroom settings. Observations occurred over 3 months at both Dahlia and Conservatory. The goal was to document the curriculum and outputs of SYNC and to gain perspectives across two sites. Within the SYNC classrooms, critical features of the observational data reflected those areas Debs and Brown (2017) had cited as influencing student success. Specifically, classroom observations focused on traditional components of Montessori education along with dedicated attention to a culturally relevant social-justice curriculum (Banks & Maixner, 2016).

Two members of the research team, who were not involved in the classroom observations, coded the observer’s field notes for themes and categories within those themes (Miles & Huberman, 1994). For interrater reliability, coding occurred first separately and then together.

Findings

During the planning year, stakeholders admitted they had taken a leap of faith to forge a partnership that integrated a Montessori model into their public-school classrooms. Because of demands on educators to meet a range of assessment mandates, Dahlia educators were willing to try a model that might affect how their students would perform on future assessments. They were willing to take the chance. At the implementation stage, the survey data revealed the partners’ commitment to Montessori education principles to facilitate student learning within the context of their school. Classroom observations captured daily classroom activities of students in their classrooms. Table 2 summarizes the SYNC findings of the impact of the Montessori curriculum on teaching and learning, the school community, and early childhood education. In these areas, stakeholders had planned well for issues that occurred during implementation, including teachers finding meaning in their work, educators working together for students, anticipating the importance of family connections, and growth in student independence.

Table 2
Summary of Project SYNC Findings

Stakeholder	Project stage	
	Planning year	Implementation year
Teachers and students	<ul style="list-style-type: none"> Teachers present pedagogy as cooperative and comprehensive Teachers find meaning in their work Students exhibit fewer behavioral issues Students learn faster Students would be labeled less frequently 	<ul style="list-style-type: none"> Learning to engage cooperatively Interactions between teachers and students Behavior management that includes students’ abilities to resolve conflicts and problem-solve Increased student confidence
Dahlia school community	<ul style="list-style-type: none"> Attentiveness to community demographics Anticipated family involvement as part of Montessori education 	<ul style="list-style-type: none"> Increasing family engagement by reaching out to families to explain Montessori pedagogy
Early Childhood learning	<ul style="list-style-type: none"> Potential impact on student agency Potential impact on students and their families 	<ul style="list-style-type: none"> Increase in student engagement Seeing students as individuals Fulfillment of student potential Language development

The Montessori Model’s Impact on Teaching and Learning

Planning year

Before SYNC, Montessori education had been new to the stakeholders; however, each partner approached Montessori pedagogy with an attitude of excitement. Each stakeholder expected that Montessori education would have a positive impact on student learning. Montessori education would present teachers with another teaching method for aiding student learning that, according to a stakeholder, comprised a “comprehensive curriculum and pedagogies.” According to another stakeholder, Montessori classroom experiences would help teachers to find even more “meaning in their work.” When imagining how Montessori education would affect students, stakeholders said they expected Montessori classrooms would involve “less labeling of kids,” bring “opportunities for each child,” allow “kids [to] learn faster,” and “reduce behavioral issues.”

Stakeholders were overwhelmingly positive about SYNC, but, at the planning stage, some individuals expressed concerns about whether it was possible to demonstrate

SYNC’s impact on teaching and learning. They felt that impact data might be needed for SYNC to be determined successful and to receive continued support. One stakeholder said that the effects of educational initiatives take years to appear in outcomes, such as in standardized testing scores.

Implementation year

Classroom observations reflected the influence of the Montessori education philosophy on daily teaching and learning. As shown in Table 3, observed themes included nuances in behavior management, classroom culture, instruction, and the roles of students and teachers. These larger themes emerged from specific practices observed in the classroom. When teachers engaged in behavior management, observations indicated that teachers in the Montessori classroom desired a quiet classroom in which students could perform their individual work and avoid conflict in class. Observations of the classroom community indicated that students were interested in each other’s individual work, participated in casual conversations, and were relating to one another in their decisions to share, volunteer, and/or make

Table 3
Classroom Observation Themes

Theme	Most common classroom practices for theme
Classroom culture	Behavior management <ul style="list-style-type: none"> • teachers promoting a quiet classroom: students using soft voices and hand raising • teachers managing when students were doing what they wanted • students arguing or fighting
	Classroom community <ul style="list-style-type: none"> • students interrupting lessons because of interest in what others were doing • students rejecting sharing • students volunteering for tasks • students and teachers enjoying casual conversations • students making peace with each other
Instruction	Teacher interacting with an individual student and delivering lessons individually
Role of students	Students correcting one another’s behavior and speech, casually or in a lesson
Role of teachers	Classroom management <ul style="list-style-type: none"> • asking students to find work • staying close or at a distance depending on whether it is an individual lesson or a group lesson • organization • encouraging students and giving compliments • keeping order during work time

peace. Observations of classroom instruction revealed a dynamic classroom, where students often interacted one-on-one with their teachers. Peers interacted with one another too. Students were observed educating one another through correction, either casually or as part of a lesson, as a form of peer learning. While managing their classrooms, teachers assisted students with their work and organized materials.

At the start of SYNC, teachers indicated a need for additional Montessori education support in the classroom to further facilitate student learning. For example, teachers cited curriculum materials as a necessity. Teachers began to see the effects of SYNC, particularly in the area of student confidence, after they received increased mentoring support. When asked to discuss the impact of Montessori education on her teaching, the beginning teacher responded,

My student developed the habit of practicing the Movable Alphabet every day by herself. The phonemic awareness clicked. She was so proud of herself. . . . I told her, "See, you worked so hard every day and you didn't give up, and now it doesn't feel hard anymore!"

She would run over to us and tell us about her triumph: "Ms. X asked me to practice the Movable Alphabet every day—it was hard, but I didn't give up, and now I am a really good reader!"

The students listened to her and became more motivated to practice different works themselves. My student's Montessori education instilled a strong work ethic, perseverance, and confidence.

The value of this level of student persistence demonstrated the ability to continue, even while struggling, to use Montessori education materials until she mastered the skill. Important goals of Montessori education are for students to challenge themselves, to not be afraid to try difficult tasks, and to take academic risks and be comfortable with failing and trying again (Lillard, 2005).

The Impact of Montessori Education on the Dahlia Elementary School Community

During the planning year, educators came together to examine how a commitment to student learning through Montessori education might unfold within their community. With time, stakeholders observed the effect of Montessori education on the school community.

Planning year

From the onset, SYNC considered the school's mission and goals. One stakeholder articulated that SYNC was a chance to help a "struggling school." Two additional stakeholders noted that "at-risk" students could benefit from Montessori education, as this approach could help students "at all income levels" to learn. Another stakeholder noted that the inclusion of Montessori classrooms in a public school promoted more "authentic" parent involvement, as Montessori education "affects the family and extended community."

SYNC met Dahlia's needs through dedicated attention to the demographics of the community and the diversity of students' languages. During the planning year, stakeholders anticipated that Montessori education might influence language-skill development because teachers engaged with curricula that supported language based upon each child's learning needs. A stakeholder said, "A child who doesn't speak English or doesn't speak English well can work with the materials and be grasping concepts and learning just through their interaction with the materials." Because Montessori pedagogy uses concrete materials or silent demonstrations that do not always require understanding language or an advanced understanding of English, the methods did not rely on the English language competencies of each learner. Therefore, children's experiences did not solely depend upon their English competencies.

Implementation year

All stakeholders reported that SYNC met Dahlia's needs, including family engagement. Three stakeholders mentioned a success of the partnership that related to family engagement. A stakeholder reported the partnership "had a positive impact on the students and their families as well as the school and community." Family engagement was not without challenges. One stakeholder remarked, "Parents were unsure of what Montessori [education] was, and [there was a] fear of the unknown." Collaborators, however, generally felt that "family engagement has been a big [success of the partnership]; families, students, and the community are immensely excited about our Montessori program."

Montessori Education's Impact on Early Childhood Learning

Stakeholders articulated a number of perceived benefits when planning the details of SYNC. As a primary benefit,

all stakeholders believed that SYNC could positively influence early childhood learning.

Planning year

Stakeholders viewed Montessori education as having a positive effect on early childhood education. Two other stakeholders said that participation in SYNC and exposure to Montessori education was beneficial for learners as it was “student centered,” “hands-on,” and a “thoughtful way” for students to “work from where they [were].” Another collaborator said that Montessori education was “unique in that it allows for developmental appropriateness, it allows for independence on the part of students.”

Implementation year

All stakeholders reported the implementation of Montessori education to be successful and impactful. For teachers, the philosophy, curriculum, and instructional practices enhanced their ability to inform student learning. One stakeholder shared, “The uninterrupted work cycle of Montessori [education] really supports students in remaining engaged with their education.... I was able to see how my 3-, 4-, and 5-year-olds are able to be productive but at the same time know when they need a slight challenge.” Another stakeholder noted that, through SYNC, students had learned “how to concentrate, follow logical sequence, keep materials orderly, and complete a cycle of activity.”

During SYNC’s implementation, one teacher reported that “students changed and became their own person.” Stakeholders expressed the importance of students who “see themselves (more often than not) as agents of their own intellectual pursuits.” The teachers said the focus on the individual resulted in “more opportunities for the students to express their own ideas and feel free to learn at their own pace” and “the ability to see what [the] student’s full potential was.”

At the end of the first year of SYNC, participating teachers reflected on the year. Both teachers demonstrated a feeling of satisfaction in their work and in the accomplishments of their students, and both shared specific areas of growth in their students. They identified explicit examples of how their students’ skills developed over time. Equally significant were responses that highlighted student independence and ownership of their learning.

A closer look at how teachers described their students’ growth also revealed differences. As may be expected for a novice, the first-year teacher aptly identified student growth as linked to particular learning tasks within the Montessori classroom setting. Her attention often focused on the pedagogical impact of Montessori education on student learning:

I could sense [the student’s] frustration because this work was hard for her, but I encouraged her by telling her it was making her a better reader. For example, within a few weeks of routinely practicing together, she could correctly identify the beginning and ending sounds of a word. I would remind her of this progress, and she would agree to do the work with me. Then within a few more weeks she was able to identify the beginning, ending, AND middle sounds with a little assistance.

The veteran teacher also cited the importance of students’ development, as well as more broad-based outcomes, with specific references to her students’ personal growth as learners. For example, when asked about the ways in which the Montessori model influenced her work, the veteran teacher responded,

Montessori education has opened numerous teaching possibilities, one of those being starting each school year with Grace and Courtesy lessons to set the tone of the classroom, so that everyone is on the same page and that they are able to build relationships with each other, their peers, and with families. These components are great because they feed positive communication skills, and the repetition component which allows them to know what is going to happen throughout the day.

Teachers’ reports highlighted both specific, positive dimensions and relationship building on multiple levels.

The beginning teacher’s perceptions primarily linked to students’ skill acquisition as a means of encouraging confidence and mastery. She often referenced the assessments required by her school when citing her students’ performance.

All kindergarten students were required to take the DIBELS assessment three times a year. On the midyear assessment in January, [a student] did as well as her classmates in all categories except for phonemic awareness. For example, I would ask her to say the

sounds in the word cat and she would say “cod.” She could identify the first sound correctly but not the middle or the ending sounds. This lack of phonemic awareness really hurt her score and she was considered red, significantly below grade level.

When asked to describe why Montessori education matters for their students, the veteran teacher responded,

It matters to my kids because it shows them that there is more than just one way to learn. For example, having the children move at their own pace is wonderful because it prepares them for the future and the fact that not everyone moves at the same speed, and that is okay. . . .

The curriculum allows them to have fun in the classroom. Further, all of the different areas that a Montessori classroom includes can and will trigger interesting questions and conversations.

The Peace corner component allows children a space where they can cool off. It is very beautiful when you see a child make the choice to go to the Peace corner on their own to relax versus having them explode and being sent to the office.

Naturally occurring questions and the ensuing conversations in the Peace corner often centered on identity. Discussions of a student’s hijab or of being Mexican prompted the inclusion of regular dialogue among students and teachers on similarities and differences. Specific conversations included racism, with one teacher–stakeholder saying, “[My students] have not really learned to advocate for themselves or others.” When explaining Montessori education as part of a Title I school, another stakeholder said, “The Montessori curriculum has created an environment for students to share their particular life experiences and backgrounds.”

Conclusion

SYNC educators offered students opportunities to increase learning through resources not typically available to public-school children in this district. As one stakeholder reported, “We are providing education to a population of students that usually do not have access due to the fact that most schools are private.” SYNC demonstrated the power of a Montessori experience for children from a traditionally underrepresented community of learners. Program features fostered peace, justice, and individual identities. Central to Montessori

education at Dahlia were respect for self, others, and the environment.

Teaching and Learning in SYNC

The development of a strong work ethic, perseverance, and confidence are important goals for Montessori education. The Montessori classroom provided a safe place where children engaged in Montessori experiences that included independence and exposure to lesson content over time. The individualized nature of the Method allowed each child to work at his or her own pace, rather than having to move to the next lesson prematurely. Because all children worked on their own activity, each student continued to work on a skill or concept as long as necessary and often felt a sense of accomplishment following concept mastery. The teachers had the impression that this feeling motivated children to work hard in the future and to persevere when a concept proved difficult.

Although there were general differences between the two teachers on the impact of the Montessori model on students’ experiences, a common theme emerged. Specifically, teachers’ comments described their classrooms as having a culture of cooperation and a place where problem-solving actions were often initiated by students. While still 3- to 5-years-olds, students regularly demonstrated understanding of the importance of working with others. These curricular dimensions allowed teachers to move beyond general curriculum integration. For example, within the Dahlia classrooms, the Peace corner, a designated space as a component of the classroom, supported students’ self-regulation. Through group Grace and Courtesy lessons, students learned to resolve conflicts independently, rather than relying on a teacher to mediate. The specific ways in which Montessori pedagogy encouraged conflict resolution among the diverse student body was an unexpected finding at implementation.

The Community and SYNC

As a dimension of school culture, SYNC influenced the Dahlia community. For example, the opportunity for classroom teachers to engage in an alternative curriculum through SYNC reflected a responsiveness to the culturally and linguistically diverse needs of their students. Curricular flexibility let teachers and children embrace their racial and cultural identities and learn how to respect others’ identities.

Project findings underscored the realities of the contextual demands educators faced in a Title I school and of the implementation of a Montessori program within an elementary school setting. In a public-school classroom, SYNC teachers aligned their work with the expectations of all teachers by attending to the professional tasks of instruction, assessment, and assistance. As public-school educators, SYNC teachers were required to meet school, district, and state requirements for student learning. However, with its flexibility and responsiveness to the diverse backgrounds and experiences of the students, SYNC provided a venue that afforded teachers the chance to create opportunities for all learners. Teachers implemented a culturally relevant curriculum in coordination with pedagogy reflecting antibias and antiracist practices. These practices aligned with the school's fundamental commitments to social justice as part of its community. Reflecting this ethos, the supplemental texts, art, and stories used in SYNC classrooms reflected the cultures and backgrounds of SYNC students and emphasized the school's value of acknowledging and celebrating its students. Adding to the curriculum, some of the teachers and paraprofessionals shared the same backgrounds of some students, which demonstrated a recognition and valuing of home languages.

There were operational challenges in the planning and implementation of SYNC that required stakeholders to communicate directly with one another. For example, project stakeholders responded positively to SYNC's goals by incorporating more Spanish and bilingual lessons and instructors who were able to provide language support for the children, thereby responding to the changing demographics of today's communities, where multiple languages may be spoken.

Past research on Montessori education attended to student demographics and measures of effectiveness through standardized assessments of performance.

Standardized assessment of SYNC students' academic achievement was not within the scope of this research. An independent evaluator and the school district reviewed student-performance data, and early findings indicated performance trends that met, and in some cases exceeded, those seen in children in traditional classrooms. A more thorough reporting of these results is planned for a future study.

As with all case studies, limitations may include a lack of internal validity, reliability, and generalizability (Merriam & Tisdell, 2016). However, SYNC provides a snapshot of a unique project that led to open discussions of the types of academic experiences that could provide learning linked to individual identities and narratives. The feedback from stakeholder experiences and the observations of classrooms highlighted the complexity of life in classrooms and the unique ways in which Montessori education informed the Dahlia community. For SYNC teachers, the implementation of the Montessori tenets of decision-making, problem-solving, and critical thinking in the classroom resulted in individualized learning experiences for all children.

Author Information

†Corresponding Author

Mary D. Burbank† is assistant dean in the College of Education, director and clinical professor for the Urban Institute for Teacher Education at the University of Utah. She can be reached at mary.burbank@utah.edu.

Melissa M. Goldsmith is a research associate in the Urban Institute for Teacher Education at the University of Utah.

Jennifer Spikner is involved in Montessori education and resides in Chicago, IL.

Koeun Park is a graduate teaching assistant in the Urban Institute for Teacher Education at the University of Utah.

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Appendix A: Stakeholder Planning Year Interview Questions

1. What is your role in Project SYNC?
2. What do you feel is the primary benefit of SYNC?
3. The SYNC website is a tool used to spread the program to different schools. What do you hope others will learn from this project?
4. What are the roadblocks that could come or already have come into play that might negatively impact the goals and/or implementation of SYNC?
5. Do you think Montessori principles work for all school environments? Why or why not?
6. What do you think the Montessori classrooms will bring to the elementary school?
7. In what ways does SYNC promote responsive education, one of its goals? In what ways does SYNC reach all learners, another goal?
8. Where do you see SYNC having the greatest impact on student learning? Why do you say that?

Appendix B: Stakeholder Implementation Year Questions

In thinking about this past, first, year of the implementation of Project SYNC, where Montessori classrooms have been created in the public school of Dahlia Elementary, please answer the following questions by selecting a category or filling out the text boxes below each question.

1. Name (optional): _____
2. Which of the following are you **primarily** affiliated with?
 - Dahlia Elementary
 - Conservatory
 - State University
3. Overall, how satisfied are you with Project SYNC?
 - Extremely dissatisfied
 - Somewhat dissatisfied
 - Neither satisfied nor dissatisfied
 - Somewhat satisfied
 - Extremely satisfied
4. What are the **benefits** of SYNC?
5. What are the roadblocks that have come into play that have negatively impacted the implementation of SYNC?
6. In what areas has SYNC had the greatest impact on student learning, if any? Why do you say that?
7. In what areas has SYNC had the greatest impact on teachers (either those teaching in the Montessori classrooms or those who have participated in Montessori training), if any? Why do you say that?
8. How successful has the inclusion of the Montessori philosophy been in the environment of a diverse, Title I public school?
 - Extremely unsuccessful
 - Somewhat unsuccessful
 - Neither successful nor unsuccessful
 - Somewhat successful
 - Extremely successful
9. In what ways, if any, do the Montessori principles assist in the examinations of race, racism, equity, access, and multicultural education?
10. How successful has the inclusion of the Montessori philosophy been in the environment of a school with a social-justice curriculum?
 - Extremely unsuccessful
 - Somewhat unsuccessful
 - Neither successful nor unsuccessful
 - Somewhat successful
 - Extremely successful
11. Please provide specific examples of how the social-justice emphasis has been included in the curriculum at Dahlia.
12. How do students respond to the social-justice adaptations to the curriculum at Dahlia?
13. What have been the successes, if any, of the partnership between the State University, Dahlia Elementary, and Conservatory?
14. What have been the limitations, if any, of the partnership between the State University, Dahlia Elementary, and Conservatory?
15. What would you like to see done differently next year to improve SYNC, if anything, in the following areas?

- Teacher selection and training
- Student recruiting into the Montessori classrooms
- Meeting the needs of the diverse school community
- Work with families
- Communication between State University and Dahlia Elementary
- Mentoring
- Adequacy of supplies and related materials
- Attention to language (English and non-English)
- Other _____

Appendix C: Classroom Teacher Open-Ended Responses

1. Could you tell me a bit more about why the Montessori model has impacted the stories you told me about?
2. What is it that Montessori added or made possible?
3. Why does Montessori matter for the children in your classroom?